

**EFFECT OF FINANCIAL REGULATIONS ON FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

BY

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of degree. The information contained in this document has not been published elsewhere by other people except where due reference is made and authors acknowledged.

Signature.....

Date.....

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

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And have certified that all revisions that the panels and examiners recommended have been adequately addressed

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DEDICATION

This project is dedicated to my supervisors, friends and family for the moral support and understanding expressed through the duration of my research works.

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LIST OF ABBREVIATION

CBK- Central Bank of Kenya

CRB - Credit Reference Beaural

CIS - Credit Information Sharing

CBA - Cost Benefit Analysis

NPL - Non Performing Loans

ROE - Return on Equity

ROA - Return on Asset

PIT - Public Interest Theory

MFI - Micro Finance Institution

MSL - Market share of loan

CLM - Classical Linear Assumptions

NPA - Non Performing Assets

BPRR - Basel Prudential Regulations & Requirements

TRWA - Total Risk Weighted Asset

KBA – Kenya Bankers Association

DTM - Deposit taking Micro finance

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DEFINITION OF TERMS

Financial soundness Indicators (FSI's) - These are statistical measures that are designed to assess the stability, health and soundness of the financial sector (Graham, 2003)

Regulations - These are rules adopted by government /institutions and backed up by some threat of consequences (Drahos, 2000)

Policies - It is a guide towards thinking and defines the area in which a decision is to be made to achieve a given set of objectives (Laure, 2002)

Non - performing loans - This is an amount of loan that the bank considers dormant or doubtful. The repayment patterns and the level of recover ability is questionable (Choudhury, 2002)

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ABSTRACT

The study aimed at determining the effect of financial regulations on financial performance of commercial banks in the Kenyan banking sector. The Central bank of Kenya (CBK) is entrusted with the responsibility of ensuring that the Kenyan banking environment is conducive to operate through establishment of rules and regulations. These regulations have been established around the capital, asset, management, efficiency and liquidity system of rating the commercial banks due to its approach to quantify the soft notion of banks safety. The main objective was therefore to determine the effect of financial regulations on financial performance of commercial banks in Kenya. More specifically, the study sought to determine the effect of each of the capital, assets, management and liquidity regulations on the financial performance of commercial banks in Kenya both within the entity and between entities. The theoretical framework is construed around the public interest theory, private interest theory of regulations as well as the information asymmetric theory. Descriptive design was adopted in analyzing the 37 commercial banks targeted. The relevant panel data was gathered from the (CBK) database for six years starting from the year 2010 - 2015 and analyzed using the linear panel regression models. The findings were presented using graphs and tables, the results indicated that capital adequacy regulations and liquidity regulations have a positive effect on the variation of financial performance while asset quality regulations and management efficiency regulations affect the financial performance of bank in Kenya negatively. Capital adequacy, asset quality and liquidity regulations were statistically insignificant while management efficiency was statistically significant at 95% confidence level. Recommendations call for continuous review of the credit regulations, employment of sound techniques in the management of bank's operations as well as invitation of scholars to undertake thorough research on the impact of the specific regulations.

Key Words: Financial regulations, performance of banks, capital adequacy, asset quality, management efficiency, liquidity.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The chapter unveils the background of the study, statement of the problem, purpose and justification as well as the significance of the study at hand aimed at finding out the effect of financial regulations on the financial performance of commercial banks in Kenya.

In the modern economy policies are formulated to influence the economic growth and development goals of an organization and the nation at large. The evaluation of such regulations is as important as the regulations themselves due to the dynamism of the modern business environment. According to Treasury Board Canada Secretariat (2009), a regulation works if it solves or reduces the problem that led to its formation in the first instance which requires evaluation for proof.

The Central Bank of Kenya (CBK) is mandated with the role of ensuring a healthy and stable banking sector, in this regard CBK engages in formulation of laws and policies to be applied across the commercial banks and micro finance institutions in Kenya. Such policies are aimed at reducing unfair market practices and thus promote the soundness in the sector they include liquidity regulations aimed at ensuring solvency in banking operations. Majority of the policies by the banking sector regulator is founded on Credit information sharing which dates back to the year 2008 where the mechanism was launched in Kenya following the gazette of the CRB 2008 which was effectively operational on 2nd February 2009 (Bank supervision annual report, 2007).

Credit Reference beaural 2013 regulations was introduced by the Central Bank of Kenya (CBK) in order to ensure that the commercial banks, micro finance institutions (MFIs) as well as utility firms share both positive and negative information regarding their borrowers through the licensed credit beaural which was not enhanced in the previous regulation.

Regulations can have both positive and negative impacts, Jabangwe and Kadenge (2016) argued that increasing regulatory capital requirement may not ensure financial health in the banking sector on the other hand, Parker and Kirkpatrick (2012) reported that the effects of better regulation on economic welfare are only partially understood since majority of decision makers over rely on the cost of regulation and assume the benefits that accrue to the regulation, this leads to biasness in the policy making decisions. It is therefore only after considerate evaluation that banking regulations can be assessed in order to determine its capability in meeting the desired objective of improving the performance of the financial institution, especially commercial banks in Kenya where the study is grounded. The relationship between credit information sharing and the level of non-performing loans is clearly established (Kipyego & Wandera, 2013), but the past study embarks on using qualitative judgments and methodologies thus lack the statistical reliance. This study put greater emphasis on the effects of soundness in the entire commercial sector on the financial performance of commercial banks using quantitative data from the central bank of Kenya.

Existence of nonperforming loans reduces the profitability of an institution and its sustainability or survival; this is due to the high cost of loan recovery as well as increased provisions for bad debts by the commercial banks (Svoronos, 2002; Sichei, 2000 & Omuondo, 2002). This threat to the commercial banks lead to the involvement of the Central Bank of Kenya in the formulation of a credit oriented policy that could deter the adverse outcomes of bad loans from undermining

the bank operations (Essendi, 2013). According to Waweru and Kalani (2009), during the commercial banking crisis, customer failure to disclose relevant information with regards to their credit history, during loan application was one of the major causes of bank failure. This highlights the detrimental effects that can result to ignoring the commercial banking sector where the Central Bank of Kenya has pioneered to provide protective regulations.

Radaelli and Fritsch (2012) evaluated regulatory management tools and programs and found that there is no need to impose new organizational structures in regulatory evaluation to the existing ones and thus is sufficient to decide and adopt a common set of indicators and agree on the information provided by the indicators. The study adopts the commonly agreed set of indicators/determinants of financial performance which is the expected outcome from the behavior caused by the regulation in the commercial banking sector. In Kenya, the Central bank applies the CAMEL rating system to assess the soundness of financial institutions (CBK, 2010). CAMEL rating system was originally developed in the United States for assessing the overall performance of the banks and credit unions; however, its use was implemented outside US by bank supervisory regulators such as CBK. The rating system consists of some of the determinants of profitability in the banking sector which includes but not limited to; capital adequacy, asset quality, management efficiency, earnings as well as liquidity. This study will in addition, incorporate size of the bank as a determinant of profitability which is explained by the market share of the commercial bank in the Kenyan market.

According to Nduati (2013), financial performance is a measure of firm's profitability in relation to the money invested. Return on equity (ROE) is expressed as a fraction of net income and shareholders' equity. The higher the ratio, the better the financial performance and vice versa. This indicates that with decreased credit risk as a result of sound policies by Central Bank of

Kenya, there is increased efficiency on the usage of shareholders equity and thus more income. The primary objective of the regulator is to ensure that credit risk is minimized in the commercial banks, thus ensure that they perform their functions effectively more so in stabilizing the economy through resource/finance mobilization and distribution more sustainably.

Parker and Kirkpatrick (2012) conducted a study on the impact of regulatory policy on the economy and profitability. They found a negative relationship between regulatory policy and profitability suggesting that regulation reduces competitive pressures as profitability trends unveiled. The study used capital stock and turnover elasticity to establish the impact and therefore can be summed up that the degree of the regulatory burden reduces capital stock elasticity.

Swedish Agency for growth Policy Analysis (2010), conducted a study investigating the effects of regulatory burdens on companies across countries based on 10 components and aggregated the mean score for each country. The study used the World Bank's doing business index and found that regulatory burden increases the required return on investment thus negatively influencing investment. The methodological approach of this study conducted in Sweden is adopted in my study especially in data analysis where 37 banks were involved in the study and data for a period of six years for the 5 components including the dependent variable.

In addition, several studies regarding regulatory policies have been conducted across the countries as measured by the macro variables and indicators: Djankov (2006) established a relationship between the burden of business regulations and economic growth using World Bank database indexes for 135 countries. They employed the use of multiple regression analysis; the study found that regulatory business burden has a positive relationship with economic growth of

a country. Loayza (2004) conducted a study hypothesizing that regulations damages the GDP per capital and increases GDP volatility by using cross country regression. In the study 76 countries were sampled and found that regulations have a negative causal relationship with on economic growth. Gorgens (2003), in their study estimated the impact of regulation using Fraser Institute's Economic Freedom Index as a measure of regulatory burden using cross country regression and found that, less heavily regulated economies endures higher economic growth than the countries with heavily regulated ones.

Seuraj and Watson (2012), in their empirical analysis showed that compliance with the Basel Prudential regulations and requirements (BPRR) enhanced the development of the banks in emerging economies through the improvement of performance. However, these banks must invest time and resources to ensure compliance with the regulations.

1.1.2 Performance of Commercial Banks in Kenya

Profitability is the commonly used measure of a firm's performance (Ross, Westerfield & Jaffe 2005). Van Horne (2005), indicated that financial ratios are used to assess the ability of a firm to generate profit. Ratios take into account income taxes, efficiency of operations, profitability on assets, pricing policies and so on.

The level of a firm's profitability is assessed by evaluating the level of efficiency on the shareholders equity as well as firms assets on the generation of returns. According to Samad and Hassan (2000), ROE measures the net earnings per dollar equity capital and stands to be the most crucial measure of the firm's performance and potential. Other measures of financial performance include financial efficiency, solvency, as well as debt repayment capacity; however, modern organizations have in the recent past considered multidimensional aspects in managing

organizational performance as opposed to only financial performance such as employee stewardship, customer service, community outreach etc.

1.1.3 Financial Regulation and Financial Performance of Banks

Financial regulations are the rules that define the space within which the financial institutions can carry out their operations (Caprio, 2008). The study focus on Capital, asset quality, management efficiency as well as liquidity regulations in order to determine how each of them have influenced financial performance of commercial banks in Kenya. CAMEL system of rating financial institutions and commercial banks have been widely adopted across the globe and accepted to quantify the soft notion of banks safety (Derviz, 2008). Financial regulations are formulated in order to protect the stability and soundness of the financial sector as well as protecting public interest especially the depositors (Llewellyn, 1999). However, the regulations should not act as barriers towards the development of the general industry being regulated (Stiglitz, 2001).

Financial regulations are basically instituted to protect the interest of the stakeholders and in this case the consumers, however in the banking sector an additional motivation for regulations to enhance sustainability in the sector was established (Llewellyn, 1999), in this regard the regulations have to strike a balance between the two major objectives in the banking sector.

Focusing on the role towards enhancing stability in the banking sector, regulations are aimed at ensuring that the banks operate in a conducive environment and which led to establishment of CAMEL regulations. Regulations on capital adequacy have majored on increasing the bank's ability to absorb shocks and manage the risks which is consistent with improved performance, those banks that are not able to meet the liabilities such as customer deposits whenever

customers demand is raised end up suffering from reputation risk thus losing customers in long-term, this is most likely to affect future profits and thus poor financial performance (Bhattacharya & Thakor, 1993). The capital regulations increased bank capitalization to Ksh. 5B from Ksh. 2B, this was in an endeavor to strengthen the Kenyan banking sector, slightly more than half of the commercial banks have been able to comply with the capital regulation to date.

Asset quality regulations aims at minimizing the credit risk that result to increasing the level of non-performing loans, not only through sharing both positive and negative information pertaining to the borrowers but also through eliminating defaulters by blacklisting them. According to (Svoronos, 2002, Sichei, 2000 & Omuondo, 2002), existence of nonperforming loans (NPL) reduces the profitability of an institution and its sustainability or survival; this is due to the high cost of loan recovery as well as increased provisions for bad debts by the commercial banks. Asset quality regulations such as credit regulation beaural 2013, aimed at enhancing information symmetry between the borrowers and the lenders in the financial sector. The regulation is facilitated by a financial intermediary known as credit reference beaural (CRB) licensed by the central bank to gather borrowers credit information and share with the financial institutions.

In addition, the management efficiency regulations are based on the professionalism and moral suitability of the managers which aid in the choice of decisions aimed at asset management for the specific banks, management efficiency regulations are more internally constituted through the governance structures and which directly influence the financial performance of the bank. Athanasoglou, (2005) argues that the management is responsible of managing the bank's expenses and thus affect the profitability of the bank. Operational regulations such as interest rate ceiling influences the level of management efficiency since their decisions are being

inhibited and thus provide a narrow discretion upon which the managers can be able to raise the banks interest income (Pasiouras, 2010). However, there are internal influence on the management efficiency resulting from the recruitment process where incompetent candidates are selected to work in top banking positions and therefore fail to employ adequate techniques and tactics to manage the banks operating expenses.

The liquidity regulations such as the minimum liquidity of 20% by the central bank aims at ensuring that the bank is at least able to meet the current demands as and when placed by the customers, this is in order to protect the depositors in line with the private interest, leniency on the liquidity regulations will put the banks lead to banks borrowing more from the Central Bank through overnight lending in order to meet the customers demand thus reducing their profitability on the other hand too stringent regulations on liquidity will prevent the banks from investing the customers deposits into fixed assets and thus minimize future generation of other incomes which inversely influence the financial performance (Allen & Gale, 2004) .

1.2 Problem Statement

The critical importance of a sound financial system cannot be overlooked especially in a developing country such as Kenya, this is due to its contribution to the economic growth and the stability of the security exchange market. This is evidenced by the fact that the banking sector is the most regulated sector of the economy globally (Caprio & Levine, 2006). According to Welmer and Vining (2010), regulations are intended at correcting market failures such as information asymmetric, concentration of market powers as well as externalitiess.

According to Svonoros (2000), the banking sector experiences increasing nonperforming loans and thus reduce the profitability of the financial institution. The banking sector report (2015)

indicated that nonperforming loans increased from Ksh. 90.377 Bn to Ksh. 124.152 Bn in 2015, in the same period pre-tax profits declined with 5.03 % in 2015 compared to that of 2014, however, the banking sector report (2017) indicates that nonperforming loans are on the rise which generates uncertainties regarding the future of the commercial banks in Kenya. This trend in the banking sector present ambiguity on the effect of current financial regulations on the financial performance of banks in Kenya. World Bank expert on regulation and governance Coglianesi (2012), indicated that regulatory policies have until now been far too much often recommended without serious evaluation to support them.

A number of prior researches on regulatory evaluation have been conducted; Swedish Agency for growth policy analysis (2010) investigated the impact of regulatory burden on companies across countries and found that regulatory burden increases the required return on investment. Djankov (2006) established a relationship between the burden of business regulations and economic growth using World Bank indexes and found that regulatory business burden is related to economic growth of a country. Barth (2004), reviewed the implications of supervisory activities on the performance of financial institutions and found a weak association between the supervisory powers and financial performance of banks. A study by Mureithi (2011) investigated the effects of financial regulations on financial performance at DTM's in Kenya and found a positive relationship with the financial performance.

However, despite the contradicting results previous studies fail to address the effect of regulations in the Kenyan banking sector as well as relying on the qualitative aspect of the regulations rather than quantitative. The study bridges the gap by adopting quantitative methodology in the analysis in order to bring out clearly the effects of the aforementioned regulations on financial performance in the Kenyan commercial sector.

1.3 General Objective

The general objective of the study is to determine the effect of financial regulations on financial performance of commercial banks in Kenya.

1.3.1 Specific Objectives

- i. To determine the effect of capital adequacy regulation on financial performance of commercial banks in Kenya.
- ii. To assess the effect of asset quality regulation on financial performance of commercial banks in Kenya.
- iii. To measure the effect of management efficiency regulation on financial performance of commercial banks in Kenya.
- iv. To find out the effect of liquidity regulation on financial performance of commercial banks in Kenya.

1.4 Research Questions

- i. What is the effect of capital adequacy regulation on financial performance of commercial banks in Kenya?
- ii. What is the effect of asset quality regulation on financial performance of commercial banks in Kenya?
- iii. What is the effect of management efficiency regulation on financial performance of commercial banks in Kenya?

- iv. What is the effect of liquidity regulation on financial performance of commercial banks in Kenya?

1.5 Justification of the Study

The Kenyan banking sector have in the recent past experienced high levels of non-performing loans (NPLs), this is an indication of weak policies in the management of credit risks in the banking sector. In addition, according to Svoronos (2002), existence of non-performing loans has been associated with lowering profitability and survival of the institution. This development motivated the research concept in determine the effect of the safety notion enhanced by the regulation on the financial performance of commercial banks in Kenya. The study aimed at restoring a stable commercial banking sector in the long run which contributes towards economic growth and development of the nation through savings mobilization.

1.6 Significance of the study

1.6.1 Central Bank of Kenya

The Central Bank of Kenya being one of the significant authority in supervising commercial banks in Kenya benefit from the study in several ways: The regulator is being able to understand the effect of the soft notion of banks safety regulations on the financial performance of the commercial banks licensed to operate in Kenya. The deeper understanding of this effect enables the bank in formulating effective policies that not only enhance safety of the deposit takers but also improve the financial performance of the institution.

1.6.2 Kenya Bankers Association

The study not only focused on the regulator but on the welfare and sustainability of the

commercial banks in general. The financial regulations aim at ensuring that the bank failure does not occur as a surprise but gives early warnings. The named association in charge of the Kenyan banking sector focuses on internal wellness by the commercial banks as they focus on the profitability so that the banks can operating more effectively and smoothly.

1.6.3 Bank Customers

In any banking system globally, the profitability level of a commercial bank cannot give total assurance on the stability and safety of customers deposits. In this regard, the study provides additional confidence on the side of the customers in relating the soft notion with the financial performance of the commercial bank and thus be able to detect and monitor the symptoms of failure in advance.

1.6.4 Shareholders

The shareholders interest which is barely to maximize on their returns was met and thus making the shareholders both for publicly and privately owned bank to reap more benefits from an institution in terms of dividend since the policies enacted were aligned with the commercial banks objectives of maximizing return within safety thresholds.

1.6.5 Academicians and Future researchers

Last but not least, the undertaking of the study unveiled various inconsistencies in previous studies as well as new insights on the area being studied. This on the other hand provided rich grounds for further studies by future researchers and academicians who are interested in the regulatory performance studies.

1.7 Scope of the Study

The study focused on determining the effect of financial regulations on the financial performance of banks in Kenya. The data was gathered from the Central bank of Kenya database regarding the 43 licensed commercial banks (CBK 2016, report). The data for six years starting 2010-2015 was used in the analysis since it was the period when the banking sector witnessed transformation with regards to legislation just after the global financial crisis of 2007/2008.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter entails the relevant theories and prior studies that build up the literature on economic regulation which explains various reasons why the government intervenes and or interferes with the market operations in a given sector. The empirical review, conceptual framework was also included. Operationalization of the variables adopted in the study as well as the chapter summary is also outlined.

2.2 Theoretical Framework

2.2.1 Public Interest Theory (PIT)

This economic theory based on regulation was first developed by Arthur Cecil Pigou (1932), however different economics scholars have in the recent past reviewed the theory where some support Pigou argument and other criticize its development. According to Pigou (1932), public interest theory holds that regulations were meant to protect the interest of the society as a whole rather than the regulators involved in the formulation. This can be implied in the study where the Central bank of Kenya formulates regulations in order to protect the public interest. However, in the banking sector, the public interest is accrued to a socially efficient allocation of resources which minimize variance and maximize output as well as perform other functions it is charged with effectively (Levine, 1997).

The public interest theory categorizes the interest groups into two; i.e. regulated firms whose aim is to maximize returns as well as consumers who aim at benefiting from the goods and services at a lower rate. It is due to these contradicting interests of both the regulated firms and the

customers that call for government interference as a neutral arbiter since the market is assumed to be full of inefficiencies and it was cost less for the government to enhance regulations (Posner, 1974). In this aspect, the role of the central bank cannot be neglected in responding to the demand of the public (banks & customers) in order to correct the inefficiencies, market failures and unfair market practices (Posner, 1974).

This theory perspective of protecting a social group or a sub class of the public was heavily criticized by Stigler (1971) who asserted that regulation is for the industry and is designed primarily to benefit it. The other critic on the public interest theory was by Posner (1974), who indicated positive transaction costs associated with government regulations such as personnel and buildings therefore denying his earlier assumption.

According to Posner (1974), the empirical evidence showed a surprising performance on the regulatory performance, he overemphasized that public interest theory of regulation considers regulation to be created for public purposes but are then mismanaged thus making it difficult to achieve the primary objective. The study is positioned towards enhancing regulatory management practice where a real regulation reform calls for introduction of culture of regulatory reform experimentation and evaluation (Greenstone, 2009). Public interest theory is aligned with the study since it explains the origin of the regulations, according to the theory regulation serves the role of correcting market failures such as the increased nonperforming loans in the Kenyan banking sector.

2.2.2 Private Interest Theory

This theory was developed by Posner (1999), the theory stipulates that private groups with large stakes of interest in the regulated sector team up in order to weaken the effects of the regulation

at the fulfilment of their own vested interests. This theory holds that; the private interests are therefore met at the expense of the general public despite the existence of a regulation. In the financial sector however, Central banks are authorized to ensure that the institutions in the sector are operating effectively and safely through provision of monitoring and supervisory services which call for the formulation of policies, rules and regulations.

According to private interest theory, the banks will collude to weaken the expected outcome of the regulation by the regulator perhaps through manipulation of the implementation process and lobbying. For private interest theorist, the regulations will have a low impact if inconsistent with the banks interests (Hertog, 1999). In line with financial regulations, the central bank of Kenya have in the recent past focused on regulating the banks interest rate at the benefit of the public who can borrow at a cheaper rate at the expense of the lender. Other regulations include capital regulations that are aimed at protecting the depositors by setting higher capital requirements in order to engage in the bank's activities of receiving deposits from customers and giving out loans.

Private interest theory in addition links the regulatory behavior in the financial sector with the efficient market hypothesis developed by Eugene Fama (1965), it indicates that just like the capital market inefficiency, the financial sector is associated with inefficient activities where key players lobby for the supervisory agents to act in their private favor during the supervision, this inefficiency of the financial market spills to the commercial banking sector where the influential intermediaries are able to distort or manipulate the regulatory information to suit their own private interests in the regulation.

The theory implies similarities with the public interest theory in that, the policies are established for public utility but doesn't clearly show why and how the private sector succeeds in their vest

for private gain in the regulations (Kahneman, 2012). The study seeks therefore to determine the effects of the financial regulations on the financial performance of commercial banks in Kenya in order to assess the level of interference of the regulations on the favor of the banks through the financial performance which is attributed to the shareholders whose influence in the supervisory intermediaries cannot be underestimated. The theory is significant to the study as it outlines the weaknesses in the regulatory framework that could influence the effectiveness of the regulations arising from vested interest, this therefore mean that existence of a regulation doesn't always depict stable system.

2.2.3 Asymmetric Information Theory

The theory was first developed by George Akerlof (1970), it asserts that information in the market is always held at different levels among the parties involved, this may be between buyers and sellers, managers and investors, lenders and borrowers as well as among the investors themselves. In his paper on the 'Quality uncertainty and market for lemons, he used an example of the buyers and sellers in the automotive sector where the seller having more information about the product than the buyers could lead to dysfunction of the business. The sellers know the value of the cars but the buyers don't know and therefore if the cars are of higher value and the customers quote lower prices, then the sellers will quit the market, this is purely on the information asymmetry with regards to the quality of the products being traded between the buyers and sellers (Akerlof, 1970).

Akerlof theory of information asymmetry in the banking sector applies between the lenders and the borrowers in two ways: 'ex ante' and 'ex post', 'ex ante' is where the lenders fail to differentiate effectively the level of risk by the borrower, however the borrower is well aware of

his/her capability to pay back the requested amount from a financial institution, this affect the bank either by giving loan to the borrower who will not pay back leading to increased non-performing loans and thus less profit by the institution or either deny credit to a borrower who had low risk of repaying back the loan thereby losing the opportunity to benefit from the interest (Leyland & Pyle 1977). 'Ex post' information asymmetry implies on existing borrowers where they understand the return on projects and cash flow with less information by the banks. Financial regulations seek balance on 'ex ante' information asymmetry by providing available information regarding the borrowers loan history thereby allowing the banks to assess credit risk more effectively and accurately.

According to Claus and Grimes (2003), information sharing through financial intermediaries will eliminate information asymmetry and thus enhances credit to a wider group by the lenders. Banking regulators are called upon such as the Central bank to ensure existence of effective policies for a sound banking system. The importance of CAMEL regulations instituted by Central bank is in line with previous recommendation since aaccording to Welmer and Vining (2010), regulations are intended at correcting market failures such as information asymmetric, concentration of market powers as well as externalities and therefore critical to ensure that the policies established are working effectively by continuous evaluation of their effect in the banking sector and more so on financial performance. This theory plays a critical role in the body of the study at hand since it illuminates the characteristics of the existing relationship between the borrowers and the lenders (financial institution).

2.3 Empirical Review

2.3.1 Capital Adequacy and Financial Performance of Banks

This indicator is measured by total capital/ Total Risk weighted Asset of the commercial banks, in this regards, the higher the values the more adequate capital employed is. The use of this variable is justifiable since the regulation aims at enhancing the total asset of the commercial bank, through preventing default loans. However, the general effect of the regulation through capital adequacy will be assessed on the bank's profitability.

Capital adequacy enables the bank to absorb the risks associated with its operations as well as expand its capacity to bear the risks (Bhattacharya & Thakor, 1993), this indicates that capital adequacy is directly related to better performance of the bank resulting from the increased risk bearing capability.

Previous researches have shown contradicting results with regards to the impact of capital adequacy on banks performance where a study by (Pasiouras & Kosmidou 2007) showed a positive impact of capital on the banks profitability, in contrast a study by (Hoffman 2011) was inconsistent with the prior finding since it found a negative relationship between capital and banks profitability.

According to Posner (2015), the financial crisis in the year 2007 - 2008 is attributed to the government under regulation from the 1990's to up to the time of the crisis. The study reinforces the need of regulations in the banking sector by the government especially when it comes to capital, capital adequacy is the extent to which banks assets exceed the liability, in other words it is how safe the bank is from the unexpected risks such as bank runs. This study as well links the over regulation with the under regulation prior to the 1990's and which leads to a

recommendation on one of the approach towards streamlining the capital adequacy regulations to the regulator of the commercial banks which is normalization of the regulation.

According to Tarbert (2001), capital adequacy regulations has been intended to ensure smoothness in the banking industry but argues that it is ill advised. This is due to the government failure to unify the regulations as well as treating the banking sector uniformly with other industries in as far as capital ratios. This study calls for a rethinking of the banking capital adequacy regulations as it attaches huge significance towards prevention of the banking failures/shocks.

Currently, Central bank has regulated the banking sector by setting capital requirements at Ksh. 5Billion where only 21 banks have been able to comply with the regulation. The increase in capitation was a move to ensure fewer but stronger players in the banking sector.

2.3.2 Asset Quality and Financial Performance of Banks

Asset quality basically means the loan quality; it is the evaluation of the credit risk associated with the banks' asset. Asset quality is measured by non-performing loans less provisions as a percentage of total loans. However, according to Athanasoglou (2005), bank assets is composed of current assets, fixed assets, credit portfolio among other investments, moreover, the growth of the bank's asset size is linked to its age.

High asset quality is associated with lower percentages which depict increased credit risk followed by low loan repayment by the borrowers. Credit information sharing influences asset quality in the commercial sector since it ensures that credit managers have sufficient information in assessing their borrowers thus reducing the risk of defaulting. This is because the bank's major

asset is loans which have a higher bearing on the profitability of commercial banks. However, these assets are exposed to higher level of credit risk resulting from non- repayment of loans by the customers (Dang, 2011).

Existence of nonperforming loans (NPL) reduces the profitability of an institution and its sustainability or survival; this is due to the high cost of loan recovery as well as increased provisions for bad debts by the commercial banks (Svoronos, 2002, Sichei, 2000 & Omuondo, 2002). Lower ratios indicate that the bank's assets are healthy and therefore positive indicator of profitability and soundness of the institution.

According to Chipalkatti and Rishi (2007), Indian banks understated their Non- Performing Assets (NPA's) whose implication can result to a global crisis due to the economic position India holds in the World especially in supporting businesses. The study redoubles the need of asset regulations in order to curb such reporting behaviors which only have a short term financial benefit to the bank.

Asset quality regulations are instituted around the minimization of credit risks in the banking sector, these regulations establish credit information sharing among the lenders so as they can reduce the non- performing loans. This has been done through establishment of credit reference beaural such as the CRB 2013 regulation (Banking Act, 2015).

2.3.3 Management Efficiency and Financial Performance of Banks

This is also referred to as the operation efficiency, it is based on the level at which commercial bank allocates the available resources in generation of income. It is calculated by operating cost/total income. According to Athanasoglou, (2005) the management is responsible of

managing the bank's expenses and thus affect the profitability of the bank. Lower ratios are better since they express increased income with less cost of operation. With reduced credit risk and effective credit information sharing, cost of managing loan portfolios is expected to decline due to proper and timely loan repayment thus increasing the income from the operations.

Kwan and Eisenbeis (1996) elaborated the relationship between banks efficiency and performance by focusing on the ability to raise capital, more specifically; they said that efficient banks are able to raise capital at lower cost as compared to inefficient ones. In addition, they asserted that lower cost of capital is associated with increased profitability and better operation efficiency.

Evolution of efficiency theories in the 90's put more focus on the cost efficiency (Berger 1993 & Resti, 1997), however, studies on bank efficiency have as well faced critic given that they failed to consider the profit side of the banks operations. This is because, Majority of the banks that experience greater inefficiencies and costs also report high levels of profitability, in short the relative figures of bank efficiency measures fail to be consistent with reality due to the omission of the profit side of banks operations (Berger & Humphrey, 1995). Management related regulations by the supervisory management are on the professionalism and moral suitability of the managers. This indicates the regulators' influence on the way banks assets are being utilized from time to time.

2.3.4 Liquidity and Financial Performance of Banks

Liquidity is the ability of an institution to attend to the current needs as and they come due, in a commercial bank, liquidity is a sensitive pertinent of its overall management since low liquidity levels can cause severe implications to the bank operations. It is measured by liquid assets/ total

deposits. The Central Bank of Kenya (CBK) recommends minimum liquidity ratio of 20 %. Credit risk management especially through sharing both positive and negative information of the borrower's aids in enhancing banks liquidity through accurate timing of loan repayment by the borrowers thus influencing the level of profitability by the commercial bank.

According to Bhattacharya and Thakor (1993), the banks major role is construed around the need to create liquidity as well as absorb the risks that are associated with its operations. However, the two roles are inversely related as decreasing liquidity will put the bank into bank run when the demands by customers cannot be met at the right time, this is supported by (Allen & Gale, 2004) who insinuate that the more illiquid the bank is, the higher the risk associated with meeting the customers liquidity demands due to the challenges in disposing illiquid assets to meet the current demands by the customers. According to a study conducted by Ravi and Sharma (2011) liquidity negatively impacts on a bank's performance while Dang (2012) indicated that adequate level of liquidity is positively related to profitability of commercial banks.

This inability to meet the customers demand on time has been common in causing the banks failure even in the Kenyan financial sector a type of risk usually known as bank run. However, central bank has always been offering lending through a discounted rate to the banks in order to curb the short term liquidity problems and thus enable the bank to perform effectively. A study by Gatev and Stahan (2006), found that banks have an added advantage in hedging liquidity risk as they experience inflows of deposits following liquidity shocks, this enables them to have more funds to meet the higher demands on loans at such times of crisis thus enabling the banks to become more profitable and opportunistic.

2.4 Conceptual Framework

A conceptual framework is a schematic representation showing an understanding of the relationship among the variables being reviewed.

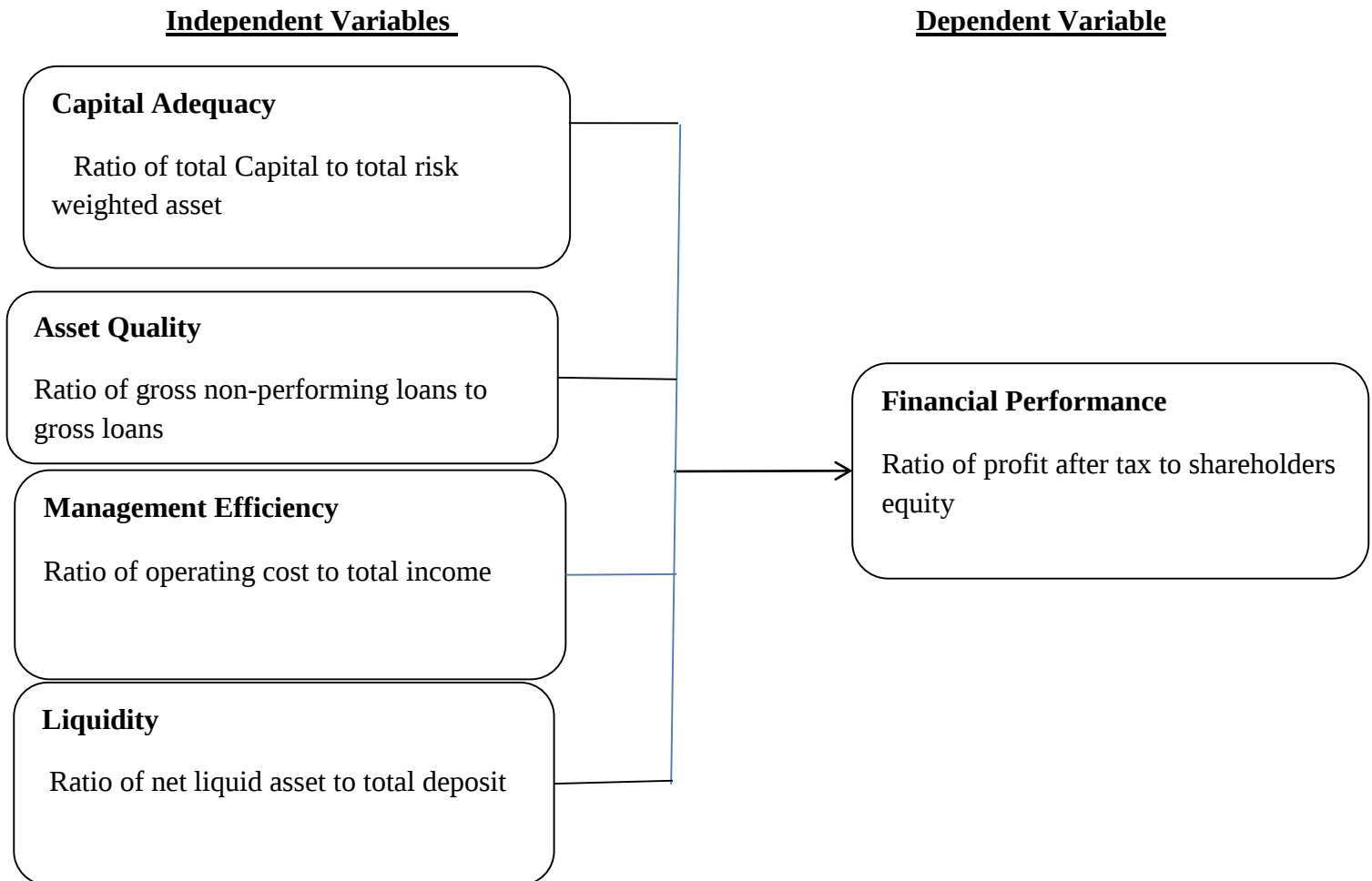


Figure 1: Conceptual Framework

Source: Author 2017

2.5 Literature Gap

	Author	Subject	Finding	Gap
1	Cary Coglianese (2012)	Evaluating the impact of regulation and regulation policy.	Regulatory policies have until now been far too much recommended without serious evaluation to support them.	Fails to address the methodological design of policy evaluation.
2	Kipyego Kwambia & Moses Wandera (2013)	Effects of Credit information sharing on non-performing loans(case study of KCB)	Credit information sharing and the level of non-performing loans are indeed related.	The study relates information sharing on non-performing loans whereas the current study embarks on policy regulations on financial performance
3	Lucas Njoroge & Anne Kamau (2010)	Macroeconomic developments and banks behavior in Kenya	Kenyan banks has more provision for bad debts during high profit periods	Shows negative relationship between financial performance and loan quality
4	Swedish agency for growth policy analysis	Impact of regulatory burdens on companies	Regulatory burden increases the	The study is conducted on companies across

	(2010)	across countries	required return on investment thus lowering performance.	countries thus giving general findings. It is not country/ company/ industry specific
5	Richard A. Posner (1971)	Regulatory cost and public interest	Regulations respond to the demand of the public to prevent unfair market practices	Market is full of inefficiencies therefore need to be regulated/ evaluations
6	Greenstone (2009).	Regulation reform	Real regulation reform calls for introduction of culture of regulatory reform experimentation and evaluation	Regulations have far much been recommended without prior evaluation
8	George Akerlof (1970)	Market for lemons	Information asymmetry leads to dysfunction of the market	Its challenging to eliminate both ex ante and ex post information asymmetry

2.6 Chapter Summary

This chapter establishes a causal relationship between the soundness in the banking sector as depicted by the financial regulations on the profitability (ROE) in the banking sector. This is because commercial banks adopt business models that rely heavily on the credit risk since lending is the major profit making activities in the banking sector. The theories revolve around the regulations and policies, portfolio risk as well as information sharing which builds up the architecture of the study. The conceptual framework clearly outlines the relationship among the variables (dependent and independent variables). Lastly, previous studies are included regarding policy development and regulation in the economic sphere.

The past studies are informative especially on the qualitative approaches towards regulatory management; majority of them found a negative relationship between regulations and economic growth indicators, the current study adopts quantitative methods at the industry level (banking), it focus on evaluating the effect of regulations incorporating the determinant of banks performance (ROE). This study therefore adds more knowledge into the field of regulatory management by using a quantitative approach towards regulatory evaluation which has scarcely been effected in previous studies.

2.7 Operationalization of Variables

The effect of the independent variables was measured on the dependent variable (Y) which is based on the financial performance (profitability). The outcome of the study was measured from the statistical analysis of data gathered from the central bank as shown below:

Table 1: Measurement of Variables

Variables	Formula	Analysis Tool
Return on Equity(ROE)	<i>Profit after tax / shareholder equity</i>	M.s Excel
Capital adequacy	<i>Total Capital / TRWA</i>	Ms Excel
Asset quality	<i>Gross NPL / Gross Loans</i>	Ms. Excel
Management efficiency	<i>Operating cost / Total income</i>	Ms. Excel
Liquidity	<i>Net Liquid Assets / Total Deposits</i>	Ms. Excel

Source: Author 2017

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the research design, target population, sample design, data collection, data analysis and diagnostic tests adopted in undertaking the research study.

3.2 Research Design

The study employed descriptive research design where according to Mugenda and Mugenda, (1999), descriptive research is a scientific method of investigation in which data is collected and analyzed in order to describe the current conditions, terms or relationship concerning a problem. Descriptive design allows for an in-depth investigation of the variables studied in the case study since it helps in providing quantifiable information unlike many regulatory & policy based studies that only make use of qualitative information that is vulnerable to subjectivity. This approach was enhanced through the use of financial statement's data from the various banks in Kenya which were studied.

3.3 Target Population

Target population is the specific population about which information is desired. According to Ngechu (2004), a population is a well-defined or set of people, services, elements and events, group of things or households that are being investigated. Currently, the Central Bank report 2016 indicated that there were 43 licensed commercial banks (see appendix I). However, three of these banks including; Chase bank, Imperial bank and Charter House bank had been put under statutory management. In addition three other banks which included development bank, Paramount bank and Guaranty bank contained incomplete information and therefore excluded

from the study. The study targeted all the other 37 licensed commercial banks in Kenya that are operational and had complete information for reliability.

3.4 Data Collection

Kothari (2004), defined secondary data as information already collected by someone and for some purpose and are available for the present study. The study employed the use of secondary data which was extracted from the Central Bank of Kenya database. In addition, it was supplemented with more information from the specific bank website and published journals. Data for the six years period from 2010 - 2015 was gathered in relation to the variables under the study. These variables included Capital adequacy, asset quality, management efficiency, liquidity as well as return on equity (ROE). Other secondary information was gathered from journals in order to form a strong research and theoretical base.

3.5 Diagnostic Tests

Various tests such as multicollinearity, unit root test and heteroskedasticity were conducted as follows:

3.5.1 Multicollinearity test

Multicollinearity is where there is high correlation between the independent variables in the study. This problem lowers the predictability of independent variables on the dependent variables and therefore should be eliminated by dropping the independent variables that are highly correlated. Multicollinearity was tested by using correlation matrix where the variables showed relatively low correlation of below 0.5 thus lowering chances for multicollinearity problem.

3.5.2 Heteroskedasticity test

Heteroskedasticity means that the variance of error term is not constant and therefore makes the effect of the variables being modeled insignificant or ineffective. The test is available for Fixed effect model which was not adopted for the study.

3.6 Data Analysis

Data analysis is the whole process, which starts immediately after data collection and ends at the point of interpretation (Kothari, 2004). The study employed the use of descriptive statistics in analyzing the screened data in this regard the mean and standard deviation of the variables under study was determined both for within firms and between firms. This was enhanced by fitting a POLS, FE or RE panel regression model in form shown below.

Pooled OLS Model

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

Fixed Effect Model

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

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

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \lambda_t + U_i + \epsilon_{it}$$

Random Effect Model

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

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + w_{it}$$

Where,

$$w_{it} = \varepsilon_i + \varepsilon_{it}$$

$$\beta_0 = \text{Constant}$$

$$Y_{it} = \text{ROE (Dependent variable value for individual } i \text{ at time } t)$$

$$X_{1it} = \text{Capital adequacy (Independent variable 1 value for individual } i \text{ at time } t)$$

$$X_{2it} = \text{Asset quality (Independent variable 2 value for individual } i \text{ at time } t)$$

$$X_{3it} = \text{Management efficiency (Independent variable 3 value for individual } i \text{ at time } t)$$

$$X_{4it} = \text{Liquidity (Independent variable 5 value for individual } i \text{ at time } t)$$

$$\varepsilon_i = \text{Error term due to variation between firm variation}$$

$$\varepsilon_{it} = \text{Error across time}$$

$$U_i = \text{Error within entity}$$

$$\varepsilon_{it} = \text{Error term due to residuals}$$

$$\beta_0, \beta_1, \beta_2, \beta_3 \text{ and } \beta_4 = \text{Regression coefficients}$$

The study employed use of STATA in the entire data analysis process where exploration for the dependent variable (ROE) was conducted to find out whether there is significant difference between firms and within the firms by use of growth plots and overlain plots respectively. The basic assumption is that the firms should have the same intercept for Random effect model, but if it is not the case then fixed effect model is appropriate.

Hausman test was employed to choose between RE and FE models, the null hypothesis is that the difference in coefficients is not systematic therefore if $p\text{-value} > 0.05$, then we accept the null hypothesis and therefore adopt Random effect model (RE). The test indicated a P-value of 0.7540 which is > 0.05 and thus we used Random effect model.

B-P LM test to choose between RE and POLS model, it helps determine the existence of random effects in RE. The null hypothesis is that the variance across group is zero. The decision rule is to reject, H_0 if the P -value < 0.05 . The P-value was 0.0000 thus < 0.05 therefore we rejected null hypothesis indicating presence of random effect.

The interpretation of the panel regression output aided in determining the effect of the financial regulations on the financial performance of banks and thus supports the conclusion. rho indicated the extent to which the changes in dependent variable was as a result of intra - class variation across time and between the banks. Test for residuals was effected by use of QQ - plots and PP-plots to test for normality and distribution of error term along the estimated model. The output was presented by use of tables and graphs.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

The chapter outlines the descriptive statistics applied in data analysis and exploratory based on the variables studied. The data was gathered from the central bank website as well as from the specific banks financial statements. The data was analyzed using Stata 12 software. The finding of the study was presented in form of tables, graphs and model outputs in order to clearly aid in determining the effect of financial regulations on the financial performance (ROE) of commercial banks in Kenya.

4.2 Summary Statistics

4.2.1 Exploratory Data analysis

This involves analyzing the trend within firm and between firms by use of growth plots and overlain plots respectively as below:

Growth plots helps to determine whether there are time-related fixed effects within the firms by observing the trend of the dependent variable. Overlain plots checks if the intercept is the same for firms or whether it varies over firms through the intercept different intercepts indicate existence fixed effects while same intercept shows existence of random effects between firms.

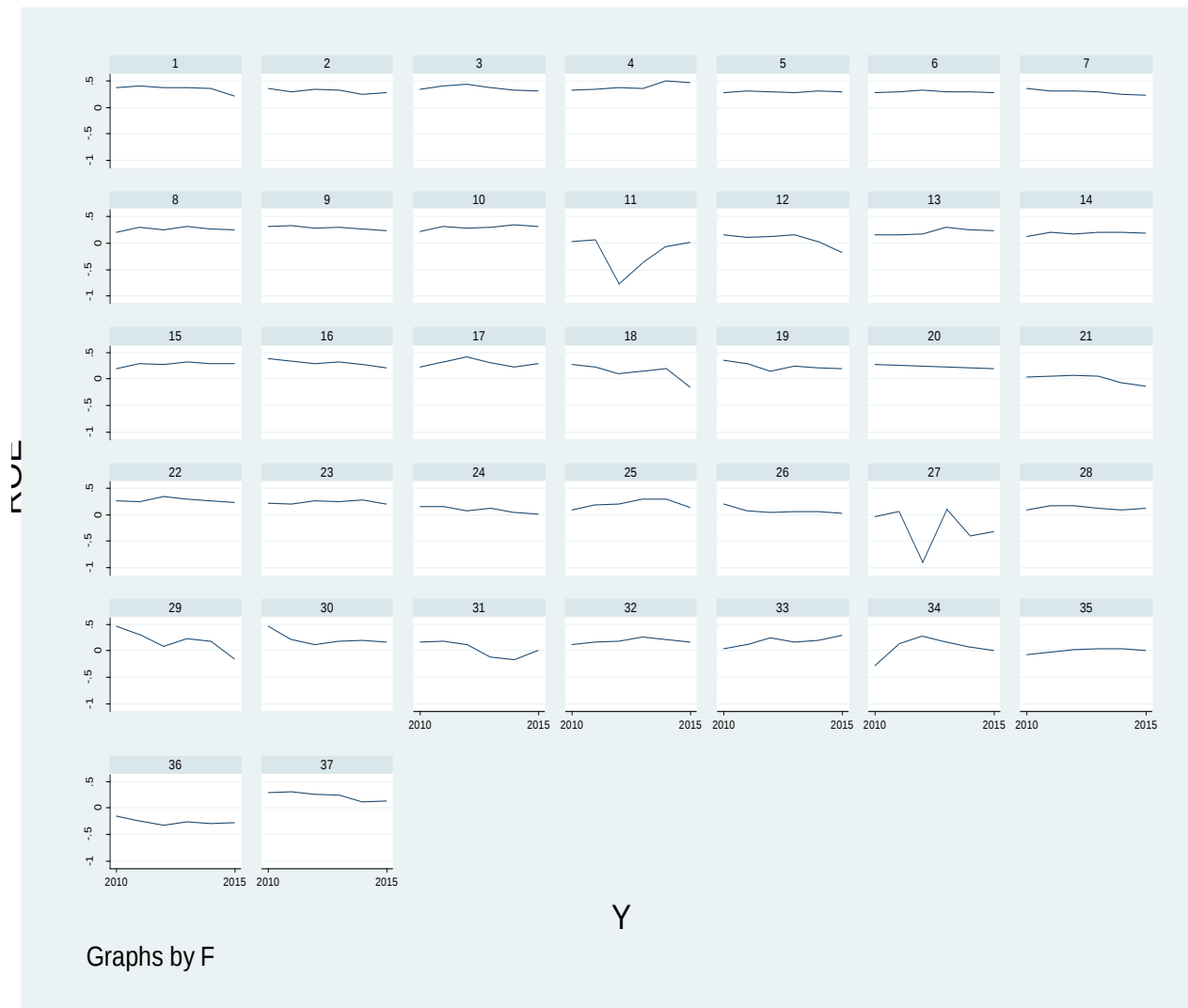


Figure 2: Growth Plot

Figure 2 above shows the trend of dependent variable ROE within the firms and across time for all the 37 banks being studied. The trends indicate that there is no time related fixed effects since the intercept parameters do not vary across the firms; this therefore favours the use of random effect model though with comparative diagnostics(Hausman test).

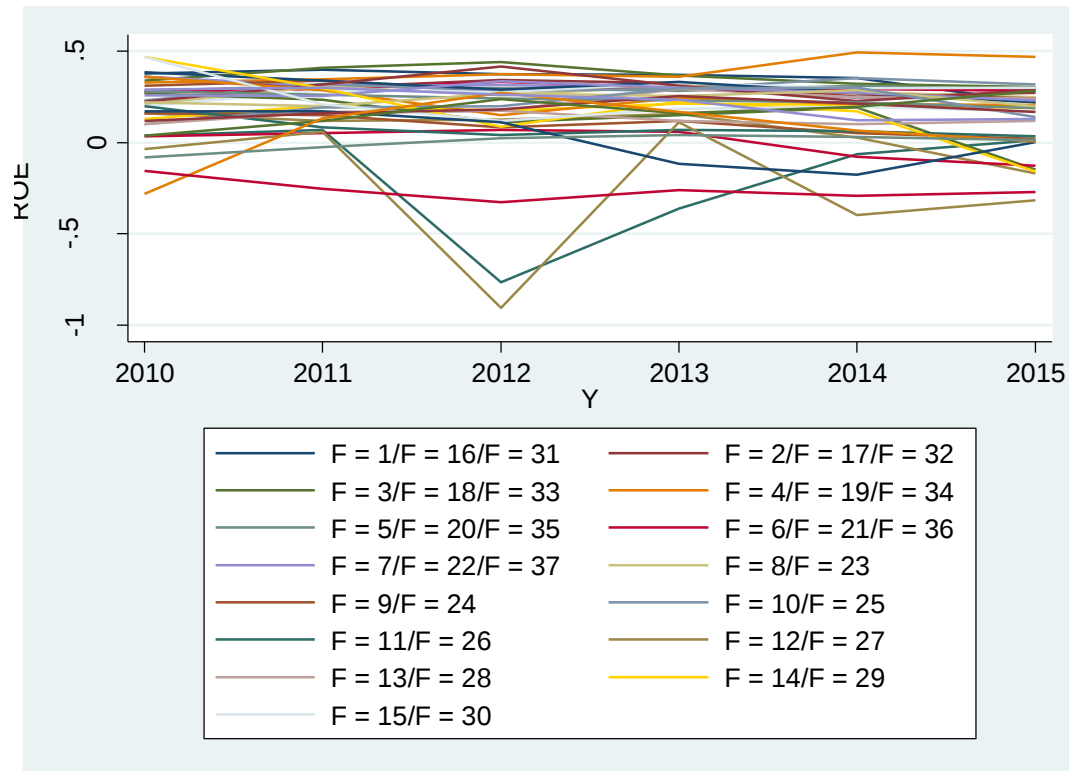


Figure 3: Overlain Plots

The figure above presents the effect of return on equity (ROE) between the various commercial banks, it shows that the effect of financial regulations on ROE is the same to all the commercial banks but it varies from time to time as the various banks tend to have same intercept, that means there exist random effects.

4.2.2 Descriptive Statistics

Table 2: Summary of Statistics

Variable	Mean	Std. Dev.	Min	Max	Observations
ROE Overall Between Within	.1771541	.1895246 .1587482 .1062485	-.908 -.2597167 - .4823626	.494 .3958833 .5366374	N = 222 n = 37 T-bar = 6
CAR Overall Between Within	.2516258	.2417912 .155429 .1866852	.0219492 .0910262 -.2918034	2.735643 .7367822 2.250487	N = 222 n = 37 T-bar = 6
AQR Overall Between Within	.0616437	.0739679 .052001 .0549827	.001 .0059382 -.0751433	.875346 .2729545 .7214167	N = 222 n = 37 T-bar = 6
MER Overall Between Within	.4322526	.2585246 .2015978 .1688903	.0535714 .1248239 -.2124355	2.394204 1.144524 1.681932	N = 222 n = 37 T-bar = 6
LR Overall Between Within	1.144751	.7118168 .3500424 .1443739	.0157833 .2394994 .2965007	8.830441 2.102195 1.748629	N = 222 n = 37 T-bar = 6

Source: Author 2018

The above findings summarize the descriptive statistics which consist of measures of central tendency (mean) as well as measures of variation (Standard deviation, ratios etc). It gives the overall effect, within the firms and between the firms, the number of observations being 222 while the firms studied were 37. The overall performance of the 37 commercial banks between 2010 and 2015 averaged to 17.71%. The ratio of capital to total risk weighted assets is 25.16%, according to (CBK, 2016), capital adequacy ratio of above 19.5% is a strong indicator of the

sectors stability.

Asset quality on average is 6.16%, a strong asset quality ratio according to CBK (2016) is between 0% and 5% and therefore signifies weakness in the regulations enhanced to ensure that non- performing loans are reduced to manageable levels, such regulations include Credit reference beureau 2013 which was brought about the concept of credit information sharing among the financial institutions. The findings indicate failure of the regulation in the first 3 years after it was implemented and thus call for re - evaluation of the policies around the CRB 2013 regulations. The regulation should be broadened to eliminate the information asymmetry between the lenders and borrowers more effectively.

Operational efficiency is at 43.22 % which is slightly below average, however it is not at an alarming level since the commercial banks have been able to manage the operational costs by almost 50% and thus enhance realization of more income.

For liquidity, it is clear that the banks on average have collectively kept a larger percentage of their assets into easily convertible portfolio which is at 14.47% above the total deposits, this may include but not limited to investing in treasury bills, short term loans etc. This might also depict the banks unwillingness to give long-term loans to their customers due to associated risks. The minimum liquidity level is currently at 20% in Kenya (CBK, 2016).

4.3 Suitability Tests

4.3.1 Multicollinearity Test

Table 3: Correlation between Variables

	ROE	CAR	AQR	MER	LR
ROE	1.0000				
CAR	-0.0726 0.2813	1.0000			
AQR	-0.2150* 0.0013	-0.0575 0.3938	1.0000		
MER	-0.2672* 0.0001	-0.0772 0.2523	0.032 0.6331	1.0000	
LR	0.1597* 0.0173	-0.0088 0.8967	-0.0733 0.2770	0.0506 0.4528	1.0000

Source: Author 2018

The findings above shows the level of relationship between ROE and the dependent variables, high level of correlation is discouraged as it depicts a problem of multicollinearity. The variables such as capital adequacy regulations, Asset quality regulation, Management efficiency regulations indicate a weak negative correlation on ROE apart from Liquidity regulations which has a weak positive correlation thereby eliminating the problem of multicollinearity.

4.4 Model Fitting

4.4.1 Fixed Effect Model

Table 4: Fixed Effect Model

Fixed-effects (within) regression		Number of obs	=	222
Group variable: F		Number of groups	=	37
R-sq: within = 0.0259		Obs per group: min	=	6
between = 0.0882		avg	=	6.0
overall = 0.0554		max	=	6
corr(u_i, Xb) = 0.1368		F(4,181)	=	1.21
		Prob > F	=	0.3102

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CAR	.0286783	.0423174	0.68	0.499	-.0548207	.1121772
AQR	.0606225	.1425665	0.43	0.671	-.2206835	.3419286
MER	-.0740047	.0464121	-1.59	0.113	-.1655831	.0175736
LR	.0692866	.0545216	1.27	0.205	-.0382932	.1768663
_cons	.1188738	.0700358	1.70	0.091	-.0193178	.2570653
sigma_u	.15463019					
sigma_e	.11587009					
rho	.64040757	(fraction of variance due to u_i)				

F test that all u_i=0:	F(36, 181) =	8.93	Prob > F = 0.0000
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From table 4 above, the fitness of the fixed effect model generated is tested using the F-test where the p-value should be less than the significance level of 0.05, however P value is 0.3102 and therefore >0.05 which is an indication of model unsuitability.

4.4.2 Random Effect Model

Table 5: Random Effect Model

Random-effects GLS regression	Number of obs	=	222
Group variable: F	Number of groups	=	37
R-sq: within = 0.0211	Obs per group: min	=	6
between = 0.2335	avg	=	6.0
overall = 0.1164	max	=	6
	Wald chi2(4)	=	9.06
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.0595

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CAR	.0051889	.0417018	0.12	0.901	-.0765452	.086923
AQR	-.0717305	.1393069	-0.51	0.607	-.344767	.2013061
MER	-.1093814	.0439255	-2.49	0.013	-.1954738	-.023289
LR	.0837382	.054627	1.53	0.125	-.0233288	.1908051
_cons	.1316912	.0720742	1.83	0.068	-.0095716	.2729539
sigma_u	.11884564					
sigma_e	.11587009					
rho	.51267522	(fraction of variance due to u_i)				

The fitness of the random effect model generated above is tested using the chi test where, P-value should be < 0.05 , however P- value is 0.0595 which is slightly above the significance level and therefore we use Hausman test to choose between fixed effect and random model effect. In this regard the Chi-test and F-test cannot be relied in selecting the suitable model to be used in determining the effects of financial regulations on the financial performance of commercial banks in Kenya.

4.4.3 Choosing between Fixed effect model and Random effect Model using Hausman test

Table 6: Hausman Test

	—— Coefficients ——		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
CAR	.0286783	.0051889	.0234894	.0071917
AQR	.0606225	-.0717305	.132353	.0303114
MER	-.0740047	-.1093814	.0353767	.0149877
LR	.0692866	.0837382	-.0144516	.

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

Test: Ho: difference in coefficients not systematic

$\chi^2(4) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 = 1.90
 Prob>chi2 = 0.7540
 (V_b-V_B is not positive definite)

Table 6 above presents output from Hausman test where the null hypothesis is that the difference in coefficients is not systematic therefore if p-value > 0.05, then we accept the null hypothesis and adopt Random effect model (RE). The test indicated a P-value of 0.7540 which is > 0.05 and thus we used Random effect model.

4.4.4 Choosing between Random effect model and Pooled OLS using B-P LM test

Table 7: B-P LM test

Breusch and Pagan Lagrangian multiplier test for random effects		
ROE[F,t] = Xb + u[F] + e[F,t]		
Estimated results:		
	Var	sd = sqrt(Var)
ROE	.0359196	.1895246
e	.0134259	.1158701
u	.0141243	.1188456
Test: Var(u) = 0		
	chibar2(01) =	131.39
	Prob > chibar2 =	0.0000

The test shown in table 7 represent Breusch and Pagan Langrarian multiplier (B-P LM) test used in choosing between RE and POLS model, it helps determine the existence of random effects in RE model,the null hypothesis is that the variance across group is zero. The decision rule is to reject, H_0 if the P -value < 0.05. The P-value was 0.0000 thus < 0.05 therefore we rejected the null hypothesis indicating presence of random effect. The study therefore adopts the use of Random effect model in the interpretation of the financial regulations on the financial performance of banks.

4.4.2.1 Prediction For Residuals

Prediction for residuals is a procedure carried out to determining whether the residuals are normally distributed, this was enhanced through the use of PP - plots, QQ - plots as we as a histogram for residuals as shown below:

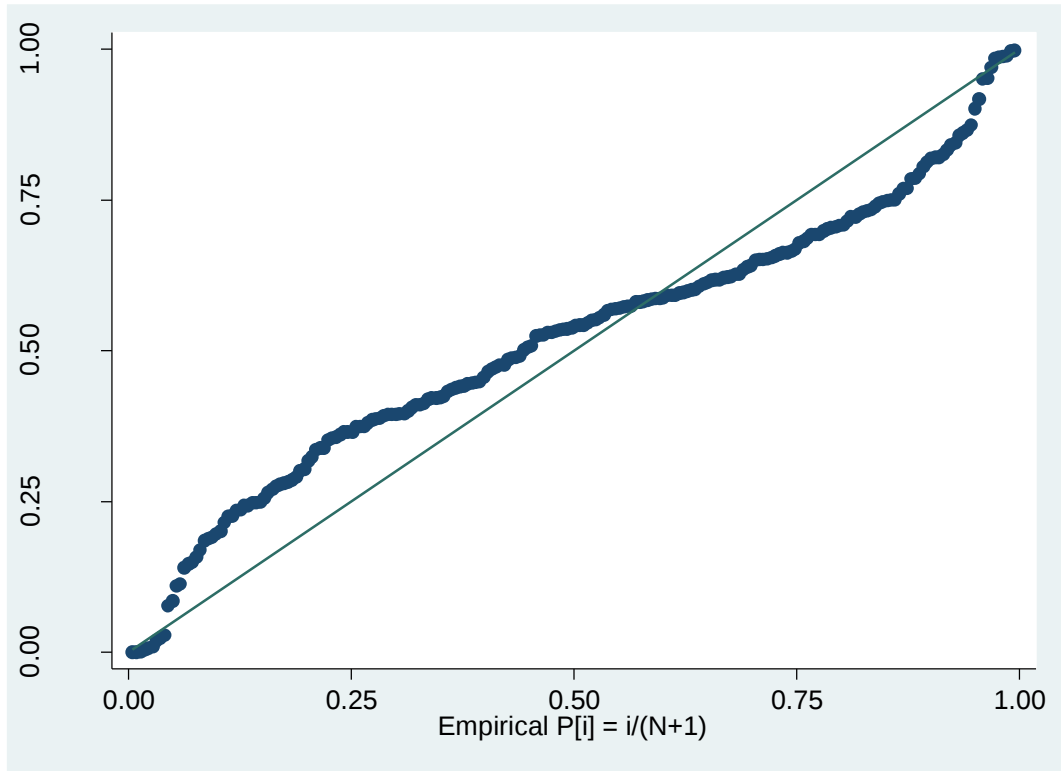


Figure 4: PP - Plots for Residuals

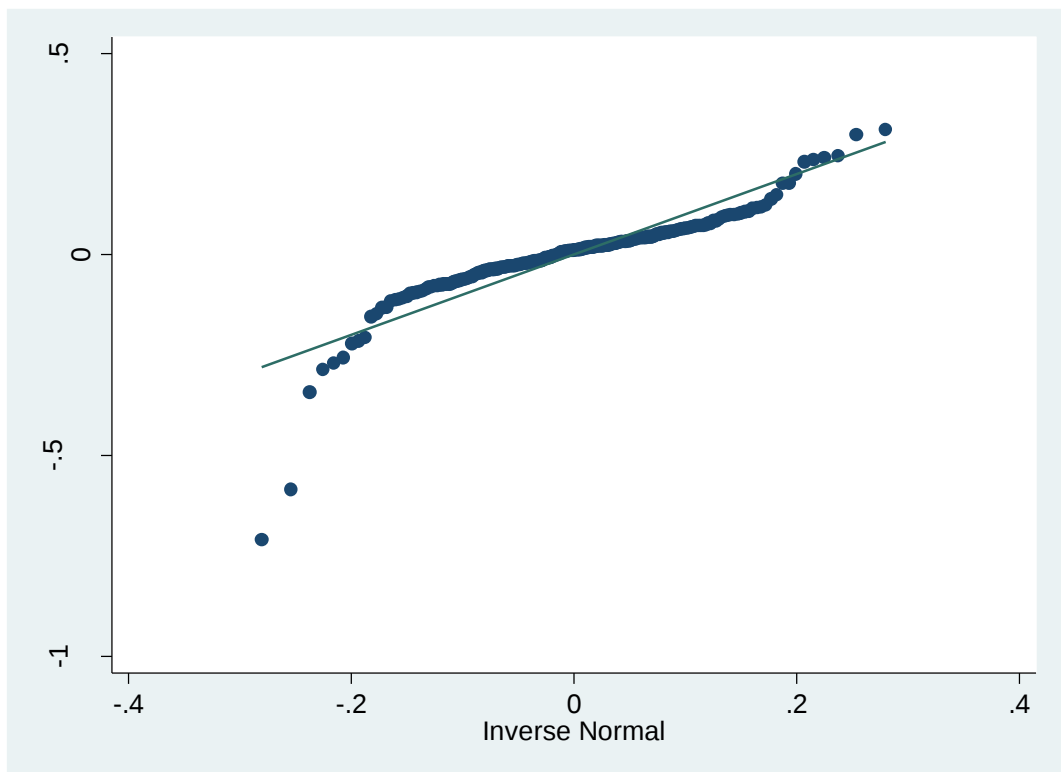


Figure 5: QQ- Plots for Residuals

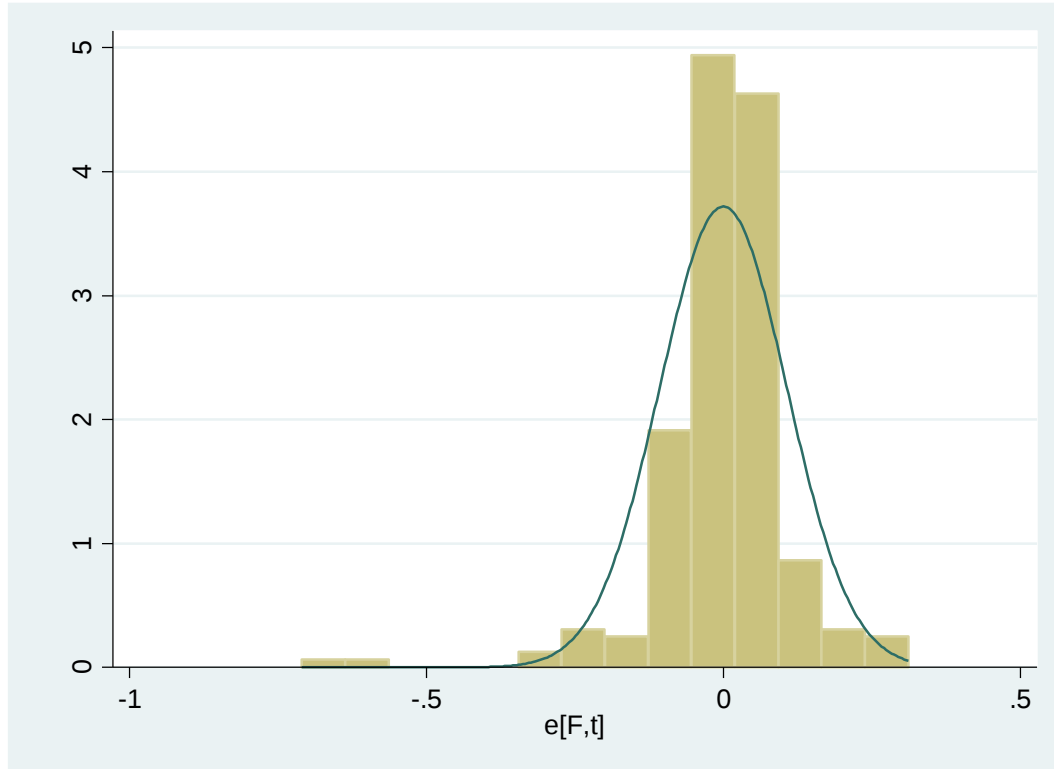


Figure 6: Histogram for Residual

Figure 5, 6 and 7 show that residuals are normally distributed along the estimated model.

4.5 Study Variables

4.5.1 Capital Adequacy Regulation

From the random effect model output above, there is a weak positive relationship between capital adequacy and financial performance of banks where ROE increases by 0.518% when capital adequacy changes across time and between firms by one unit. This indicates that the regulations to enhance capital adequacy has got relatively low influence on the general performance of the commercial banks in the Kenyan banking sector. The findings are inconsistent with a study by (Hoffman, 2011) which found a negative relationship between

capital adequacy and banks profitability. According to Tabert (2001), the aim of capital regulation in ensuring smoothness in the banking sector is ill advised as it increases the burden of regulation contrary to other sectors of the economy and thereby deteriorating the performance of the commercial banks. However, the findings are consistent with a study by (Pasiouras & Kosmidou, 2007) who found positive relationship between capital adequacy and the performance of banks.

4.5.2 Asset Quality Regulation

In terms of the asset regulations, ROE decreases by 7.173 % on average when asset quality is enhanced by 1 unit across time and between firms. This indicates that the regulators objective in regulations is far from meeting the interest of the owners (ROE). The study findings coincide with that of (Lucas & Kamau, 2010) which showed a negative relationship between financial performance and loan quality in the banking sector. According to Dang (2011), high asset quality is associated with low percentages which have a higher bearing on the profitability of commercial banks thus supports the study findings that asset quality is inversely proportional to the performance of commercial banks.

4.5.3 Management Efficiency Regulation

The results from table 5 above shows that the financial performance of the banks as measured by ROE decrease by 10.94% when operational efficiency is enhanced across time and between firms by 1 unit. The findings are supported by Berger and Humphrey (1995) who criticized the operational efficiency ratios by saying that they are far from reality as they neglect the profit side of the bank's operations and thus resulting to inverse relationship. However, Kwan and Eisenbeis

(1966), in their study found that better operational efficiency results to increased profitability. Athanasoglou (2005) puts the management at task regarding operational efficiency tactics where he argued that they should manage the bank's expenses and thus influence the profitability of the bank.

4.5.4 Liquidity Regulation

Liquidity impacts positively the return on equity to the shareholders where ROE increases by 8.37 % when the liquidity level changes across time and between firms by one unit. The central bank currently set the minimum liquidity requirements at 20% (CBK, 2006). A study conducted by Ravi and Sharma (2011), gives inconsistent results on the inverse relationship between liquidity and financial performance though a number of other studies have brought forth different findings indicating proportionate relationship between Liquidity and financial performance. Bhattacharya and Thakor (1993) shows greater significance to management of liquidity and absorption of risks associated with banks' operations as the major role of any commercial banks.

4.6 Chapter Summary

From the analysis, it is eminent that capital adequacy regulations and liquidity have a positive but relatively low effect on the financial performance of commercial banks in Kenya while asset quality regulations and management efficiency have a negative but relatively low effect on the financial performance of commercial banks in Kenya. Majority of previous studies on the variables being studied found consistent results to the study at hand but others had contrasting results which can be based on the period of the study and or the prevailing circumstances surrounding the regulatory environment in the period of the study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the discussion of the findings and concludes in order to give solid recommendations towards policy improvement and amendments. Limitations of the study are as well unveiled together with suggestions for further studies. This chapter aims at refining the results on the effect of financial regulations on the commercial banks in Kenya so as to increase the general understanding of the study to the various users to whom it is intended.

5.2 Summary of Findings

The study aimed at determining the effect of financial regulations on the financial performance of commercial banks in Kenya, the results from the analysis of 37 banks indicated that asset quality regulations and management efficiency regulations impacts negatively on the financial performance of banks in Kenya while capital adequacy regulations and minimum liquidity regulations result to increase in the financial performance of banks as discussed in this chapter:

5.2.1 Findings on Capital adequacy on Financial Performance

On average, the banking sector performance between 2010 and 2016 was 17.71%. The ratio of capital to total risk weighted assets was 25.16% which is way above the recommended level by the central bank. Capital adequacy was statistically insignificant where $p = 0.901$ thus $>$ significance level (0.05) therefore we accept the null hypothesis that the capital adequacy regulations has no association between changes in ROE. Capital adequacy affects financial performance of banks positively where ROE increases by 0.518% when capital adequacy

changes across time and between firms by one unit

5.2.2 Findings on Asset Quality on Financial Performance

Asset quality on average was 6.164% exceeding the central bank's asset quality parameter of between 0% -5%. Asset quality regulations as well was statistically insignificant with a P value = 0.607 which is higher than significance level (0.05). ROE decreases by 7.173% on average when asset quality is enhanced by 1 unit across time and between firms.

5.2.3 Findings on Management Efficiency on Financial Performance

Operational efficiency is at 44.22 % which is slightly below average though still favorable. Management efficiency regulations are statistically significant where P value = 0.0113 which is lower than 0.05 and therefore we reject the null hypothesis. ROE decrease by 10.93% when operational efficiency is enhanced across time and between firms by 1 unit.

5.2.4 Findings on Liquidity on Financial Performance

The level of liquidity is at 14.47% above the total deposits. Liquidity regulations are also statistically insignificant with $p = 0.125$ thus we accept the null hypothesis. ROE declines by 8.337 % when the liquidity level changes across time and between firms by one unit.

5.3 Conclusion

5.3.1 Effect of Financial Regulations on Financial Performance of Banks

Financial regulations such as liquidity and asset quality have a negative effect on the performance of the commercial banking sector in Kenya as measured by ROE, this finding is consistent with previous studies: David Parker and Colin Kirkpatrick (2012) who conducted a

study on the impact of regulatory policy on the economy and profitability, they found a negative relationship between regulatory policy and profitability.

Capital adequacy and management efficiency indicate a positive relationship on ROE. Regulations reduce competitive pressures as profitability trends unveiled thus offering a common platform for the institutions in the sector to operate. However, despite the negative effect of financial regulations on the financial performance of the Kenyan commercial banking sector it is evident that the regulations achieved the objective that they were formulated to solve using the CAMEL rating which is adopted by the Central bank of Kenya in assessing the soundness in the sector. According to Treasury Board Canada Secretariat (2009), a regulation works if it solves or reduces the problem that led to its formation in the first instance which requires evaluation for proof. Financial regulations aimed at ensuring sustainability through enhancing soundness in the commercial banking sector in Kenya. However, according to the results of this study, there lack a direct link between sustainability and financial performance of banks as the regulator is more informed by the public interest theory rather than the interest of individuals who have invested in the commercial sector.

5.3.1 Capital Adequacy Regulation

Capital adequacy was determined by dividing equity capital with total assets, it expressed an positive relationship on the financial performance in the Kenyan banking sector. The findings are consistent with a study by (Pasiouras & Kosmidou, 2007) who found positive relationship between capital adequacy and the performance of banks. However, they are inconsistent with a study by (Jabangwe & Kadenge, 2016) which found that increasing regulatory capital requirement may not ensure financial health in the banking sector. Similar study by Hoffman

(2011) also found that capital adequacy has a negative effect on performance.

5.3.2 Asset Quality Regulation

Asset quality has a negative effect on the financial performance of banks, this is due to the credit risk associated with the loans which lead to increase in the loan loss provisions and thus lowering the performance of the bank. The results are consistent with previous studies which suggest that existence of nonperforming loans reduces the profitability of an institution and its sustainability or survival; this is due to the high cost of loan recovery as well as increased provisions for bad debts by the commercial banks (Svoronos, 2002, Sichei, 2000 & Omuondo, 2002).

5.3.3 Management Efficiency Regulation

Management efficiency has a positive effect on the performance of banks which suggests that the management have a responsibility to employ better ways to reduce the operating cost for a fixed amount of income.

In this regard, management efficiency is measured by the ratio of operating expenses and total income, the findings are consistent with Athanasoglou (2006) study that showed the extent to which South Eastern Europe (SEE) banks lacked management competency to an extent of not being able to shift the cost to the customers and thus had to be borne by the banks. Operating expenses include the interest expense thus reducing the profit which in return leads to reduction of the banks performance that is return on equity (ROE).

5.3.4 Liquidity Regulation

Banks liquidity is the ability of the bank to meet current needs as they are demanded by the

customers. Liquidity has a negative effect on the banks performance based on the research findings. The findings are supported by Ravi and Sharma (2011), who in their study found similar results while a study by Dang (2012), showed that adequate liquidity is positively related to the profitability of a financial institution. The bank should strike a balance on the safety benefits of holding liquid cash as well as the economic costs of holding the same. There should be an effective application of cash management techniques though the discretion is watered down by the existence of minimum liquidity requirements.

5.4 Recommendations and Policy Implications

It's clear from the study that asset quality regulations impact negatively on Return on Equity (ROE) in the Kenyan commercial sector, the banks through the Kenya Bankers Association (KBA) in collaboration with the regulator should embark on a continuous review of the credit regulations such as Credit Reference Beaural 2013 to ensure that credit risk is minimized and thus ensure increase in the banks performance as much as it meets the public interests such as correcting market failure and information asymmetry. This will facilitate discussions aimed at lessening the burden of the policy while on the other hand reducing the credit risk borne by the lenders.

The study findings indicate that management efficiency is statistically significant though with negative effect to the company's performance (ROE), the banks management should employ sound techniques to ensure that the operations of the banks are well executed at the lowest possible cost, the banks should aim at optimizing all their operations where recruiting competent management is one of the prerequisite. In this regard, qualification of top officials in the banking sector should be reviewed upward to ensure competence and prudence in management.

Capital adequacy and liquidity regulations helps the bank in reducing the risk of bank run, in the study, both express a positive effect on the firms performance(ROE), the central bank should invite scholars to undertake thorough research on the impact of the underlying capital regulations and minimum liquidity regulations so that they can recommend the optimal levels on top of the minimum levels and thus enable the financial institutions to reap the most of their capital and liquid assets.

5.5 Limitations of the Study

The Central Bank of Kenya (CBK) database do not have summarized data of the commercial banks regarding the variables tested and therefore much time is needed to gets the specific banks' financial statements and analyze the raw data to obtain the necessary data to be used in the analysis.

Secondly, only few studies have been conducted in the area of regulatory evaluation especially in courtesy of World Bank and Organizational for Economic Cooperation and Development (OECD) and therefore both qualitative and quantitative information is not adequately available.

5.6 Suggestion for Further Studies

Having explored the effect of financial regulations on the financial performance of commercial banks in Kenya, scholars, future researchers and academicians should aim at situating their studies within the scope of regulatory framework in Kenya. Below are some of the research areas viable:

To determine the relationship between the policy setters' academic qualification toward the policy area on the performance of the policy implemented. Secondly, further research should be conducted on the effect of conflict of interest by the policy makers on the soundness of the

regulation formulated.

Last but not least, more effort should be vested on the effect of global economic policies such as the ones formulated by COMESA, IMF and World bank on the growth of different countries so as to instill a culture of policy evaluation before and after adoption at an individual level, corporate level as well as at a national level when dealing with other nations.

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APPENDIX I: List of Commercial Banks in Kenya

	Details	Category(Peer group)
1.	African Banking Corporation Ltd	Small
2.	Bank of Africa Kenya Ltd	Medium
3.	Bank of Baroda (K) Ltd	Medium
4.	Bank of India	Medium
5.	Barclays Bank of Kenya Ltd.	Large
6.	CFC Stanbic Bank Ltd.	Large
7.	Citibank N.A Kenya	Medium
8.	Commercial Bank of Africa Ltd.	Medium
9.	Consolidated Bank of Kenya Ltd.	Small
10.	Co-operative Bank of Kenya Ltd.	Large
11.	Credit Bank Ltd.	Small
12.	Development Bank of Kenya Ltd.	Small
13.	Diamond Trust Bank Kenya Ltd.	Medium
14.	Dubai Bank Kenya Ltd.	Small
15.	Ecobank Kenya Ltd	Medium
16.	Equatorial Commercial Bank Ltd.	Small
17.	Equity Bank Ltd.	Large
18.	Family Bank Limited	Medium
19.	Fidelity Commercial Bank Ltd	Small
20.	Fina Bank Ltd	Small
21.	First community Bank Limited	Small
22.	Giro Commercial Bank Ltd.	Small
23.	Guardian Bank Ltd	Medium
24.	Gulf African Bank Limited	Small
25.	Habib Bank A.G Zurich	Small
26.	Habib Bank Ltd.	Small
27.	I & M Bank Ltd	Medium
28.	Jamii Bora Bank Limited.	Small

29.	Kenya Commercial Bank Ltd	Large
30.	K-Rep Bank Ltd	Small
31.	Middle East Bank (K) Ltd	Small
32.	National Bank of Kenya Ltd	Medium
33.	NIC Bank Ltd	Medium
34.	Oriental Commercial Bank Ltd	Small
35.	Paramount Universal Bank Ltd	Small
36.	Prime Bank Ltd	Medium
37.	Standard Chartered Bank Kenya Ltd	Large
38.	Trans-National Bank Ltd	Small
39.	UBA Kenya Bank Limited	Small
40.	Victoria Commercial Bank Ltd	Small
	Banks Under Statutory Management	
41	Chase Bank Ltd	Medium
42	Imperial Bank Ltd	Medium
43	Charterhouse Bank Ltd	Small

Source: CBK 2017

APPENDIX II: BUDGET

Item	Cost
Stationary	2,000
Internet cost	2,500
Typing and printing and photocopies	3,000
Contingencies	1,000
Binding (Hard cover and 4 spiral copies)	2,500
Total	11,000

Source: Author 2017

APPENDIX III: TIME PLAN

	2017							2018		
Activity Description	June	July	Aug	Sept	Oct.	Nov.	Dec	Jan	Feb	March
Research topic proposal										
Concept Development										
Introduction and Problem statement										
Literature Review										
Methodology										
Proposal Presentation										
Data collection										
Testing										
Data coding & Editing										
Data analysis & Discussion										
Final Presentation										

Source: Author 2017.