THE RELATIONSHIP BETWEEN CAPITAL REQUIREMENT AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

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DEDICATION

I dedicate this research to my parents Mr. Naftaly Mwai and Mrs. Susan Mwai who have always encouraged me to keep strong in my pursuit for knowledge. May the Almighty God bless you and keep you as you age gracefully.

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OPERATIONAL DEFINITION OF TERMS

Capital   A cushion that banks hold against losses

Capital Requirement   The amount of capital a bank has to hold as required by the financial regulator

Capital Structure   Sources of funds including equity, debt or hybrid securities

Financial Performance   A general measure of a Banks overall financial health over a given period of time indicated by financial ratios. Shown by Return on Equity, Return on Assets and Net Interest Margin financial ratios.

Net Interest Margin   A measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders relative to the amount of their interest-earning assets.

Return on Equity   Measures the rate of return on shareholders' equity. It measures a firm's efficiency at generating profits from every unit of shareholders' equity

Return on Asset   shows percentage how profitable a company's assets are in generating revenue.

Risk-weighted Assets

Computed by adjusting each asset class for risk in order to determine a bank's real world exposure to potential losses. Regulators then use the risk weighted total to calculate how much loss-absorbing capital a bank needs to sustain it through difficult markets.

Tier 1 Capital

Core measure of banks financial strength from a regulatory point of view. It's composed of core capital which consists primarily of common stock and retained earnings

Tier 2 Capital

Represents supplementary capital such as undisclosed reserves, revaluation reserves, hybrid capital instruments and subordinated debt

ACRONYMS AND ABBREVIATIONS

ACM	Asset to Capital Multiple
ANOVA	Analysis of Variance
BCBS	Basel Committee on Banking Supervision
BHC	Bank Holding Companies
BIS	Bank for International Settlements
CAR	Capital Adequacy Ratio
CBK	Central Bank of Kenya
CFC	Credit Finance Corporation
EABS	East African Building Society
ECB	Equatorial Commercial Bank
FDIC	Federal Deposit Insurance Corporation
GDP	Gross Domestic Product
ROA	Return on Assets
ROE	Return on Equity
KES	Kenya Shillings
LR	Leverage Ratio
NIM	Net Interest Margin
RWA	Risk Weighted Assets
SCBC	Southern Credit Banking Corporation
VAR	Value at Risk

ABSTRACT

Financial regulation imposes requirements on banks to hold certain amounts of capital. When the financial crisis began in 2007, the capital banks held fell significantly. Regulators could have taken the view that capital is there as a buffer against a rainy day, and the rainy day had come, so the buffer should be used up indeed. Regulators tended to maintain their rules, so that if banks capital had fallen below the regulatory thresholds they were required to raise additional capital. Spurred by stronger regulatory requirement, banks steadily increased their capital ratios since the financial crisis as required by the Central Bank of Kenya. This study sought to evaluate the relationship that exists between capital requirement set by the Central Bank of Kenya and the financial performance for the Kenyan banking sector. The study was guided by the, Economic theory of regulation, the capital buffer theory, the liquidity theory and the agency theory. The specific objective of the study was to evaluate the relationship between capital requirement and financial performance of commercial banks in Kenya. The research design adopted by the study was descriptive to examine the relationship between the variables. The target population was a total of forty-three (43) commercial banks operating in Kenya. All the banks were considered in the study since the number of banks in Kenya is small and manageable for a census study. The study used secondary data which was collected from bank supervision and banking sector reports which are released on an annual and quarterly basis by the Central Bank of Kenya and the Commercial Banks. Data was analyzed using descriptive statistics and regression analysis. The findings of the study was that there was a significant positive relationship between minimum core capital and financial performance, a significant positive relationship between total capital and financial performance, there was a significant negative relationship between leverage and financial performance as measured by ROA and ROE but the relationship was insignificant as measured by NIM. With the moderating variable included in the model, the results of all the models gave insignificant results indicating that ownership did not have a significant effect on performance of commercial banks in Kenya. The study recommended that banks should comply with capital requirements since apart from increasing on its financial performance, increased capital provides a measure of assurance to the public that an institution will continue to provide financial services even when losses have been incurred, thereby helping to maintain confidence in the banking system and minimize liquidity concerns. The study also recommended strict regulations to cap leverage levels among commercial banks to avoid any possible cases of insolvency. This study was limited to capital adequacy ratios only and did not include many other variables that influence performance of banks. Therefore, other researches can include such variables as liquidity ratios, management efficiency ratios, asset quality measures and variables that encompass sensitivity to market conditions.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Financial performance is the primary goal of all commercial banks without good financial performance the business will not survive in the long run. Research on financial performance, therefore, is critical because it will enable us to identify the particular mix of regulations and supervisory standards promoting well-functioning of commercial banks and thus provide better guidance to policy makers on appropriate reforms. One key component to any financial market is the banking system because banks facilitate financial development by mobilizing and allocating funds to investment projects with the greatest long-term economic benefits (Booth, *et al.* 2001).

Moreover, it is widely acknowledged that a well-structured banking system, defined by its supervisory practices, risk taking, and governance, promotes greater financial performance and economic stability (Demirguc-Kunt and Levine, 2003).Capital requirement is one of the bank regulations, which set a framework on how banks and depository institutions must handle their capital. Ngo (2006) suggested that the regulator ensures that banks have enough of their own capital at stake. Blum (2005) supported this proposition arguing that these regulations help in reducing negative externalities e.g. disruptions to the payments system and a general loss of confidence in the banking system in addition to boosting the slow economic growth hence the Gross Domestic Product (GDP).

These propositions leads to the question, what then do prudential capital requirements accomplish in the banking sector? This study will evaluate if capital requirements have something to do with a bank's performance. Capital equity and long-term debt represents a source of funds to the bank along with deposits and borrowings. Pringle (2001) observed that a bank with low capital levels will find itself subjected to high levels of short-term borrowing at potentially high excess costs during periods of tight money. Flamini *et al*. (2009) suggested that bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth do boost credit expansion

Higher capital is often supposed to be costly for banks, implying that higher capital reduces profitability, but according to the tradeoff theory it may also reduce a bank's risk and hence the premium demanded to compensate investors for the costs of bankruptcy. According to conventional corporate finance theories a bank in equilibrium will desire to hold a privately optimal level of capital that just trades off costs and benefits, implying a zero relationship at the margin. However, capital requirement imposed by regulators, force banks to hold capital in excess of their private optimal and hence force banks above their internal optimal capital ratio (Miller, 1995; Buser *et al*, 1981).

Furthermore, since bank optimal capital ratios are likely to vary over the cycle, typically rising when there are higher expected costs of distress, the relationship between capital and profitability is likely to be highly cyclical, becoming more positive during periods of

distress as banks that increase their capital ratios provide reassurance to investors and improve their profitability.

The intent of this study is to empirically evaluate the association between a commercial banking capital regulation and its financial performance. Al-Saffar and Al-Khatib (2013) provide four major reasons why banks should be regulated. The first relates to monetary policy that involves the ability of banks to create money. Secondly, as channels of credit or investments, allowing banks to get involved in the credit allocation. Thirdly, banks are regulated to ensure healthy competition and innovation by preventing the formation of cartels. The fourth is for prudential regulation reasons and to mitigate the problem of asymmetric information.

1.1.1 Ownership Structure of Commercial Banks in Kenya

Ownership structure covers both the ownership mix, and ownership concentration. Ownership mix refers to the composition of shareholders of the firm. Broad spectrum of ownership includes foreigners, institutions, individuals, state and the general public. Ownership concentration on the other hand refers to the degree in which ownership of the firm is concentrated among the various categories of owners. Olayinka and Ayonrinde (2001) define ownership concentration as the proportion of shares held by the top 10 shareholders.

Firms are different both in terms of ownership mix and also in terms of ownership concentration. The resultant distribution of ownership among different groups can impact on financial performance and on the ability of the bank to raise capital, which subsequently has implications for corporate performance. Out of the 43 banking institutions, 24 banks are locally owned and 14 are foreign owned. The locally owned financial institutions comprise 5 banks with shareholding by the Government and State Corporations.

1.1.2 Capital Requirements of Commercial Banks in Kenya

The Central Bank of Kenya (CBK) makes and enforces rules which govern the minimum capital requirement for banks in Kenya and are based on the international standards developed by the Basel Committee. In the year 2008, CBK reviewed the minimum capital requirements for commercial banks and mortgage finance institutions with the aim of maintain a more stable and efficient banking and financial system. According to the Banking Act (2008), every banking institution was expected to maintain a minimum core capital of at least 1 billion Ksh by 2012.

A core capital of not less than 8% of total risk adjusted assets plus risk adjusted off balance sheet items, core capital of not less than 8% of its total deposit liabilities; and a total capital of not less than 12% of its total risk adjusted assets plus risk adjusted off balance sheet items (CBK, 2013).In addition to the above minimum capital adequacy ratios of 8% and 12%, commercial banks were required to hold a capital conservation buffer of 2.5% over and above these minimum ratios to enable the institutions withstand

future periods of stress (CBK, 2013). This brings the minimum core capital to risk weighted assets and total capital to risk weighted assets requirement to 10.5% and 14.5% respectively.

Table 1.1; Kenyan Banks Capital Requirements

Capital Requirement	Core capital (Tier 1 to RWA)	Total Capital (Tier 2 to RWA)
Minimum ratio	8.0%	12.0%
Conservation Buffer	2.5%	2.5%
minimum plus Conservation Buffer	10.5%	14.5%

Source; CBK, 2015

The conservation buffer was phased in between January 2013 and January 2015. In terms of implementation, the Kenya's banking sector has over the years complied with the enactment, with implementation being done in phases. The amendments by CBK through the Finance Act 2008 raising the minimum capital was intended to strengthen institutional structures in the banking sector (CBK, 2010). The new capital requirement was to be met progressively as follows, KES 350 million by 31st December 2009; KES 500 million by 31st December 2010; KES 700 million by 31st December 2011; and KES 1 billion by December 2012. In absolute terms, banks have progressively built their core capital towards the fulfillment of these requirements.

The argument from the Central Bank of Kenya perspective is that increased capital is important for financial sector stability and that banks with a high capital base are likely to withstand financial turbulences and therefore increase banking sector stability (Atrill, 2009). Banks were also expected to benefit from economies of scale and lower their transaction costs, reduce bank lending rates and consequently increase bank competition and promote financial inclusion (Arbabiyan and Safari, 2009). It was further expected that the small banks that found difficulties raising their capital to the required levels would be encouraged to merge.

In line with the international standards, the Central Bank of Kenya (CBK) increased the minimum capital requirement aimed at strengthening institutional structures and improving resilience of the banking industry. According to the Finance Act 2008, new and existing banks had to comply with the minimum capital requirement in order to operate as a commercial bank in Kenya (CBK, 2010). However, other market players have opposed this move, with the argument that the banking sector is already over concentrated and increasing the capital requirement further will only create more concentration and cartels (Abor, 2010). Even though the overall picture indicates that Kenya's banking sector is well capitalized, especially the large and medium banks, the small banks which account for almost half the number of existing banks risked being undercapitalized.

Unless banks meet the minimum capital, these banks will not be able to extend loans. Naturally, banks may try to pre-empt such a situation by holding more capital and

avoiding being capital constrained. Nevertheless, capital is costly, and as a result this may affect the level of bank lending and with it, market activity. Banks capital overregulation carries the danger that it will retard the development of national financial systems, hinder the best use of available domestic savings, prevent countries from accessing international capital, and ultimately lead to slower growth.

The banking environment in Kenya has, for the past decade, undergone many regulatory and financial reforms. These reforms have brought about many structural changes in the sector and have also encouraged foreign banks to enter and expand their operations in the country (Kamau, 2009). Kenya's financial sector is largely bank-based as the capital market is still considered narrow and shallow (Ngugi, *et al*. 2006). Banks dominate the financial sector in Kenya and as such the process of financial intermediation in the country depends heavily on commercial banks (Kamau, 2009). In fact, Oloo (2009) describes the banking sector in Kenya as the bond that holds the country's economy together. Sectors such as the agricultural and manufacturing virtually depend on the banking sector for their very survival and growth.

Banks are the main intermediaries in virtually all developing economies. Thus, capital adequacy standards, by affecting the performance and behavior of these banks, will have an important influence on economic activity. In a paper by Chiuri, (2002), empirical evidence was presented that the capital adequacy ratios may have contributed to a severe reduction in bank credit and an aggregate liquidity shortage in developing countries. It is likely that such effects are asymmetric across banks and countries (Deesomask, 2004).

Banks that are capital-constrained are more likely to constrain credit than those that are not capital-constrained.

It is also possible that greater reliance on bank capital will complicate the conduct of monetary policy (Saeedi and Mahmoodi, 2011). In particular, the monetary authorities' effort to expand liquidity in the market may be constrained by the level of bank capital. For example, suppose the monetary authorities wanted to increase money supply either directly through reserve requirement or indirectly through open market operations (Al-Saffar and Al-Khatib, 2013). That effort may fail if the banks are capital constrained.

1.1.3 Financial Performance of Commercial Banks
Financial performance is the process of measuring the results of a firm's policies and operations in monetary terms (Erasmus, 2008). It identifies the financial strengths and weaknesses of a firm by establishing relationships between the items of the financial position and income statement. To measure the performance of commercial banks, there are variety of ratios used such as Return on Asset, Return on Equity and Net Interest Margin (Al-Saffar and Al-Khatib, 2013; Alexandru, and Romanescu, 2008).

Return on Equity (ROE) is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet (Ghosh, Nag, and Sirmans, 2000). ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better

the company is in terms of profit generation. It is further explained by Khrawish (2011) that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. ROE represents the rate of return earned on the funds invested in the bank by its stockholders. ROE reflects how effectively a bank management is using shareholders' funds. Therefore, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital (Rappaport, 1986).

Return on Asset (ROA) is also another major ratio that indicates the profitability of a bank. It is a ratio of Income to its total asset (Khrawish, 2011). It measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). Wabwile *et al*. (2014) stated that a higher ROA shows that the company is more efficient in using its resources.

Net Interest Margin (NIM) is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders. For example, deposits relative to the amount of their (interest-earning) assets. It is usually expressed as a percentage of what the financial institution earns on loans in a specific time period and other assets minus the interest paid on borrowed funds divided by the average amount of the assets on which it earned income in that time period (the average earning assets).

The NIM variable is defined as the net interest income divided by total earnings assets (Cale, 2010). Net interest margin measures the gap between the interest income the bank receives on loans and securities and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. Thus, it is one of the key measures of bank profitability. However, a higher net interest margin could reflect perilous lending practices associated with substantial loan loss provisions (Khrawish, 2011).

Tier 1 capital is the core measure of a bank's financial strength from a regulator's point of view. It is composed of core capital, which consists primarily of common stock and disclosed reserves or retained earnings but may also include non-redeemable non-cumulative preferred stock. The Tier 1 capital ratio is the ratio of a bank's core equity capital to its total risk-weighted assets (RWA). Risk-weighted assets are the total of all assets held by the bank weighted by credit risk according to a formula determined by the Regulator usually the country's central bank. Most central banks follow the Basel Committee on Banking Supervision (BCBS) guidelines in setting formulae for asset risk weights.

Assets like cash and currency usually have zero risk weight, while certain loans have a risk weight at 100% of their face value. Tier one capital is the best form of bank capital the money that the bank has in its coffers to support all the risks it takes lending, trading and so on. Tier one is essentially top-notch capital, with core tier one a subset comprising

the best of the best. The Basel Committee on Banking Supervision, whose Basel III rules form the basis for global bank regulation, is focused on the core tier one ratio. (Boyd, 2008)

Tier 2 capital is supplementary bank capital. A bank's reserve requirement includes its Tier 2 capital in its calculation, but it is considered less reliable than its Tier 1 capital. Components of Tier 2 Capital can be split into two levels: upper and lower. Upper Tier 2 maintains characteristics of being perpetual, senior to preferred capital and equity, having deferrable and cumulative coupons and its interest and principal can be written down. Lower Tier 2 is relatively cheap for banks to issue, has coupons not deferrable without triggering default and has subordinated debt with a maturity of a minimum of 10 years.

Undisclosed reserves are hidden reserves a bank may have created. These reserves generally get created when a bank charges an expense to the profit and loss which is not going to materialize. The liability in respect of such an expense therefore does not represent a true liability owed to outsiders, but is really shareholders' money, and is therefore economically not different from disclosed reserves except that it is not visible as such in the published accounts. (Tony, 2008)

1.1.4 Leverage Ratio
In July 2010, the Basel Committee agreed to introduce a Tier 1 leverage ratio of 3 percent on a trial basis, and later on, in September 2010, it formulated new, strengthened risk-adjusted capital requirement. A simple leverage ratio is an appealing complement to capital requirement to prevent excessive credit growth and mitigate fluctuations. The

Federal Deposit Insurance Corporation (FDIC) maintains an additional risk-independent capital requirement that is proportional to the size of banks' assets, a so-called leverage ratio restriction.

The main reason is the rising concern about the ability of supervisors to validate the banks' risk assessments, and hence the fundamental problem of whether Basel II can be implemented effectively. Canada, which has a single regulatory regime for commercial and investment banks, applies a maximum gross leverage ratio (Asset to Capital Multiple, ACM) of 20:1 and Switzerland has introduced one to encourage rapid downsizing of the large trading books of its major universal banks. Several recent reports (BCBS, 2009a; FSA, 2009; Andritzky et al., 2009) have also advocated the systematic adoption of a leverage ratio.

Conceptually, there are solid arguments for imposing a leverage ratio as a complement to capital requirement despite the common criticism that it is a blunt instrument, and usually attracts strong resistance from banks. In general, regulators can audit banks ex post and determine the success probability of the projects that they finance. But because the supervisor has only limited information about the banks' risk ex ante i.e., before any uncertainty about banks' investments has been revealed by their performance, he has to rely on banks' risk reports. But because banks know that reporting a high level of risk translates into a higher level of required capital, they have an incentive to understate the true degree of risk. In order to induce truthful revelation of banks' risks, it is necessary for the regulator to sanction dishonest banks whenever such banks are detected ex post, that is, after the return on banks' investments has been realized.

If the supervisor's ability to detect or to sanction dishonest banks is limited, however, risky banks still have an incentive to understate their risk. In that case, an additional helps to align risky banks' incentives and induce truthful revelation of their risk by reducing the risky banks' gains through understating their risk. There are two reasons for that (Blum, 2008): a leverage ratio puts a ceiling on the potential loss of limited liability. As banks have more of their own money invested, they bear a larger part of the downside risks themselves and supervisors have more options when it comes to imposing sanctions on dishonest banks.

Indeed, given limited liability, the size of the fine that can be imposed on banks is restricted by the level of their capital. Hence, setting a capital floor ensures a minimum level of potential fines for banks. Both effects reduce the expected profits of banks that understate their risk. If a sufficiently high leverage ratio is imposed, it is then in the risky banks' own interest to report their risk truthfully. The better the supervisor's ability to detect and to punish untruthful banks, the lower is the necessary maximum leverage ratio. If the supervisor's ability is very high, a leverage ratio may even become superfluous.

At the other extreme, if the supervisor has no ability to detect or to punish banks, the second-best capital regulation reduces to a simple leverage ratio without any additional risk-sensitive requirement. Because the actual situation in many developing countries is somewhere in between, the thrust of this discussion is that it is optimal to supplement risk-sensitive capital requirement with a leverage ratio (Andritzky *et al*., 2009).

1.2 Statement of the Problem

Despite all of the headlines about banking profitability, commercial banks in Kenya are still are not making enough return on investment, or the return on equity, that shareholders require. According to World Bank (2013), Commercial banks performance in Kenya over the last decade has not been impressive. Several reforms have been implemented in the financial sector since 1990s aiming at increasing performance, stability, productivity, financial access and efficiency. However, bank profitability on average has been erratic. During the period under review, increases in Profits before Tax (PBT) were below 20% on average terms. In the year 2013 PBT of the Kenyan commercial banks increased by 16.6% as compared to the year 2012 when PBT increased by 20.6%. In the year 2009, PBT of the Kenyan banks increased by 12.9% as compared to the year 2008 when PBT increased by 13.4%.This trend is not impressive given that a lot of reforms have been done to enhance performance of the banking sector. (Oloo, 2011).

Regulatory requirements continue to increase, and banks need to spend a large part of their discretionary budget on being compliant, and on building systems and processes to keep up with the escalating requirements. Due to changes in the operating environment, several commercial banks in Kenya have had to merge or combine their operations in mutually agreed terms or one institution takes over another's operations acquisitions. Some of the reasons put forward for mergers and acquisitions are to meet the increased levels of share capital. In June 2010 Equatorial Commercial Bank (ECB) merged with Southern Credit Banking Corporation (SCBC), creating a new enlarged bank under the

Equatorial Commercial Bank brand. The Merger was aimed at enabling the banks meet the Central Bank of Kenya requirement for commercial banks shore up their core capital to at least KES 1 billion. Other examples of banks that have merged during the period of capital increment under review include CFC Bank Ltd and Stanbic Bank to form CFC Stanbic Bank Ltd, City Finance Bank Ltd and Jamii Bora Kenya Ltd to form Jamii Bora Bank. Examples of Banks that have gone through acquisitions include EABS Bank Ltd acquired by Ecobank Kenya Ltd to form Eco Bank Ltd. (Elliott, 2012).

This gives rise to an argument if banks sound profitability not limited by capital requirement would be a better way to guarantee stability as it would allow banks to naturally build a solid cushion base and to cover potential losses from recurrent earnings (Ackermann, 2010).While Demirguc *et al* (2010) argue for the need to increase capital requirement for banks, the question remains, what is the right benchmark to enforce capital regulations without jeopardizing the performance of banks. Moreover, the current banking failures in the country and the bailouts thereof motivated this study to evaluate the financial performance of banks in Kenya in relation to capital requirements.

1.3 Research Objectives

1.3.1 General Objective
The general objective of this study was to determine the relationship between capital requirement and financial performance of commercial banks in Kenya.

1.3.2 Specific Objectives

1. To determine the relationship between minimum absolute core capital and financial performance of commercial banks in Kenya.

2. To determine the relationship between total capital and financial performance of commercial banks in Kenya.

3. To determine the relationship between leverage requirement and financial performance of commercial banks in Kenya.

4. To determine the moderating effect of ownership structure on financial performance of commercial in Kenya banks.

1.3.3 Research Hypothesis
The following hypotheses had been formulated for the study:

1. H01:- There is no significant relationship between minimum absolute core capital and financial performance of commercial banks in Kenya.

2. H02:- There is no significant relationship between total capital and financial performance of commercial banks in Kenya.

3. H03:- There is no significant relationship between leverage requirement and financial performance of commercial banks in Kenya.

4. H04:- There is no moderating effect of ownership structure on the financial performance of commercial in Kenya banks

1.4 Significance of the Study
Theoretically, the study intended to add value to the body of knowledge already existing about the bank's capital structure regulations. Practically, the study is of benefit to the

Central Bank of Kenya (CBK) which is the financial services regulator of the commercial

banks in making capital structure decisions. The study is also of great significance to

investors who may have an interest of investing in Kenyan banks. The investors will have

confidence in investing in such banks when they have knowledge of the capital structure

regulation and how it affects the performance of the banks. The study is of significance

to students who will want to know about the capital regulation and how it affects banks

performance. The study is also of help to the researchers who will have an understanding

of banks capital structure decisions and thus broaden her knowledge in this interesting

area of finance.

1.5 Scope of the Study

The study centered on the relationship between capital requirement and the performance

of commercial banks in Kenya. The study focused on the return on equity, return on assets

and Net interest Margin as the indicators for financial performance of the banks. The

banks' capital structure was restricted to Tier 1 capital, Tier 2 Capital and the leverage

requirement. The study analyzed data for the period between 2008 and 2012 particularly

from the audited published financial statements of all the 43 commercial banks in Kenya.

This period was very relevant to this study since it was the period during which capital

requirement was increased by the regulator. CBK increased the minimum capital

requirement in 2008 to Sh1 billion from Sh250 million, with banks given a four-year

period to comply. The directive was issued in 2008, setting the deadline for the new

capital requirement as end of 2012. According to the Finance Act 2008, banks were

supposed to increase their capital level from Sh250 million to Sh350 million by end of

2009, Sh500 million by end of 2010, Sh700 million by end of 2011 leading to Sh1 billion

by end of 2012.

1.6 Limitations of the study

Due to time and resource constraints the study only reviewed capital regulation in the

banking industry and therefore did not include other regulations such as liquidity

management, corporate governance, foreign exchange exposure among others. However

this provides an opportunity for further research. Another limitation that was faced in this

study related to reliance on secondary data as published by the commercial banks and

Central Bank of Kenya. While internal data on indicators is likely to be more detailed

than publicly available data, its collection poses several challenges, such as limited access

to the data and confidentiality agreements. The study used publicly available documents

as a proxy. Publicly available documents can be understood as good proxies, since the

data collected for these documents is likely to be used internally as well. There were not

sufficient research done on the topic in Kenya and therefore the researcher was limited in

local comparisons of results with past studies. The researcher however obtained studies

from other similar studies that had been done internationally for comparisons purposes.

1.7 Assumptions of the Study

Since the study used secondary data it was assumed that the data collected was accurate

and credible enough to draw conclusions on the research. The study also assumed that

since all the banks studied are located in the same country and are regulated by the same

supervisor which is Central Bank of Kenya, then the operating environment was similar for all of them and therefore they could all be treated in the same way for the purpose of this study.

1.8 Organization of the Study

Chapter 1 of this study introduced the problem statement and described the specific problem addressed in the study. Chapter 2 presented a review of literature and relevant research associated with the problem addressed in this study. Chapter 3 presented the methodology and procedures used for data collection and analysis. Chapter 4 contained an analysis of the data and presentation of the results. Chapter 5 offered a summary and discussion of the researcher's findings, implications for practice, and recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents an overview of the theories of capital requirement in the context of banks performance. These theories include the economic theories on regulation, the liquidity theory and the Agency theory. This is followed by a discussion on the empirical review on capital regulation and banks performance and later by the conceptual framework of the study.

2.2 Theoretical Review

2.2.1 The Economic Theory of Regulation

According to public interest theory, government regulation is the instrument for overcoming the disadvantages of imperfect competition, unbalanced market operation, missing markets and undesirable market results (Arrow, 1985). The public interest view holds that governments regulate banks to facilitate the efficient functioning of banks by eradicating market failures, for the benefit of broader civil society.

In banking, the public interest would be served if the banking system allocated resources in a socially efficient manner (Stigler, 1972). Regulators do not have sufficient information with respect to cost, demand, quality and other dimensions of firm behavior. They can therefore only imperfectly, if at all, promote the public interest when controlling firms or societal activities. Within this tradition, these information, monitoring and enforcement cost also apply to other economic agents, such as legislators, voters or consumers. Most importantly, it is generally assumed that all economic agents pursue

their own interest, which may or may not include elements of the public interest. Under these assumptions there is no reason to conclude that regulation will promote the public interest.

The differences in objectives of economic agents and the costs involved in the interaction between them may effectively make it possible for some of the agents to pursue their own interests, perhaps at the cost of the public interest. Economic theories that proceed from these latter assumptions are therefore often called private interest theories of regulation (Martimort, 1999).Fundamental to public interest theories are market failures and efficient government intervention. According to these theories, regulation increases social welfare. Private interest theories explain regulation from interest group behavior. Transfers of wealth to the more effective interest groups often also decrease social welfare. Interest groups can be firms, consumers or consumer groups, regulators or their staff, legislators and unions. The private interest theories of regulation therefore overlap with a number of theories in the field of public choice and thus turn effectively into theories of political actions.

Depending on the efficiency of the political process, social welfare either increases or decreases. The first part of this paper discusses the general public and private interest theories of regulation, as the criticisms that have been leveled at them (Tang and Jang, 2007).Economic theory provides conflicting views on the need for and the effect of regulations in the banking sector. Since banks play such an important role in an economy, widespread failures would echo throughout an economy with devastating effects. By

effectively regulating the bank sector, governments can promote bank stability. Some researchers emphasize the naturally monopolistic role of banks. Rajan and Zingales (1995), demonstrate that banks with monopolistic power have stronger incentives to incur the necessary costs associated with overcoming informational barriers which then facilitates the flow of credit to more worthy enterprises.

Furthermore, banks with monopolistic power may possess considerable franchise value, which enhances prudent risk-taking behavior (Keeley, 1990). Thus, there may be a helping-hand role for the government in limiting destabilizing competition. Shleifer and Vishny (1986) introduced an approach to regulations that provides a quite different perspective on regulating entry. While there may exist valid economic reasons for regulating entry, this view stresses the impact of such limits on facilitating corruption and impeding economic efficiency. Regulators use entry restrictions to reward friendly constituents, extract campaign support, and collect bribes (Wabwile et al., 2014). Furthermore, an open and competitive banking sector may be less likely to produce powerful institutions that unduly influence policymakers in ways that adversely affect bank performance and stability.

2.2.2 The Capital Buffer Theory

In capital buffer theory, banks aim at holding more capital than recommended. Regulations targeting the creation of adequate capital buffers are designed to reduce the procyclical nature of lending by promoting the creation of countercyclical buffers (Von Thadden, 2004). The capital buffer is the excess capital a bank holds above the minimum capital required (Jokipii &Milne, 2011). The capital buffer theory holds that banks with

low capital buffers attempt to rebuild an appropriate capital buffer by raising capital and banks with high capital buffers attempt to maintain their capital buffer. More capital tends to absorb adverse shocks and thus reduces the likelihood of failure (Rime, 2001). Banks raise capital when the portfolio risk goes up in order to keep up their capital buffer as sighted by Laeven and Levine (2009) which appears to relate to capital adequacy and performance of the banks.

2.2.3 Liquidity Theory

Holmstom and Tirole (1998) provided a theory of liquidity in a model in which intermediaries have borrowing frictions. In their Model, a government has an advantage over private markets because it can enforce repayment of borrowed funds while the private markets because it can enforce repayment of borrowed funds while the private lenders cannot. They show that availability of government provided liquidity leads to a Pareto improvement where there is aggregate uncertainty. They further argue that the role of the government is thus to correct any inefficiencies arising from externalities and private information and possibility of hidden trades.

2.2.4 Agency Theory

Agency cost theories portray regulation as a way to raise the quality of financial services by improving incentives to perform contractual obligations in stressful situations. These private benefits theories count on self-interested parties to spot market failures and correct them by opening more markets. The financial services markets for regulatory service create outside discipline that controls and coordinates industry behavior. Institutions

benefit from regulation that enhances customer confidence, increases the convenience of customer transactions, and creates cartel profit. Agency cost theories emphasize the need to reconcile conflicts between the interests of institutions, customers, regulators and taxpayers (Edwards, 1997).

Agency cost theory recognizes that incentive conflicts and coordination problems arise in multiparty relationship. Similarly, the regulations introduce opportunities to impose rules that enhance the welfare of one sector of the society at the expense of another (Diamond and Rajan, 2000). Each rationale sets different goals and assigns responsibility for choosing and adjusting rules differently. Principles assign regulation to governmental entities that search for market failures and correct them. It is taken for granted that we may rely on a well-intentioned government to use its discretion and choose actions for the common good (Jensen, 1986).Much empirical evidence collected by researchers, for example, Ang *et al*. (2000), and Fleming *et al*. (2005), shows that agency costs generated from the conflicts between outside equity holders and owner-manager could be reduced by increasing the owner-managers proportion in equity, i.e, agency costs vary inversely with the manager's ownership. However, the conflicts between equity holders and debt holders would be more complicated.

Some researchers such as Grossman and Hart (1982); Williams (1987), argue that high leverage reduces agency costs and increases firm value by encouraging managers to act more in the interests of equity holders. This argument is known as the agency costs hypothesis. Higher leverage may reduce agency costs through the monitoring activities

by debt holders (Ang *et al*., 2000), the threat of liquidation which may cause managers to lose reputation, salaries, etc. (William, 1987), pressure to generate cash flow for the payment of interest expenses (Jensen 1986), and curtailment of over investment (Harvey *et al*., 2004).

Many studies suggest that capital improves a bank's performance probability. One set of researches emphasizes the role of capital as a buffer to absorb shocks to earnings e.g., Repullo, 2004 and Von Thadden, 2004. While various studies suggest that the bank's portfolio, screening, and monitoring choices are influenced by the bank's capital structure, if they are held fixed, then this buffer role immediately implies that higher capital increases banks financial performance. This is the mechanical effect of higher capital. Another research focused on the incentive effects of capital. This included theories based on screening, monitoring, and asset-substitution moral hazard. A minimum amount of capital is essential to the very viability of the bank.

The monitoring-based papers include Holmstrom and Tirole (1997), Allen, Carletti, and Marquez (2011), and Mehran and Thakor (2011). A key result in these papers is that higher bank capital induces higher levels of borrower monitoring by the bank, thereby reducing the probability of default or otherwise improving the bank's survival odds indirectly by increasing the surplus generated by the bank–borrower relation. The asset-substitution moral hazard theories argue that capital attenuates the excessive risk-taking incentives induced by limited liability and government protection, and that banks with

more capital optimally choose less risky portfolios (e.g., Freixas and Rochet, 2008 and Acharya et al., 2011).

Similarly, if the bank insiders had more equity capital in the bank, their project-choice incentives would improve and a depositor-initiated run would be less likely, thereby promoting stability. Koehn and Santomero (1980) suggest that banks could increase their portfolio risk when capital is sufficiently high such that their overall risk of failure is increased. Besanko and Kanatas (1996) argue that higher capital may hurt bank profitability because the benefit of reduced asset-substitution moral hazard could be more than offset by the cost of lower effort exerted by insiders whose ownership could be diluted at higher capital.

2.3 Empirical Review

Moraa (2014) used return on assets (ROA) as a measure of profitability. The findings revealed that bank size, capital strength, ownership, operations expenses, diversification do significantly influence profitability of the top six commercial banks. The result suggests that the Kenyan Government should set policies that encourage commercial banks to raise their assets and capital base as this will enhance the performance of the sector. Nonetheless, the majority of researchers believe that capital increase has positive effects on the bank's profitability and improving the market value of its stock.

Kariuki (2014) aimed at assessing the effect of capital adequacy requirement on credit creation by commercial banks in Kenya. Data for a period of 11 years from 2001 to 2011 was studied where an econometric model was used. For this purpose, data from 43 commercial banks in Kenya was extracted from CBK annual bank supervision reports. The study revealed that capital adequacy requirement introduced by Basel 1 had a negative impact on credit creation by banks in Kenya. This was evident especially in 2000 when the requirement were introduced in Kenya and in 2009 when further enhancement of minimum statutory capital requirement from Kshs. 250 million to 350 million (all the way to 1 billion by December 2012) was introduced.

A study done by Mwangi L.W *et al*. (2014) recommended that corporate managers should reduce financial leverage in order to enhance performance. This study further recommends that the government should regulate the financial sector through various monetary and fiscal policies in order to reduce the cost of borrowing given that many companies rely on external borrowing to finance their cash requirement. This is because this study provides evidence that the use of more short-term financing enhances return on assets compared to the use of long-term debt (financial leverage). Thirdly, corporate managers should follow a conservative investment policy in order to enhance the performance of their companies. This implies that the managers should maintain a higher level of investment in liquid assets relative to non-current assets.

Ragnar Gudmundsson *et al.* (2013) in the study the Role of Capital requirement on Bank Competition and Stability: The Case of the Kenyan Banking Industry investigated the role of capital requirement on bank competition and stability in Kenya for the period 2000-2011. The estimate was the Lerner index and the Panzar and Rosse H-statistic as a measure of competition in Kenya's banking industry. The estimations of both the Lerner index and the H statistic seemed to suggest that competition in the Kenyan banking sector declined over the study period. In investigating the role of capital requirement on bank competition and stability, they estimated the fixed effects panel regression model for the 36 commercial banks.

The panel estimates showed significant non-linear effect of core capital on competition. The log of core capital was positive and significant while squared log of core capital was negative and significant. This means that an increase in core capital reduces competition up to a point and then increases competition implying that the benefits of increasing capital requirement on competitiveness start to be realized once consolidation in the banking sector starts to take place.

They used return on equity to capture bank performance and stability and the estimation result confirmed a positive relationship supporting the evidence that capital regulation improves the performance of banks and financial stability. Shareholder will find high leveraged banks are more risky compared to other banks, therefore this increase required

rate of return of the shareholders. Consequently, the high leveraged banks may find raising new equity difficult due to the high cost of equity capital. Ultimately, the high leveraged banks may hold less equity than low leveraged banks. Therefore, a positive relationship is expected between leverage and capital adequacy ratio (Ahmet and Hasan, 2012).When a bank increases its liabilities to pay for assets, it is using leverage otherwise a bank's profit would be limited by the fees that it can charge and its interest rate spread. But the interest rate spread is limited by what a bank must pay on its liabilities and what it can charge on its assets.

Gicheha Reuben (2012) accepted the alternative hypothesis that there is a relationship between capital structure and financial performance of commercial banks in Kenya in his study Effects of capital structure on the financial performance of Commercial Banks in Kenya. The financial performance was measured in terms of return on assets and return on equity. The period of study was 2004 to 2009. It is important to note that during this period of study, there was a global financial crisis that affected banks in the United States of America. In the same period Kenya experienced a political crisis, leading to uncertainty in the financial sector in the year 2008.

The trend in credit created has been changing direction every four years a fact that can be attributed to shocks emanating from the piecemeal enhancement of capital adequacy requirement by the Central Bank of Kenya. The study showed that the volume of existing

bank capital may act as binding constraint on liquidity and credit creation. It is worth noting that there could have been other factors accounting for variations in credit created trends other than the capital adequacy requirement as experienced in 2005, a fact that could be attributed to factors such as high interest rate and reduced demand for credit as observed by opponents such as Sharpe, (1995). Policy makers should ensure commercial banks have adequate capital to strengthen confidence of depositors, but capital adequacy requirement should not be very punitive as to suppress bank activities and the performance of the overall economy.

Mathuva D.M (2009) in his study Capital Adequacy, Cost Income Ratio and performance of commercial banks: the Kenyan Scenario Using return on assets and return on equity as proxies for bank profitability for the period 1998 to 2007, found that bank profitability is positively related to the core capital ratio and the tier 1 risk-based capital ratio. The study also established that there exists negative relationship between the capital ratio and profitability.

Kamau (2009) used a sample of 40 banks in Kenya from1997-2006 and linear regression method to analyze factors of inefficiencies in relation to banks foreign ownership. The results showed that an increase in the degree of foreign ownership in Kenya is associated with a reduction of cost inefficiencies, suggesting that the degree of foreign-owned banks influences the performance of the local banking sector.

Consequently, some studies found that there is no relationship between the capital increase and improving the profitability of the bank. The study by Khroyesh and Al Zubii (2007) focused on the factors affecting the degree of banking safety for the period (1992 – 2002). They found a positive relationship statistically significant between the degree of banking safety and the entire rate of return on equity (ROE) and on investment (ROI). However, Khroyesh and Al Zubii (2007) mentioned that there is a negative relationship statistically significant between the degree of safety and all banking liquidity risk, capital risk and credit risk.

Claessens and Jansen (2006) as cited by Kamau (2007) argued that foreign banks usually bring with them better know-how and technical capacity, which then spills over to the rest of the banking system. They impose competitive pressure on domestic banks, thus increasing efficiency of financial intermediation and they provide more stability to the financial system because they are able to draw on liquidity resources from their parents banks and provide access to international markets. Beck and Fuchs (2004) argued that foreign-owned banks are more profitable than their domestic counterparts in developing countries and less profitable than domestic banks in industrial countries, perhaps due to benefits derived from tax breaks, technological efficiencies and other preferential treatments.

However domestic banks are likely to gain from information advantage they have about the local market compared to foreign banks. However the counter argument is that

unrestricted entry of foreign banks may result in their assuming a dominant position by driving out less efficient or less resourceful domestic banks because more depositors may have faith in big international banks than in small domestic banks. They cream-skim the local market by serving only the higher end of the market, they lack commitment and bring unhealthy competition, and they are responsible for capital flight from less developed countries in times of external crisis.(Bhattachrya,1994) Concerning the relationship between ownership identity & bank performance different scholars came up with varying results. For instance according to Claessens *et al*. (1998) domestic banks' performance is superior compared to their foreign counterparts in developed countries.

According to the same scholars the opposite is true in developing countries. Micco *et al*. (2010) also support the above argument in that in developing countries the performances of foreign banks is better compared with the other types of ownership in developing countries. However, Detragiache (2006) presented a different view about the foreign bank performance in relation to financial sector development, financial deepening, and credit creation in developing countries. He found that the performances of foreign banks compared to their domestic owned banks are inferior in developing countries. Ownership is one of the variables that affect the performance of banks. Specifically, ownership identity is one of the factors explaining the performances of banks across the board; yet the level & direction of its effect remained contentious.

There are scholars who claimed that foreign firms perform better with high profit margins and low costs compared to domestic owned banks (Farazi *et al*.2011). This is so because foreign owned firms are believed to have tested Management expertise in other countries over years. Moreover, foreign banks often customize and apply their operation systems found effective at their home countries (Ongore, 2011).

Following the study by Bernanke and Lown (1991) about the lending of large Bank Holding Companies (BHCs) and found small effects of capital in lending. In their study, Borrospide and Edag (2010) adopted the models to discuss the impact of capital ratios on loans by using Lawn and Morgan's value at risk (VAR). They found that there are reticent effects for the changes in capital on loans. These studies identified the impact of global financial crisis 2009/10 indicating that the effect of changes in the bank capital on the extension of banks credit is a key determinant of the linkage between financial condition and real activity. Quantifying this relation has therefore been one of the most important of the recent financial crisis.

2.4 Conceptual Framework

Figure 2.1: Conceptual Framework

Capital Requirement

Figure 2.1: Conceptual Framework

```
┌─────────────────────────────┐
│ • Minimum Absolute Core     │
│   Capital                   │      H01
│                             │ ─────────┐
│   -Tier 1 capital Ratio     │          │
└─────────────────────────────┘          │
                                          ▼
                              ┌───────────────────────────┐
┌─────────────────────────────┐   │ Financial Performance     │
│ • Total Capital (Tier 1 and │   │                           │
│   Tier 11 Capital)          │H02│ -Return on Equity (ROE)   │
│                             │──▶│ -Return on Assets (ROA)   │
│   -Capital Adequacy Ratio   │   │ -Net Interest Margin (NIM)│
└─────────────────────────────┘   └───────────────────────────┘
                              H04        Dependent Variable

┌─────────────────────────────┐  H03
│ • Leverage                  │ ────▶
│   -Leverage ratio           │
└─────────────────────────────┘
     Independent Variable
                              ┌───────────────────────────┐
                              │ Ownership Structure        │
                              │   • Foreign ownership      │
                              │   • Local ownership        │
                              │   • Government ownership   │
                              └───────────────────────────┘
                                   Moderating Variable
```

Source: Researcher (2017)

Figure 2.1 shows the conceptualization of the dependent and independent variables of the study related. The independent variable for this study is capital requirement of commercial banks which will be represented by minimum core capital indicated by Tier

1 Capital ratio, Total Capital indicated by capital adequacy ratio, Leverage requirement indicated by leverage ratio. The dependent variable is banks performance which is indicated by the ratios ROE, ROA and NIM. The framework also demonstrates the moderating role of bank ownership structure in the performance of banks.

Return on Equity (ROE) is a measure of performance in the banking industry, which is used to allocate capital inside and across divisions. Most banks around the world use return on equity ROE as their main metric of profitability. This reliance on ROE has emerged through the regulation of bank capital and the belief that equity is costly and should be minimized. Higher capital requirement implies lower debt costs, hence higher ROE. Another good metric for evaluating management performance is a bank's return on assets (ROA). ROA is a useful statistic for comparing the profitability of banks because it avoids distortions that are introduced by differences in financial leverage and complications in the tax laws. The formulation of ROA measures a company's earning in relation to all of the resources it had at its disposal, which is the shareholders' capital plus short and long term borrowed funds.

NIM reflects the pure operational efficiency of the bank and the competitive nature of the banking market. Changes in capital regulation could affect reported margins by causing changes in actual capital ratios Capital adequacy ratio (CAR) contributes statistically significant positive effect on the interest margin.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter explains the various research methods that were employed to gather data in the study. It describes the research design, the target population, the sample and sampling procedure, research instruments, data collection and data analysis procedure.

3.2 Research Philosophy

The research philosophy adopted in this study was positivism because only factual data was used. (Collins, 2010). The researcher was independent from the banking sector and thus was purely objective on the concepts operationalization and measurement. This method ensured that there was a distance between the subjective biases of the researcher and the objective reality of the study.

3.3 Research Design

The research design serves as a blueprint of the methods and procedures that should be used to collect collate and analyze the data needed by the researcher. The research design that was adopted in conducting this study was descriptive research design where quantitative data was assembled in order to establish the effect of capital structure regulation on the performance of banks in Kenya. This method was appropriate because it involved collecting data in order to answer questions on current status of subjects of the study. Kothari (2007) recommends descriptive design as it allows the researcher to describe, record, analyze and report conditions that exist or existed. It is also concerned with relationships and practices that exist, beliefs and processes that are ongoing, effects that are being felt, or trends that are developing. This research design allowed for the

collection of information that demonstrated relationships and described the Kenyan banking sector as it exists.

3.4 Empirical Model

The study predicted the variables and estimates of the relationship between the variables under study. The following baseline model was used,

$$Y_{it} = b_0 + b_1 (X_{1it}) + b_2 (X_{2it}) + b_3 (X_{3it}) + e$$

The moderating effect of ownership identity was also evaluated using banks ownership structure.

$$Y_{it} = b_0 + b_1 (X_{1it}) + b_2 (X_{2it}) + b_3 (X_{3it}) + b_4 (X_{4it}) + b_5 (X_{1it} \times X_{2it} \times X_{3it} \times X_{4it}) + e$$

Where:

$Y_{it} = \text{ROA}_{it}, \text{ROE}_{it}, \text{NIM}_{it} = \text{for bank } i \text{ at time } t$

$\beta_0 = $ Constant or Intercept

$X_{1it} = $ Tier 1 Capital

$X_{2it} = $ Total Capital Adequacy Ratio

$X_{3it} = $ Leverage Ratio

$X_{4it} = $ Ownership Structure

M= Moderating variable

e = error term.

t = Time dimension of the Variables

3.5 Operationalization of Variables

The purpose of the paper was to examine the relationship between the capital structure choices and the performance of the commercial banks in Kenya. Financial performance measures and capital structure were dependent and independent variables respectively. The independent variable was capital requirement of banks, while the dependent variable was financial performance indicated by Return on Equity (ROE), Return on Asset (ROA) and Net interest Margin (NIM).

Table 3.1: Operationalization of Variables

Type of Variable	Variable	Measurement	operationalization	Formula
Dependent variable	Performance	Financial Ratios		
		Return on Assets (ROA)	how efficient management is at using its assets to generate earnings	Total income / Total Assets
		Return on Equity (ROE)	profitability ratio that measures the ability of a firm to generate profits from its shareholders investments	Net income after taxes / Total equity capital
		Net Interest Margin (NIM)	measure of the difference between the interest income generated by banks and the amount of	Net interest income / Total earnings assets

Type of Variable	Variable	Measurement	operationalization	Formula
			interest paid out to their lenders relative to the amount of their assets	
Independent Variable	Capital requirement	Capital Adequacy Ratios	The amount of capital a bank has to hold	
	Minimum Absolute Core Capital	Tier 1 Capital Ratio	Is the core measure of a bank's financial strength composed of core capital only	$\dfrac{\text{Core Capital (Tier 1)}}{\text{Risk Weighted Assets}}$
	Total capital requirement	Total capital Ratio	The total amount of capital a bank has to hold Composed of Tier 1 and Tier 11 capital	Tier 1 plus Tier 11 capital. ———————— Risk Weighted Assets
	Leverage requirement	Tier 1 Leverage ratio	Gives the relationship between a banking organization's core capital and total assets	Tier 1 capital ——————— Average total Consolidated Assets

Source: Researcher (2017)

3.6 Target Population

The target population for this study was the forty three (43) Commercial banks in Kenya

as registered in the Central Bank of Kenya. (Appendix1)

3.7 Sampling Design

The study used a census approach. The research studied all the 43 commercial banks

operating in Kenya as at 31st December 2012. This is because the number of banks

involved is small, in the average of 40 over the period under review, the information

sought is easily available from the CBK Bank Supervision Annual Reports, and the time

period involved is five years (2008-2012). This period was relevant to this study since it

is the period during which capital requirement had been increased by the regulator.

Table 3.2: Population Frame

STRATA	TOTAL NUMBER OF BANKS	BANKS TO BE STUDIED	PROPORTIONATE
Domestically owned banks	24	24	100%
Foreign owned banks	14	14	100%
Banks with Government Participation	5	5	100%
Totals	**43**	**43**	**100%**

Source: Central Bank of Kenya (2017)

3.8 Data Collection

The study used secondary data to analyze the relationship between financial performance

of the commercial banks and capital regulation. The data covered the period of the years

2008-2012 and was extracted from CBK Bank Supervision Reports from the Bank

Supervision Department and from the CBK website. The CBK annual publication report on

commercial banks summarizes data on capital, profitability, liquidity, earnings, among other

vital statistics relating to banks financial performance. This data was compared with the

records from the published audited financial accounts of the commercial banks. An excel

data collection instrument was used as a check list to ensure that all necessary data is

collected and was accurately captured for the study (Appendix 2).

3.9 Data Analysis

Panel data analysis was adopted for this study to deal with the two-dimensional (cross

sectional/times series) data. This technique was used for this study since it provides for

rich information about cross sectional variations and dynamics. Panel data analysis

avoided problems in time series data e.g. multicollinearity and could identify individual

and time effects which cannot be identified by pure cross sectional or time series data

(John Wiley, 2014). Panel data provided more informative data, more variability, less

collinearity among variables, more degrees of freedom and efficiency (Gujarati and

porter, 2009).

Panel multiple regression models was used to determine the relative importance and

sensitivity of each explanatory variable in affecting the performance of banks. The critical

t level was set at 0.05 (5%) which is 95% confidence level. This cutoff value determined

the boundary between those samples resulting in a test statistic that lead to rejecting the null hypothesis and those that lead to a decision not to reject the null hypothesis. If the calculated t value is less than the critical t value then, the null hypothesis was accepted which meant that there was no significant relationship. If the calculated t value was greater than the critical t value then the null hypothesis was rejected. An increase in the t value meant more confident results that are not due to chance.

3.10 Diagnostic Testing

3.10.1 Normality
A key assumption of regression analysis was normality, which was the data followed normal distribution. To test normality of the data skewness statistics were determined. Skewness measures the extent to which a distribution of values deviates from symmetry around the mean was also evaluated. A value of zero means the distribution is symmetric, while a positive skewness indicates a greater number of smaller values, and a negative value indicates a greater number of larger values.

3.10.2 Multicollinearity
Variance inflation factors (VIFs) and correlation coefficients were used to test any multi-collinearity. This is a situation where there is a high degree of association between independent variables (Kothari, 2004). It is a problem that distorts the regression coefficients, making them unstable, difficult to interpret and hence invalid significance tests (Cooper & Schindler, 2006). VIF is the extent of inflation of standard errors of slopes due to presence of multicollinearity. A VIF of 1 meant that there was no correlation

among the predictor and the remaining predictor variables, and hence the variances were not inflated at all. The general rule of thumb is that VIFs exceeding 10 are signs of serious multicollinearity requiring correction. (Glauber, 2001).

3.10.3 Serial Auto Correlation

Serial or auto correlation is a situation where the error terms for different time periods are correlated (Gujarati, 2003). This is a problem that affect the efficiency of the estimators such that the standard errors are distorted affecting the test statistic hence invalid significance test and conclusions (Gujarati, 2003). A p value of less than the 5% level of significance indicate presence of serial correlation (Wooldridge, 2002).

3.10.4 Heteroscedasticity

This was also tested using Whites test and conclusions drawn. Heteroscedasticity is lack of constant error variance (Gujarati, 2003). This is a problem that make the standard errors biased leading to bias or invalid test statistics and confidence intervals (Wooldridge, 2002). The choice of White test was necessitated by its applicability to both nonlinear models and non-normal error terms (Berry & Feldman 1985). It is a chi square test of the form nR_2 where n is the sample size and R_2 is the unadjusted coefficient of determination of the auxiliary regression (a regression equation between lagged squared error terms and predictor variables) with m (number of independent variables) degrees of freedom (df). Unless it is severe, heteroscedasticity should not be a bother since it does not result to biased parameter estimates (Gujarati, 2003).

3.10.5 Stationarity

Stationarity is a situation where the mean, variance and autocorrelation of data structure do not change over time (Gujarati, 2003). Stationarity test is necessary to ensure that regression results are not spurious such that there is a high coefficient of determination between variables (due to non-stationarity) even if there is no cause and effect relationship (Wooldridge, 2012). Non stationarity also distort t-ratios to yield invalid significance tests (Gujarati, 2003). The augmented Dickey Fuller (ADF) unit root test 47 was used with the null hypothesis (b=k-1≥0) of non-stationarity and if the test statistic is more negative (since it is a one sided test) than the critical value at 5% level of significance, the null is rejected to imply stationarity (Gujarati, 2003).

3.10.6 Hausman Test

To cater for the unobserved variables in the model and which may or may not have effect on the predictors included in the model, Hausman specification test at 5% level of significance was conducted to determine the suitability of application of random or fixed effect model (Green, 2008). The null hypothesis for this Chi square test was that the random effect model is preferred to fixed effect model and was to be rejected if the pvalue is less than 5% to imply that fixed model is preferred (Green, 2008). The key argument under fixed model is that if the unobserved variable does not change over time, then any change in the response variable must be due to influences other than these fixed characteristics (Stock & Watson, 2003). It is therefore possible to remove or hold constant the effect of those time-invariant characteristics and assess the effect of the predictors on the response variable (Stock & Watson, 2003). To the contrary, in random effects model,

the variation across entities is assumed to be random and uncorrelated with the predictor variables in the model enabling time-invariant characteristics to be included in the model as predictors (Stock & Watson, 2003).

3.11 Research Ethics Considerations

The researcher obtained formal authority from the university to conduct the study. The researcher strived to avoid bias in, data analysis, data interpretation, peer review, personnel decisions, thesis writing, and other aspects of research where objectivity is expected or required. Careless errors and negligence were avoided through carefully and critically examination of the data. A good record of research activities, such as data collection, research design, and correspondence with agencies or journals were maintained.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATIONS AND DISCUSSIONS

4.1 Introduction

The previous chapter explained the various research methods that were used to gather and analyze data in the study. This chapter starts with a discussion on the descriptive statistics, then diagnostic tests performed to validate the use of the techniques as appropriate and inferential statistics coupled with their interpretations. This chapter also presents the research findings and a discussion of the same in line with the objectives of the study as guided by the techniques mentioned in chapter three.

4.2 Descriptive Statistics

Descriptive statistics were used to summarize the patterns that developed during the period under review in the financial performance of banks. The descriptive statistics for the number of cases, minimum, maximum, mean and standard deviation for ROA, ROE, NIM, minimum absolute core capital, total capital ratio, Leverage and ownership structure.

4.2.1 Return on Assets

Figure 4.1: Commercial Banks ROA Pattern
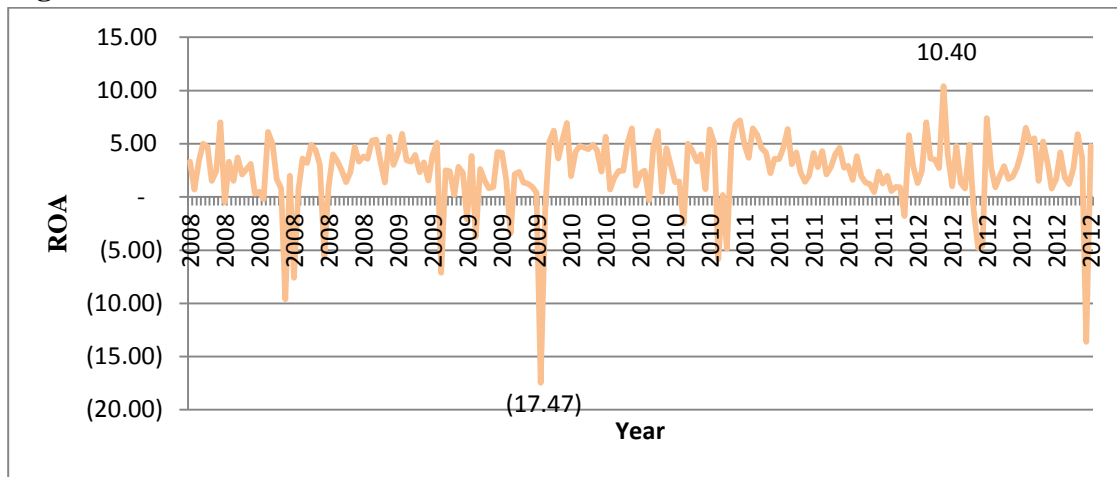
Source: Research Data, 2017

Figure 4.1 presents the trend that was observed on ROA during the period under review. The minimum ROA of -17.47% was recorded in 2009 with the highest ROA of 10.40% being recorded in 2012. Commercial banks financial performance was generally declining in 2011 as shown by the trend. The figure implies that commercial banks return on assets remained volatile without depicting any specific pattern. While some commercial banks had positive ROA, others had negative ROA. As a rule of the thumb, Investment professionals like to see a company's ROA come in at no less than 5%, while banks strive to record a ROA of 1.5% or above. A negative ROA could mean that the bank is investing in a high amount of capital into its production while simultaneously receiving little income. Negative ROA could also be accompanied by high levels of debt. However, considering the range of ROA, this shows that while some banks may be very profitable, others were still struggling.

4.2.2 Return on Equity

Figure 4.2: Commercial Banks ROE Pattern
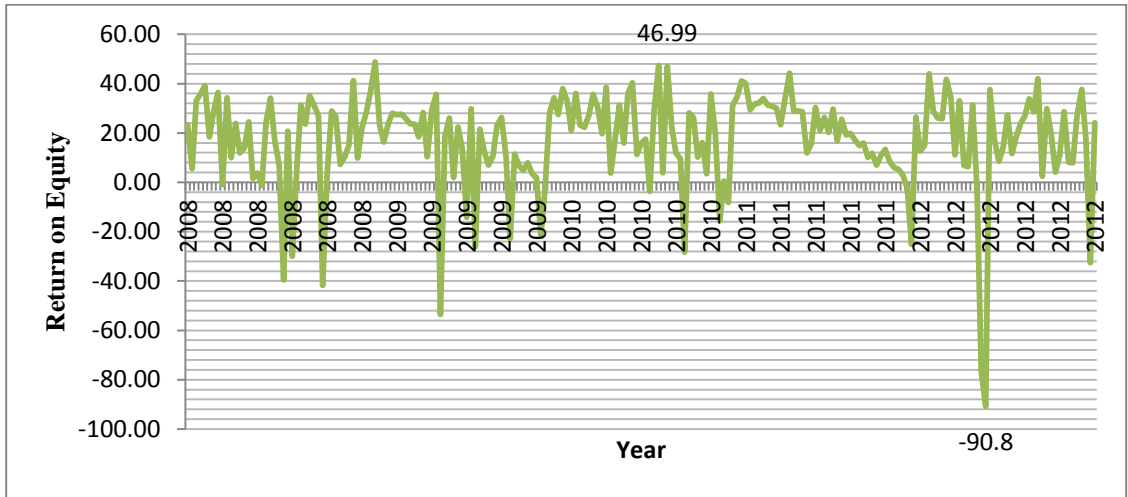
Source: Research Data, 2017

The trend on commercial banks return on assets is presented in Figure 4.2. Commercial banks ROE was found to be very high in some cases or very low as compared to other performance measures like Return on Assets. The highest ROE of 46.99% was recorded in 2010 with the minimum ROE of -90.8% being recorded in 2012. This could be as a result of high use of debt as compared to equity financing bank assets.

Figure 4.3: Commercial banks NIM Pattern
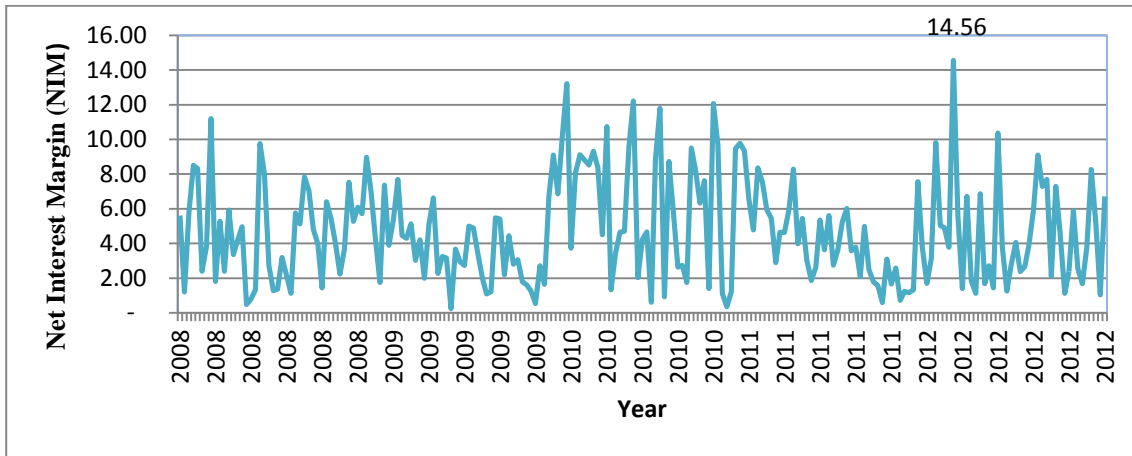
Source: Research Data, 2017

Figure 4.3 presents the trend that developed in NIM during the period under review. The highest NIM was recorded in 2012 at 14.56%. Just like ROA and ROE, NIM in 2011 had a declining trend indicating hard economic times for commercial banks in Kenya. This could be explained by the volatile macroeconomic variables in 2011. This implies that NIM is highly affected by the macroeconomic environment in the country.

4.2.3 Core Capital

Figure 4.4: Commercial banks noncompliance to core capital statutory requirement
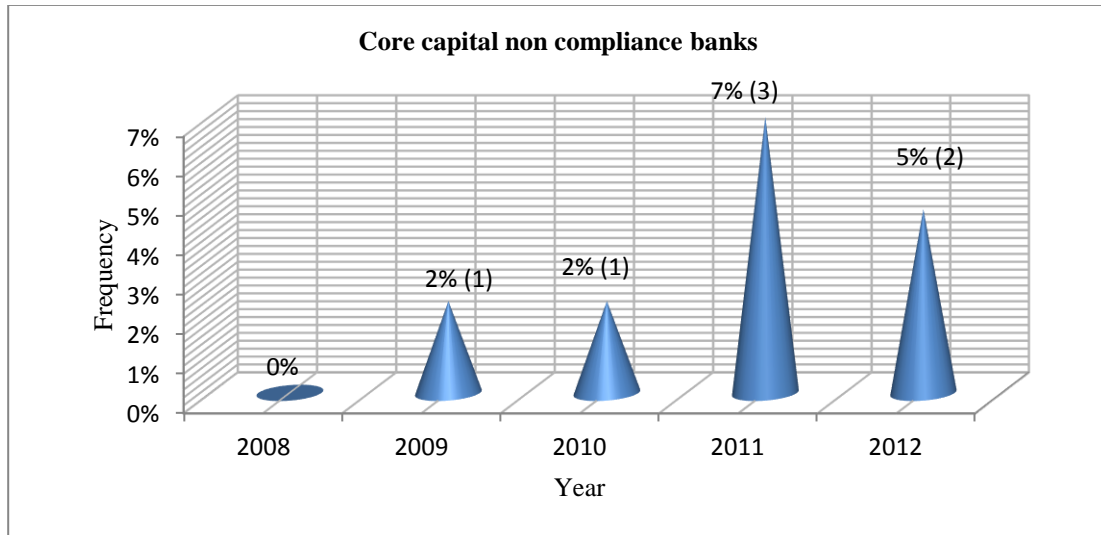
Source: Research Data, 2017

The descriptive statistics on banks compliance to the minimum absolute core capital requirements are shown in Figure 4.4. In 2008, all banks complied with minimum statutory core capital of Ksh 250 million. In 2009 and 2010, 1 (2%) bank each year was non-compliant, 3 (7%) banks were non-compliant in 2011 while 2 (5%) banks were non-compliant in 2012. This was an indication that some commercial banks in Kenya continued to struggle to maintain the minimum statutory capital requirements set by the Central bank of Kenya.

4.2.5 Commercial Banks Leverage

Table 4.1: Commercial Banks Leverage Pattern

Leverage	2008	2009	2010	2011	2012
0 to 45%	2% (1)	5% (2)	2% (3)	2% (1)	2% (1)
45% to 60%	0% (0)	0% (0)	0% (3)	0% (0)	2% (1)
60% to 70%	7% (3)	5% (0)	7% (3)	2% (1)	2% (1)
70% to 90%	91% (39	91% (39)	90% (38)	95% (40)	93% (39)
Total	100% (43)	100% (43)	100% (42)	100% (42)	100% (42)

Source: Research Data, 2017

Commercial banks in Kenya remain to be highly levered as shown in table 4.1. Majority of the commercial banks were found to be financed by debt ranging from 70% to 90% with only less than 5% of commercial banks using debt level less than 45%. This may be out of the fact that commercial banks accept deposits from the customers for which account for the assets mostly held in cash and constitute to liabilities. This also explains the reason for the abnormal return on equity realized by commercial banks since most commercial banks use non-owner supplied firms to run their operations. At an ideal level of financial leverage, a company's return on equity increases because the use of leverage increases stock volatility, increasing its level of risk which in turn increases returns. However, if a company is financially over-leveraged a decrease in return on equity could occur. Financial over-leveraging means incurring a huge debt by borrowing funds at a lower rate of interest and using the excess funds in high risk investments.

4.2.6 Commercial Ownership Structure

Table 4.2 Bank Ownership Structure
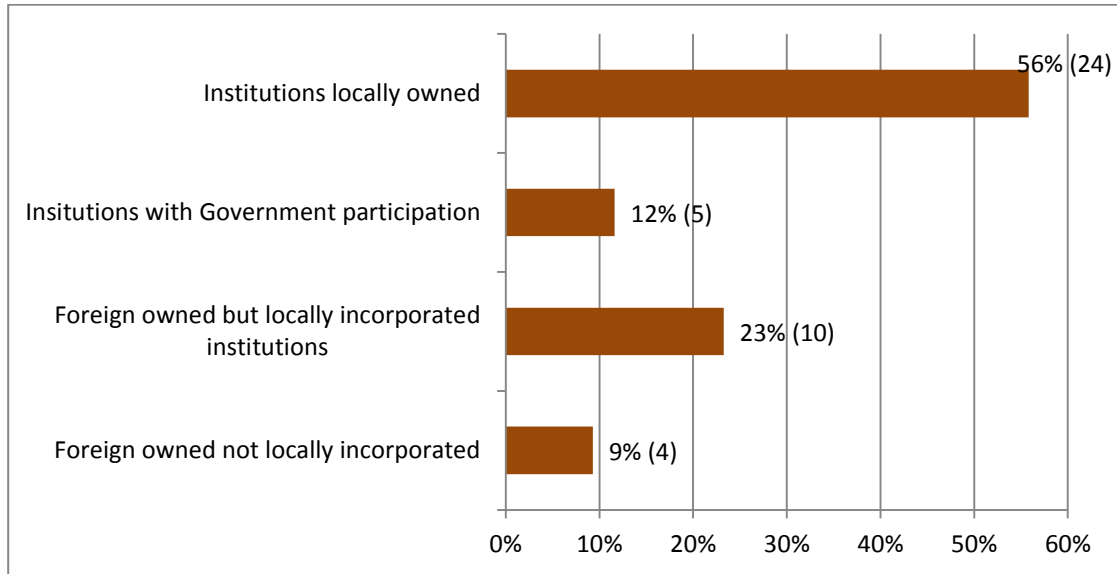
Source: Research Data, 2017

Commercial bank ownership was used in the study as a moderating factor. The findings on ownership structure are shown in table 4.2. Majority of commercial banks in Kenya are locally owned at 56% (24), 23% (10) were foreign owned but locally incorporated, 12% (5) had government participation, 9% (4) were foreign owned and not locally incorporated.

4.2.4 Measures of Central Tendencies

Table 4.3: Measures of Central Tendencies Statistics

Variable	N	Min	Max	Mean	Std. Dev
Minimum absolute core capital (millions)	209	226	42,125.00	5,059.28	7,504.26
Core capital Ratio	209	5.7	270.39	27.07	23.55
ROA	209	-17.5	10.4	2.486	3.2691
Total capital in millions	209	231	44,925.00	5,685.23	8,655.12
Total Capital Adequacy Ratio	209	8.8	270.4	28.521	23.3195
ROE	209	-90.8	48.7	17.349	19.5622
Leverage	209	0.2	0.9	0.83	0.1033
NIM	209	0.2	14.6	4.68	2.96

Source: Research Data, 2017

Further, table 4.3 presents the measures of central tendencies on minimum absolute core capital, core capital ratio and ROA. The bank with the minimum core capital was Ksh 226 million, maximum of 42,125 million with a mean of 5,059.26 million and standard deviation of 7,504.26 million. This implies that on average commercial banks in Kenya were financially healthy since the minimum core capital was above the highest statutory requirement of one billion in 2012. The minimum Tier 1 capital ratio was 5.7% which was less than statutory minimum of 8%. This was recorded in 2012 by one commercial bank. However, for all the other years, all the banks met the minimum tier 1 capital of 8%. The maximum tier 1 capital was 270.39, mean of 27.07% and standard deviation of 23.55%.The minimum return on assets achieved was -17.47% with a maximum ROA of

10.40%, mean of 2.49% and standard deviation of 3.27%. This implies that on average, commercial banks in Kenya were profitable since the mean ROA was positive.

The minimum total capital was Ksh 231 million, maximum of 44,925 million with a mean of 5,685.22 million and standard deviation of 8,655 million. The minimum total capital adequacy ratio was 8.8 while the maximum was 270.4 with a mean of 28.521 and a standard deviation of 23.31.The minimum ROE achieved was -90.80%, maximum of 48.71%, a mean of 17.35% and standard deviation of 19.56%. When a bank return on equity is negative, it could mean that its shareholders are losing, rather than gaining, value. Negative ROE could also imply a negative net income in the banks books. For most Firms a ROE of around 10% is considered strong and covers its cost of capital. Minimum Net Interest Margin (NIM) was 0.2%, maximum of 14.56%, mean of 4.68% and standard deviation of 2.96%. The low standard deviation implies that for the period reviewed, commercial banks had closely related NIM. This could be explained by the fact that due to competition, banks are forced to charge almost similar interest on loans. Minimum Leverage ratio was 2% while the maximum leverage ratio was 9% with a standard deviation of 0.1033.

4.3 Diagnostic Tests Results

Diagnostic tests done included normality tests, multicollinearity and auto correlation tests. This was important so as to confirm that the assumptions of linear regression had not been violated.

4.3.1 Normality Test

A normality test was used to determine whether sample data has been drawn from a normally distributed population. In this section normality was tested for core capital data, tier 1 capital ratio and ROA.

Table 4.4: Normality Test Results

	N	Skewness	
Variable	Statistic	Statistic	Std. Error
Core Capital	209	2.494	0.168
Tier 1 capital	209	3.005	0.168
ROA	209	-2.336	0.168
Total capital	209	2.478	0.168
Total Capital Adequacy Ratio	209	3.052	0.168
ROE	209	-2.083	0.168
Leverage	209	-3.466	0.168
NIM	209	0.721	0.168

Source: Research Data, 2017

Skewness statistics were used and results presented in table 4.4. Skewness measures the degree and direction of asymmetry. A symmetric distribution such as a normal distribution has a skewness of 0, and a distribution that is skewed to the left, e.g. when

the mean is less than the median, has a negative skewness. The values for asymmetry between -3 and +3 are considered acceptable in order to prove normal univariate distribution (George & Mallery, 2010).The skewness value was close to the range of +/- 3 indicating that the data was distributed towards respective means and hence normal.

The skewness value of 2.478 for total capital ,3.052 for total capital adequacy ratio and -2.083 for ROE was close to the range of +/- 3 indicating that the data was distributed towards respective means and hence normal. The skewness value of -3.466 for leverage and -0.721 for NIM was close to the range of +/- 3 indicating that the data was distributed towards respective means and hence normal.

4.3.2 Multicollinearity Testing

Multicollinearity occurs when independent variables are highly correlated. When independent variables are highly correlated in a multiple regression analysis it is difficult to identify the unique contribution of each variable in predicting the dependent variable because the highly correlated variables are predicting the same variance in the dependent variable.

Table 4.5: Multicollinearity Test Results

	Collinearity Statistics	
Variable	Tolerance	VIF
Leverage	0.995	1.005
core capital	0.995	1.005
Tier 1 capital	0.976	1.025
Total capital	0.976	1.025

Source: Research Data, 2017

The multicollinearity test results are presented in table 4.5. Multicollinearity exists when

Tolerance is below 0.1 and VIF (variance inflation factor) is greater than 10 (Wooldridge,

2011).VIFs for the independent variables were less than 10 and tolerance for all variables

more than 0.1 hence no multicollinearity was observed.

4.3.3 Serial Auto Correlation Analysis

Serial correlation was tested to show the relationship between the variables and itself over

the various time intervals. Serial correlations are often found in repeating patterns, when

the level of a variable effects its future level.

Table 4.6: Auto Correlation Test Results

Dependent Variable		ROA	ROE	NIM
	F statistic	63.232	12.063	127.57
	Sig. (2-tailed)	.089	.132	.179
	N	209	209	209

Source: Research Data, 2017

As shown in tables 4.6, F statistics for the models were 12.063, 63.232 and 127.57 with

ROE, ROA and NIM respectively. The p values for both ROE and ROA and NIM models

without moderation were 0.089 and 0.132 and 0.179 respectively. The test statistics were

therefore insignificant in all cases at 5% level of significance to indicate no presence of

first order serial correlation in the data.

4.3.4 Heteroscedasticity

Table 4.7 Heteroscedasticity Test Statistics

Response Variable	Model	Chi Square	P Value
ROA	1	342.45	0.000
	2	54.27	0.000
ROE	1	342.02	0.000
	2	71.05	0.000
NIM	1	344.02	0.000
	2	69.9	0.000

Source: Research Data, 2017

As shown in table 4.7, for a regression model with ROA as the response variable, the test

yielded a chi-square value of 342.45 with a p-value of 0.000 with moderation and a chi-

square value of 54.27 with a p-value of 0.000 without moderation. The chi-square values

were in both cases statistically significant at 5% significance level and hence the null

hypotheses were rejected to signify the existence of heteroscedasticity. To overcome the

problem so as to make the standard errors unbiased leading to valid test statistics and

hence significance tests as advocated by Wooldridge (2002), FGLS method was used.

For a regression model with ROE as the response variable, the test yielded a chi-square

value of 342.02 with a p-value of 0.0000 with moderation as shown in table 4.7 and a chi-

square value of 71.05 with a p-value of 0.0000 without moderation. The chi-square values

were again in both cases statistically significant at 5% significance level and hence the

null hypotheses were rejected to signify the existence of heteroscedasticity. Subsequently,

FGLS method was employed to overcome the problem.

For a regression model with NIM as the response variable, the test yielded a chi-square value of 344.02 with a p-value of 0.0000 with moderation as shown in table 4.7 and a chi-square value of 69.9 with a p-value of 0.0000 without moderation. The chi-square values were again in both cases statistically significant at 5% significance level and hence the null hypotheses were rejected to signify the existence of heteroscedasticity. Subsequently, FGLS method was employed to overcome the problem.

4.3.5 Stationarity

Table 4.8 Unit Root Test Statistics

Variable		Statistic	P value
Tier 1 Capial			
Inverse chi-squared	P	343.33	0
Inverse Normal	Z	-10.55	0
Inverse Logit	L*	-11.09	0
Modified Inv. Chi squared	Pm	17.87	0
Total Capital			
Inverse chi-squared	P	250.89	0
Inverse Normal	Z	-7.22	0
Inverse Logit L*		-9.32	0
Modified Inv. Chi squared Pm		11.591	0
Leverage			
Inverse chi-squared	P	399.25	0
Inverse Normal	Z	-15.57	0
Inverse Logit L*		-16.01	0
Modified Inv. Chi squared	Pm	18.91	0

Source: Research Data, 2017

As shown in table 4.8, the null hypotheses that all panels contain unit roots for all variables were rejected at 5% significance level since the p values were less than 5%.

This therefore implies that all the variables were stationary (no unit roots) and hence robust regression results even without lags (at level).

4.3.6 Hausman Test Results

Table 4.9: Hausman Test Results

Variable	Model		Coeff (b) fixed	Coeff (B)	b-B	S.E	Prob>chi 2
ROA	Model 1	Tier1 Capital	-6.162088	-4.393691	-1.768397	1.915281	
		Total Capital	-6.528829	-4.180188	-2.348641	1.857392	
		Leverage	-6.082275	-4.344404	-1.737871	1.8665	0.0933
	Model 2	Tier1 Capital	-4.741669	-3.459543	-1.282126	1.102641	
		Total Capital	-3.157973	-1.362379	-1.795594	1.070211	
		Leverage	-7.145676	-5.58271	-1.562965	1.069112	
		own	2.824922	.694811	2.130111	2.561379	
		Tier 1 CapOwn	7.42026	6.303197	1.117063	2.576494	
		Total CapOwn	1.226081	.5777347	.6483459	2.604077	
		LeverageOwn	4.724216	3.450914	1.273302	1.104022	0.0109
ROE	Model 1	Tier1 Capital	1.672594	.7052451	.9673489	2.650566	
		Total Capital	3.141511	1.355923	1.785589	1.071575	
		Leverage	7.127501	5.573268	1.554233	1.070465	0.2159
	Model 2	Tier1 Capital	1.296285	.3494023	1.645688	1.083829	
		Total Capital	.5721146	.5887092	-.0165945	0090464	0.011

		Leverage	.3297956	.1550654 .	.1747301	0845912	
		own	.0147709	.020347	-.0055761	.0020536	
		Tier 1 CapOwn	-.2222397	.2659737	.0437339	.0263943	
		Total CapOwn	7.42026	6.303197	1.117063	2.576494	
		LeverageOwn	-.2222397	.2659737	.0437339	.0263943	
NIM	Model 1	Tier1 Capital	-.4575947	1.666928	-2.124523	1.883982	
		Total Capital	-1.317371	3380434	-1.655414	1.08247	
		Leverage	-.5859053	-.6220038	.0360985	.0151517	0.324
	Model 2	Tier1 Capital	4.724216	3.450914	1.273302	1.104022	
		Total Capital	3.141511	1.355923	1.785589	1.071575	
		Leverage	7.127501	5.573268	1.554233	1.070465	
		own	1.296285	-.3494023	1.645688	1.083829	
		Tier 1 CapOwn	.5721146	.5887092	-.0165945	.0090464	
		Total CapOwn	.3297956	.1550654	.1747301	.0845912	
		LeverageOwn	.0147709	.020347	-.0055761	.0020536	0.012

Model 1 without Moderation
Model 2 with Moderation
Source: Research Data (2017)

As shown in tables 4.9 for ROA, ROE and NIM models without moderator, the nulls were

failed to be rejected since the p values, 0.0933, 0.2159 and 0.324 respectively were greater

than 5% level of significance. This implies that random effects models were preferred.

When ownership Percentage was incorporated, the nulls for both ROA, ROE and NIM

were rejected since the p values 0.0109, 0.011 and 0.012 respectively were less than 5%

level of significance implying that fixed effects models were preferred.

4.5 Regression Analysis Results

4.5.1 Un-moderated Regression Analysis
In this section regression analysis was run to predict the target variables and also to model

the relationship between the variables. ROA represented financial performance as the

dependent variable while tier 1 capital ratio, total adequacy ratio and leverage ratio are

the independent variables.

Table 4.10 ROA Model Test of Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
ROA	.685ᵃ	.456	.432	2.88049	0.235	20.97	.000
a. *Predictors: (Constant), Leverage, Total Capital Adequacy Ratio, Tier 1 capital*							

Source: Research Data, 2017

Table 4.10 shows that the multiple correlation coefficient R which measures the strength

and the direction of the linear relationship between the variables is 0.685. The closer R is

to 1 the stronger the linear association. A correlation greater than 0.8 is generally

described as strong, whereas a correlation less than 0.5 is generally described as weak.

R^2 is 0.456 this means that the linear regression explains 45.6% of the variance in the

data. The results are significant since the p value 0.000 is less than 0.05.

Table 4.11 ROA Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
ROA	Regression	521.986	3	173.995	20.97	.000[a]
	Residual	1700.929	205	8.297		
	Total	2222.916	208			
b. *Predictors: (Constant), Leverage, Total Capital Adequacy Ratio, Tier 1 capital*						

Source: Research Data, 2017

Further table 4.11 shows the ANOVA results that calculate the F-ratio with which we can find the probability (the P-value) of obtaining the data assuming the null hypothesis. The table shows that the *P*-value for the *F* test statistic is less than 0.05, providing strong evidence against the null hypothesis. This implies that the relationship is significant and that the means differ more than would be expected by chance alone. Therefore, the regression model predicts the dependent variable significantly well.

Table 4.12 ROA Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			Std. Error	Beta		
1	(Constant)	-8.677	3.39		-2.56	0.011
	Tier1	6.539	1.609	0.469	4.063	0.000
	Leverage	-5.975	2.851	0.189	2.096	0.037
	Total adequacy ratio	0.093	0.018	-0.664	-5.276	0.000
a. Dependent Variable: ROA						

Source: Research Data, 2017

Table 4.12 presents the model coefficients that can be used to predict the variables. The table shows the multiple linear regression estimates including the intercept and the significance levels. The coefficient for the constant for this model is -8.677 with a p value

of 0.011. The coefficient for core capital represented by tier 1 ratio is 6.539 with a p value of 0.00. This means that the minimum core capital is positively related to financial performance as represented by ROA. The coefficient for total capital adequacy ratio is 0.093 with a p value of 0.00, this also means that total capital is positively related to financial performance and the results are significant at 0.05 significance level. The coefficient for leverage is -5.975 with a p value of 0.037.This indicates leverage is negatively related to ROA and the results are significant at 0.05 significance level and therefore can be included in the model for prediction of ROA.

This results relate to Gropp and Heider (2007) who indicated a positive relationship between profit and capital relative to assets. Mathuva (2009) indicated that bank profitability has positive relationship with the core capital ratio and tier 1 risk based capital ratio. The study applied the ROA and ROE as proxies for bank profitability for the period 1998 to 2007.Regression analysis was also run to predict the target variables and also to model the relationship between capital requirement and financial performance.

Table 4.13 ROE Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
ROE	0.498	.478[a]	.432	18.92771	.001
a. *Predictors: (Constant), Leverage, Total Capital Adequacy Ratio, Tier 1 capital*					

Source: Research Data, 2017

Table 4.13 shows the multiple correlation coefficient R which measures the strength and the direction of the linear relationship between the variables. The closer R is to 1 the stronger the linear association. A correlation greater than 0.8 is generally described as strong, whereas a correlation less than 0.5 is generally described as weak. The value of 0.498 shows a positive linear relationship. R^2 is 0.478 representing the percentage of data that is closest to the line of best fit. This means that the linear regression explains 47.8% of the variance in the data. The results are significant at 0.05 level of significance since p value is 0.001.

Table 4.14 ROE Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6154.386	3	2051.462	5.726	.001a
	Residual	73442.97	205	358.258		
	Total	79597.36	208			

a. Dependent Variable: ROE
b. Predictors: (Constant), Leverage, Total Capital Adequacy Ratio,
Tier 1 capital
Source: Research Data, 2017

Table 4.14 shows that the *P*-value for the *F* test statistic is less than 0.05, providing strong evidence against the null hypothesis. The F-test is highly significant, thus we can assume that there is a linear relationship between the variables in the model.

Table 4.15 ROE Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			Std. Error	Beta		
1	(Constant)	-30.823	22.274		-1.384	0.168
	Tier1 Capital Ratio	12.696	10.575	0.152	1.201	0.031
	Leverage	-4.2755	18.737	0.226	2.282	0.024

		0.158	0.116	-0.188	-1.361	0.175
	Total adequacy ratio					

a. Dependent Variable: ROE

Source: Research data, 2017

Table 4.15 shows the multiple linear regression estimates including the intercept and the significance levels. The coefficient for core capital represented by Tier 1 capital ratio is 12.696. With a p value of 0.031.This means that minimum absolute core capital is positively related to commercial banks financial performance and that this results are significant at 0.05 significance level. The coefficient for total capital 0.158 with a p value of 0.175, which means the results are insignificant at 0.05. The constant is -30.823 with a p value of 0.168. The constant, results were insignificant and thus maybe excluded in the prediction of ROE. However the coefficient for leverage is -4.2755 which shows a negative relationship between leverage and ROE. This is statistically significant since its p value of 0.024 is less than 0.05.

This results can relate to a study by Wachiuri (2012) who sought to establish the effect of capital requirements on credit creation by commercial banks in Kenya. The study revealed that capital adequacy requirements introduced by Basel 1 had a positive impact on credit creation by banks in Kenya. This was evident especially in 2000 when the requirements were introduced in Kenya and in 2009 when further development of minimum statutory capital requirements from Kshs 250 million to Kshs350 million (all the way to 1 billion by December 2012) was introduced. Dowd (1999) found in his study that the minimum capital standards on financial institutions can be seen as a means for

reinforcing the security of deposits and robustness of the banking system and thus enhance the performance of banks.

Also, Harold (1999) found the same result, in that many regulators and depositors were concerned about the security of deposit insurance system. His study applied existing bank risk-based capital requirements to current credit union data to evaluate credit union's risk-based capital strength. The results contradict a study by Navapan and Tripe (2003) who described that comparing banks' return on equity is one method of evaluating their performance. They proved that there should be a negative relationship between a bank's capital and its ROE. They indicated there is a negative relationship between capital and profitability as measured by financial performance indicator ROE.

Regression analysis was also run to predict the target variables and also to model the relationship between financial performance and Net Interest Margin (NIM).

Table 4.16 NIM Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change
NIM	0.385	.225	.199	2.95508	1.079
a. *Predictors: (Constant), Leverage, Total Capital Adequacy Ratio, Tier 1 capital*					

Source: Research Data 2017

Table 4.16 shows the multiple correlation coefficient R which measures the strength and the direction of the linear relationship between the variables. The closer R is to 1 the stronger the linear association. The value of 0.385 shows a positive linear relationship.R^2 is 0. 225 representing the percentage of data that is closest to the line of best fit. This

means that the linear regression explains 22.5% of the variance in the data. The results are insignificant at 0.05 level of significance since the p value is 1.079. The low coefficient of determination could indicate that apart from capital requirement, banks performance is affected by other factors not in the model.

Table 4.17 NIM Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.276	3	9.425	1.079	.359a
	Residual	1790.161	205	8.732		
	Total	1818.437	208			
	b. Predictors: (Constant), Leverage, Total Capital Adequacy Ratio, Tier 1 capital					

Source: Research Data, 2017

Further, table 4.17 shows the ANOVA results to determine the statistical significance of the data using the F-test of the linear regression. The table shows that the *P*-value for the *F* test statistic is greater than 0.05, this implies that the relationship is insignificant. Therefore, the results are not statistically significant.

Table 4.18 NIM Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			Std. Error	Beta		
1	(Constant)	0.915	3.478		0.263	0.793
	Tier1	2.215	1.651	0.176	1.342	0.181
	Leverage	-1.712	2.925	0.06	0.585	0.559
	Totaladequacyratio	0.023	0.018	-0.183	-1.282	0.201

a. Dependent Variable: NIM
Source: Research Data 2017

Table 4.18 presents the model coefficients that can be used to predict the variables. The table shows the multiple linear regression estimates including the intercept and the significance levels. The coefficient represented by core capital 2.215 is statistically insignificantly different from 0 because its p-value is 0.181 is greater than 0.05. The coefficient for total capital adequacy ratio of 0.023 shows a positive but statistically insignificantly relationship because its p-value of 0.201 is greater than 0.05. The coefficient for leverage -1.712 shows a negative relationship which is less significant and the constant coefficient 0.915 is also less statistically significant because p values are definitely larger than 0.05.This means that all the coefficients were insignificant and thus this model   may be excluded from prediction of the variables.

Recently, Peterson Ozili (2015) examined the determinants of banks profitability measuring Net Interest Margin and ROA and shown that Basel Capital had no significant effect on banks' profitability. He found that the determinants of banks' profitability and its significance depend on the profitability metric employed. However, Net Interest Margin is significantly correlated with Asset quality and GDP Rate and is consistent with appropriate expectations. Relative to ROA, Capital Regulation is not significant, but is negative for Net Interest Margin and positive for ROA. ROA reports a significant relationship with Banks' size make them more profitable. Finally, GDP and CI coefficients show a significant negative. However, Molyneux and Thorthon (1992) examined European banks and found out that there is a positive correlation between banks capital and Net Interset Margin profitability. Ozili (2015), Ben Khediri et al.(2011)

detected that the capital is consistent with the theory and correlated positively to NIM.The same finding was with Gunes (2014).

The determinants of bank Net Interest Margin evidence from the Lebanese banking sector were conducted by Hamadi and Awdeh (2012). They analyzed the determinants of commercial bank NIM, using four factors that could affect the Lebanese Bank's Net Interest Margin for the period between 1996 and 2009. The authors showed that interest rate margins are shaped differently between domestic and foreign banks. For Domestic banks capitalization, and economic growth have a negative impact on interest margins. Conversely, the growth rate of deposits, lending, inflation, central bank discount rate, national saving, domestic investment, and to a lower degree, the interbank rate boost the domestic banks' Net Interest Margin.

4.5.2 Moderating Effect of Ownership Structure on Performance of Commercial Banks in Kenya

It was hypothesized that there is no moderating effect of ownership structure on financial performance of commercial banks in Kenya. To investigate this relationship, an extended linear regression model was then used to determine the relative importance and sensitivity of each explanatory variable after inclusion of the moderating variable to check on any changes on the relationship between variables and thus establish the moderating effect of ownership structure.

Table 4.19 Moderated ROA Model Summary

Model	R	R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.685a	0.456	2.88049	0.235	20.97	0.000
2	.685b	0.456	2.88688	0.000	0.093	0.761
a. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1						
b. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1, Ownership						

Source; Research Data 2017

Table 4.19 shows that the coefficient of determination before including the moderating variable was 0.685 when the dependent variable was ROA. After including the coefficient of determination did not change and remained at 0.685. The p-value of F-change was 0761 indicating that bank ownership structure has no moderating effect on the relationship between capital requirement and return on asset.

Table 4.20 Moderated ROA Model ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	521.986	3	173.995	20.97	.000a
	Residual	1700.929	205	8.297		
	Total	2222.916	208			
2	Regression	522.759	4	130.69	15.681	.000b
	Residual	1700.157	204	8.334		
	Total	2222.916	208			
a. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1						
b. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1, Ownership						
c. Dependent Variable: ROA						

Source; Research Data 2017

In table 4.20, the ANOVA indicates a $p < 0.05$ indicating that with and without the moderating variable, the models is significant at 95% confidence level.

Table 4.21 Moderated ROA Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-8.677	3.39		-2.56	0.0110
	Tier1	6.539	1.609	0.469	4.063	0.0000
	Leverage	-5.975	2.851	0.189	2.096	0.0370
	Total adequacy ratio	0.093	0.018	-0.664	-5.276	0.0000
2	(Constant)	-8.44	3.485		-2.422	0.0160
	Tier1	6.459	1.634	0.463	3.952	0.0000
	Leverage	-6	2.859	0.19	2.099	0.0370
	Total adequacy ratio	0.093	0.018	-0.661	-5.236	0.0000
	Ownership	-0.042	0.137	-0.019	-0.304	0.7610
a. *Dependent Variable: ROA*						

Source; Research Data 2017

Table 4.21 shows that in Model 2 the constant had a coefficient of -8.44 with a p value of 0.0160, Tier 1 capital had a coefficient of 6.459 with a p value of 0.000 while leverage had a coefficient of 6.0 with a p value of 0.0370, Total capital adequacy had a coefficient of 0.093 with a p value of 0.000. This meant that this coefficient were statistically significant at 0.05 significance level. Ownership coefficient of -0.042 had a $p > 0.761$ indicating that the coefficient had no significant effect on the model and hence it could be left out in predicting Return on Assets.

Table 4.22 Moderated ROE Model Summary

Model	R	R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.498a	0.477	18.92771	0.077	5.726	0.001
2	.498b	0.478	18.9364	0.004	0.812	0.369
a. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1						
b. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1, Ownership						

Source; Research Data 2017

The model summary results for moderated effect with return on equity ROE being the dependent variable is shown in Table 4.22.The p-value for change statistics due to moderating variable was 0.369 which was greater than 0.05 hence indicating that ownership did not have significant moderating effect on financial performance of commercial banks in Kenya.

Table 4.23 Moderated ROE Model ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6154.386	3	2051.462	5.726	.001a
	Residual	73442.97	205	358.258		
	Total	79597.36	208			
2	Regression	6445.575	4	1611.394	4.494	.002b
	Residual	73151.78	204	358.587		
	Total	79597.36	208			
a. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1						
b. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1, Ownership						
c. Dependent Variable: ROE						

Source; Research Data 2017

The ANOVA results are presented in Table 4.23.The table shows the p-value for both models were significant since they were less than 0.05. With introduction of the moderating value, the significance of the model reduces from 0.001 to 0.002.

Table 4.24 Moderated ROE Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-30.823	22.274		-1.384	0.168
	Tier1	12.696	10.575	0.152	1.201	0.031
	Leverage	-4.2755	18.737	0.226	2.282	0.024
	Total adequacy ratio	0.158	0.116	-0.188	-1.361	0.175
2	(Constant)	-26.232	22.859		-1.148	0.253
	Tier1	11.134	10.72	0.133	1.039	0.3
	Leverage	-4.3223	18.753	0.228	2.305	0.022
	Total adequacy ratio	0.151	0.116	-0.181	-1.303	0.194
	Ownership	-0.812	0.901	-0.062	-0.901	0.369
a. Dependent Variable: ROE						

Source; Research Data 2017

The model coefficients with the regression results with moderating variables are shown in Table 4.24 Model 2 coefficients shows that the constant had a coefficient of -26.232 with a p value of 0.253 showing statistical insignificance. Tier 1 capital had a coefficient of 11.134 with a p value of 0.3 also being statically insignificant, while leverage had a coefficient of -4.3223 with a p value of 0.022 showing statistical significance, Total capital adequacy had a coefficient of 0.151 with a p value of 0.194. This meant that this coefficient was also statistically insignificant at 0.05 significance level since all the p values were greater than 0.05.Ownership coefficient of -0.812 has a p-value of 0.369 indicating that ownership does not have significant effect on ROE.

Table 4.25 Moderated NIM Model Coefficients

Model	R	R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.385a	0.225	2.95508	0.016	1.079	0.359
2	.385b	0.226	2.96174	0	0.078	0.78

Source; Research Data, 2017

In table 4.25 ANOVA results indicates that introduction of moderating variable had a p-value of 0.78 indicating that bank ownership has no moderating effect on the relationship between capital requirement and bank financial performance.

Table 4.26 Moderated NIM Model ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.276	3	9.425	1.079	.359a
	Residual	1790.161	205	8.732		
	Total	1818.437	208			
2	Regression	28.964	4	7.241	0.825	.510b
	Residual	1789.473	204	8.772		
	Total	1818.437	208			
a. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1						
b. Predictors: (Constant), Total adequacy ratio, Leverage, Tier1, Ownership						
c. Dependent Variable: NIM						

Source; Research Data, 2017

In table 4.26 the ANOVA results indicates that the model is without moderating variable are not significant (p>0.05). Additionally, with the moderating variable, the results are also insignificant (p>0.05).

Table 4.27 Moderated NIM Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.915	3.478		0.263	0.793
	Tier1	2.215	1.651	0.176	1.342	0.181
	Leverage	-1.712	2.925	0.06	0.585	0.559
	Total adequacy ratio	0.023	0.018	-0.183	-1.282	0.201
2	(Constant)	0.692	3.575		0.194	0.847
	Tier1	2.291	1.677	0.182	1.367	0.173
	Leverage	-1.689	2.933	0.059	0.576	0.565
	Total adequacy ratio	0.024	0.018	-0.185	-1.294	0.197
	Ownership	0.039	0.141	0.02	0.28	0.78
a. Dependent Variable: NIM						

Source; Research Data, 2017

Table 4.27 shows the coefficients after moderation model 2 coefficients shows that the constant had a coefficient of 0.692 with a p value of 0.201 showing statistical insignificance. Tier 1 capital had a coefficient of 2.291 with a p value of 0.173 also being statically insignificant, while leverage had a coefficient of -1.689 with a p value of 0.565 showing statistical insignificance, Total capital adequacy had a coefficient of 0.024 with a p value of 0.197. This meant that this coefficient was also statistically insignificant at 0.05 significance level since all the p values were greater than 0.05.Ownership coefficient of 0.039 has a p-value of 0.78 indicating that ownership does not have significant effect on NIM.

This findings are related to those by Moraa (2014) who found that bank ownership does not significantly influence profitability of the commercial banks as measured by ROA. Kiruri, R. M. (2013) conducted a research on the effects of ownership structure on bank profitability in Kenya. This study sought to investigate the effects of ownership structure on bank profitability in Kenya. The study found that ownership concentration and state ownership had negative and significant effects on bank profitability while foreign ownership and domestic ownership had positive and significant effects on bank profitability. The study concludes that higher ownership concentration and state ownership lead to lower profitability in commercial banks while higher foreign and domestic ownership lead to higher profitability in commercial banks.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of findings, conclusions drawn from the study findings, contribution to the body of knowledge, recommendations and limitations of the study.

5.2 Summary of the Study

The findings of this study were based on the objectives and the hypotheses. The first objective was to evaluate the relationship between minimum core capital and financial performance of commercial banks in Kenya. The finding of the study was that there was a significant positive relationship between minimum core capital and financial performance of commercial banks in Kenya.

The second objective was to evaluate the relationship between total capital and financial performance of commercial banks in Kenya .The finding of the study was that there was a significant positive relationship between total capital and financial performance of commercial banks in Kenya.

The third objective was to evaluate the relationship between leverage and financial performance of commercial banks in Kenya. The finding of the study was that there was a significant negative relationship between leverage and financial performance as measured by ROA and ROE but the relationship was insignificant as measured by NIM.

The fourth objective was to evaluate the moderating effect of ownership structure on financial performance of commercial in Kenya banks. With the moderating variable included in the model, the results of all the models gave insignificant results indicating that ownership did not have a significant effect on performance of commercial banks in Kenya.

5.3 Conclusion

The first specific objective was to evaluate the relationship between minimum core capital and financial performance of commercial banks in Kenya. The study concluded that minimum core capital has a significant positive relationship with financial performance of commercial banks in Kenya. This means that both variables move in tandem. It implies that if minimum core capital increases, financial performance of commercial banks increases too .On the other hand if minimum core capital requirements decreases, financial performance of commercial banks decreases too.

The second specific objective was to evaluate the relationship between total capital requirement and financial performance of commercial banks in Kenya. The study concluded that total capital requirements have a significant positive relationship with financial performance of commercial banks in Kenya. This means that both variables move intandem.This implied that if capital requirements increases, financial performance of commercial banks. On the other hand if total capital requirements decreases, financial performance of commercial banks decreases too.

The third specific objective was to evaluate the relationship between leverage and financial performance of commercial banks in Kenya. The study concluded that although leverage requirements have a significant negative relationship with financial performance of commercial banks in Kenya with ROA and ROE model the results were less significant with NIM model.

The final specific objective was to determine the moderating effect of ownership structure on financial performance of commercial in Kenya banks. All the models after moderation were insignificant and therefore the study concluded that there is no moderating effect of bank ownership on financial performance of commercial banks in Kenya.

5.4 Contribution to Knowledge
The thesis aimed at contributing to enlarge the field of knowledge within the bank capital regulation and compliance. Based on the findings of this study higher minimum core capital and higher total capital requirements will cause increased banks performance. It's therefore important for regulators and policy makers to keep a close watch on capital regulation and ensure that all banks are able to comply with the requirements for banks stability and optimal performance for banks sustainability and growth of the industry. Therefore, sound profitability limited by capital requirements would be a better way to guarantee a stability as it would allow banks to build a solid cushion base to cover potential losses. Thus the top management of the banks should play an important role to ensure compliance with the capital requirements set by CBK. The moderating role of ownership percentage on the overall performance of commercial banks in Kenya was not

significant. Thus, it is possible to conclude that the interaction effect of ownership identity on the financial performance of commercial banks in Kenya was not significant.

5.5 Recommendations

5.5.1 Recommendations for Policy
Based on the findings of the study, minimum core capital requirements and total capital requirements positively influences financial performance of commercial banks. Therefore the study recommends that the regulatory authority for banks CBK should strengthen the capital requirements for commercial banks even more to ensure optimal performance and industry growth.

The study also recommends that CBK should ensure strict regulations to cap leverage levels among commercial banks since leverage was found to have a negative influence on financial performance of commercial banks in Kenya. Use of high debt in bank capital may lead to increased risk of insolvency and therefore should be kept on close check by the regulator.

The study also recommends that the objective of the regulator should not be to set minimum capital requirements in a way that eliminates the likelihood of bank failure, but rather to balance the benefits and costs of alternative policies while leveraging on other tools at regulators disposal to ensure stable banks performance.

5.5.2 Recommendations for Practice

Based on the findings of this study, banks should comply with capital requirements since apart from increasing on its financial performance, increased capital provides a measure of assurance to the public that an institution will continue to provide financial services even when losses have been incurred, thereby helping to maintain confidence in the banking system and minimize liquidity concerns.

5.5.3 Recommendations on Areas for Further Research

The research was limited to capital adequacy ratios only and did not include many other variables that influence performance of banks. Therefore, other researches can include such variables as liquidity ratios, management efficiency ratios, asset quality measures and variables that encompass sensitivity to market conditions as explanatory variables. Since the research compared minimum absolute core or tier 1 capital ratio, total capital adequacy ratio and leverage ratios only, further research can be done using other ratios to see if effectiveness will remain the same. In addition, not only can future studies embark on wider explanatory base but also further researches can target other financial institutions.

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APPENDICES

Appendix 1: Commercial Banks in Kenya

TOTAL POPULATION

A). Foreign Owned Banking Institutions

- Bank of India

- Citibank N.A. Kenya

- Habib Bank A.G. Zurich

- Habib Bank Ltd.

- Bank of Baroda (K) Ltd.

- Barclays Bank of Kenya Ltd.

- Diamond Trust Bank Kenya Ltd.

- K-Rep Bank Ltd.

- Standard Chartered Bank (K) Ltd.

- Ecobank Ltd

- Gulf Africa Bank (K) Ltd

- First Community Bank

- Bank of Africa (K) Ltd.

- UBA Kenya Bank Limited

B). Institutions with Government Participation

- Consolidated Bank of Kenya Ltd.

- Development Bank of Kenya Ltd.

- Kenya Commercial Bank Ltd.

- National Bank of Kenya Ltd.

- CFC Stanbic Bank Ltd.

C). Institutions Locally Owned

- African Banking Corporation Ltd.

- Jamii Bora Bank Ltd.

- Commercial Bank of Africa Ltd.

- Co-operative Bank of Kenya Ltd.

- Credit Bank Ltd.

- Charterhouse Bank Ltd.

- Chase Bank (K) Ltd.

- Dubai Bank Kenya Ltd

- Equatorial Commercial 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 (K) Ltd.

- NIC Bank Ltd.

- Oriental Commercial Bank Ltd.

- Paramount Universal Bank Ltd.

- Prime Bank Ltd.

- Trans-National Bank Ltd.

- Victoria Commercial Bank Ltd.

Source: CBK Website (2015)

Appendix 11: Data Collection Instrument

CAPITAL REQUIREMENT DATA COLLECTION	yr. 1	yr. 2	yr. 3	yr. 4	yr. 5
	Ksh. ('000')	Ksh. ('000')	Ksh. ('000')	Ksh. ('000')	Ksh. ('000')
1.1. Core Capital (Tier 1)					
1.1.1 Paid up ordinary share capital/Assigned Capital					
1.1.2 Non repayable share premium					
1.1.3 Retained earnings/Accumulated losses					
1.1.4 Net After tax profits, current year to date (50% only)					
1.1.5 Non-cumulative irredeemable preference shares					
1.1.6 Other reserves					
1.1.7 Subtotal (1.1.1 to 1.1.6)					

	Amount	Risk Weight	Risk Adjusted Asset Value		
Less Deductions					
1.1.8 Investments in shares of unconsolidated subsidiary institutions and equity instruments of other institutions					
1.1.9 Goodwill					
1.1.10 Deferred Tax Asset					
1.1.11 Other Intangible Assets					
1.1.12 Total Deductions (1.1.8 to1.1.11)					
1.1.13 CORE CAPITAL (1.1.7 Less 1.1.12)					
1.2 Supplementary Capital (Tier 2)					
1.2.1 Revaluation reserves (25%)					
1.2.2 Cumulative irredeemable preference shares					
1.2.3 Convertible notes and similar capital investments					
1.2.4 Perpetual subordinated debt					
1.2.5 Limited life redeemable preference shares					
1.2.6 Term subordinated debt					
1.2.7 Statutory Loan Loss Reserve					
1.2.8 Total supplementary capital (1.2.1 to 1.2.7)					
1.2.9 Supplementary Capital/Core Capital (%)					
1.3.TOTAL CAPITAL (1.1.13 + 1.2.8)					
1.4 Total shareholder's funds (Per CBK BSM)					
1.5 Difference (1.4 Less 1.3)*					
2. On Balance Sheet Assets	**Amount**	**Risk Weight**	**Risk Adjusted Asset Value**		
2.1 Cash (including foreign notes and coins)					
2.2 Balances with Central Bank of Kenya					
2.3 Kenya Government Treasury Bills					
2.4 Kenya Government Treasury Bonds					
2.5 Lending fully secured by cash					
2.6 Loans guaranteed by the Government of Kenya and OECD Central Governments					

2.7 Loans guaranteed by the Governments of other EAC Members States				
2.8 Deposits and balances due from local institutions				
2.9 Deposits and balances due from foreign institutions				
2.10 Foreign Treasury Bills and bonds				
2.11 Claims guaranteed by Multilateral Development Banks				
2.12 Mortgage Loans secured by residential property				
2.13 Other Loans and advances (net of provisions)				
2.14 Other investments				
2.15 Fixed Assets(net of Depreciation)				
2.16 Amounts due from group companies				
2.17 Other assets				
2.18 TOTAL (2.1 to 2.17)				
2.19 Total assets (per CBK BSM)				
2.20 Difference (2.19 Less 2.18				
Risk Weighted Assets Summary				
3.1 Total Risk Adjusted off balance sheet Assets				
4. Adjusted Credit Risk Weighted Assets (2.18 above)				
4.1 Total Risk Weighted Assets for on and off balance sheet items (3 + 4)				
4.2 Market Risk qualifying Assets included in 4.1 above(2.3+2.4+2.10 plus any other trading book asset included above e.g. in 2.14)				
4.3 Adjusted Credit Risk Weighted Assets (4.1 less 4.2)				
5. Total Market Risk Weighted Assets Equivalent				
6. Operational Risk Equivalent Assets				
7. Capital Ratio Calculations				
7.1 Core Capital as per 1.1.13 above				
7.2 Total Capital as per 1.3 above				
7.3 Adjusted Credit Risk Weighted Assets as per 4.3 above				
Total Market Risk Weighted Assets Equivalent as per 5 above				
7.5 Total Risk Weighted assets Equivalent for Operations Risk as per 6 above				
7.6 Total Risk Weighted Assets (7.3 + 7.4 +7.5)				
7.7 Total Deposits				

7.8 Core capital to Total Risk Weighted assets ratio (7.1/7.6)%					
7.9 Minimum core capital to Total Risk Weighted assets requirement					
8.0 Excess/(Deficiency)(7.8 less 7.9)					
8.1 Core capital to Deposit ratio (7.1/7.7)%					
8.2 Minimum core capital to deposits requirement					
8.3 Excess/(Deficiency) (8.1 less 8.2)					
8.4 Total capital to Total Risk Weighted assets ratio (7.2/7.6)%					
8.5 Minimum total capital to risk assets requirement					
8.6 Excess/(Deficiency) (8.4 less 8.5)					
FINANCIAL PERFORMANCE DATA					
Return on Assets					
1.1 Total income					
1.2 Total Assets					
ROA					
Return on Equity					
1.1 Net income after tax					
1.2 Total equity capital					
ROE					
Net Interest Margin					
1.1 Net Interest Income					
1.2 Total Earnings Assets					
NIM					

Source: Researcher (2017)