The Relationship between Capital Requirement and Financial Performance of Commercial Banks in Kenya

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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 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 liquidity theory and 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, correlation analysis, and regression analysis. The study found that capital requirements have positive linear relationship with financial performance of commercial banks in Kenya. These results were significant for Return on Assets and Return on Equity but insignificant for Net Interest Margin. This meant that when capital requirements increase, financial performance increases as well. The study also found that ownership percentage did not have any significant moderating effect on financial performance of Kenyan banks. The study recommended that CBK should strengthen the capital requirements for commercial banks even more to ensure optimal performance and industry growth. The study also recommended 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. 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. This study was limited to capital adequacy ratios only and it neglected 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.

Keywords: Capital Requirement, Financial Performance

Background of the Study

Financial performance is the primary goal of all commercial banks. Without good financial performance, 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-Kuntand Levine, 2003).Capital requirements 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 ifcapital 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 capitalis 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.

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.

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 Kshby2012.

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.

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-Saffarand Al-Khatib, 2013). That effort may fail if the banks are capital constrained.

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-Saffarand 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)

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).

Statement of the Problem

Banks often argue that higher capital requirements will jeopardize their performance. This could occur for example if banks cost of financing were to increase significantly due to more capital holding. These higher funding costs could result in lower performance for banks and have a disruptive effect on lending. According to Goddard et al. (2004), the relationship between profitability and capital must be negative. Overcapitalization of bank is usually a sign of investment opportunities unused, which is generally in line with the results found by Thakor (1996).On the other hand, some authors argue that well capitalized banks normally reduce need for external financing which may lead to improved profitability (Pasiouras et al., 2006).

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 Keny a 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.

The challenging question in capital regulation is that while regulators believe that increased capital requirement of banks is driven by efforts to lower systemic risk and protect the depositors and the financial institutions as well, banking regulation critics build their attitudes on the presumption that decreased profitability in banks is as a result of tightened capital requirement will lead to inability of banks to maintain their current business volumes (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. To properly address this question, it was necessary to thoroughly analyze the relationship between capital requirements and banks performance.

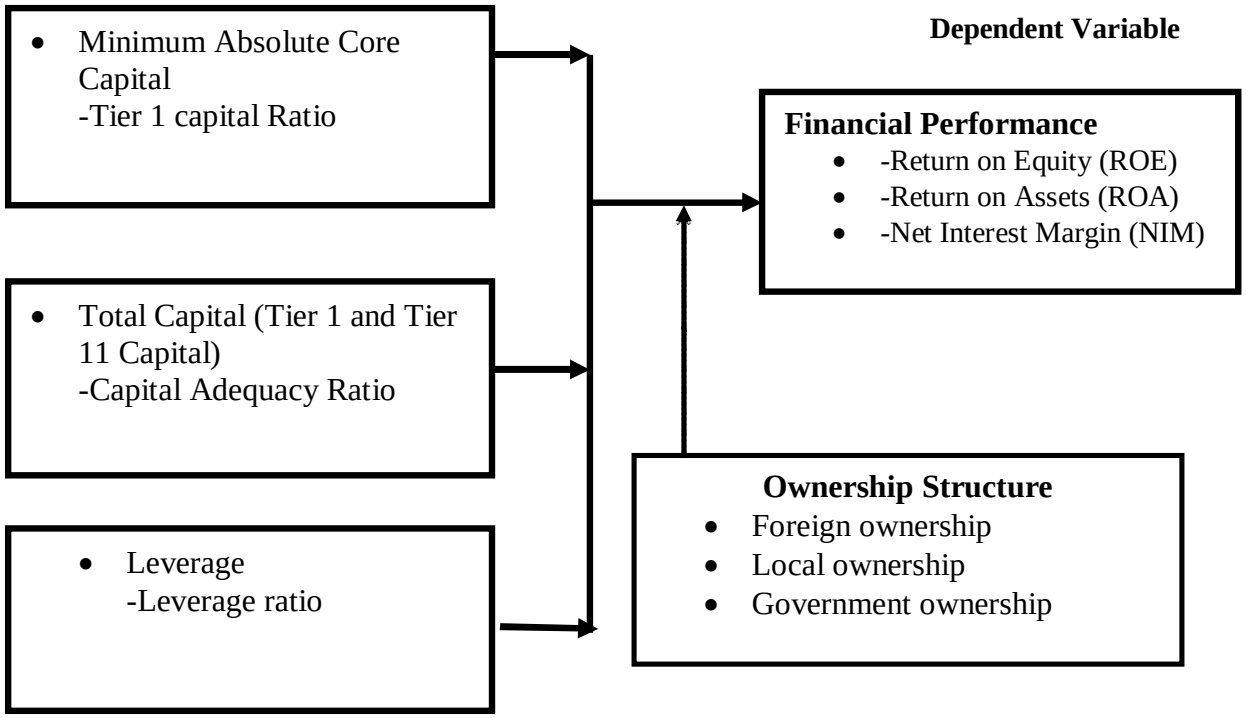
Specific Objectives

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.

Conceptual Framework

Independent Variable

Capital Requirement



Moderating Variable

Theoretical Review

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.

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.

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.

Research Design

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

Empirical Model

The study predicted the variables and estimates of the relationship between the variables under study. The moderating effect of ownership identity was also evaluated using banks ownership structure. The following baseline model was used,

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

Model Specifications

$$ROA_{it} = \beta0 + \beta1 (TICit) + \beta2 (TC_{it}) + \beta3 (LR_{it}) + e$$
$$ROE_{it} = \beta0 + \beta1 (TIC_{it}) + \beta2 (TC_{it}) + \beta3 (LR_{it}) + e$$
$$NIM_{it} = \beta0 + \beta1 (TIC_{it}) + \beta2 (TC_{it}) + \beta3 (LR_{it}) + e$$

The following is an extended model to estimate the moderating effect of Ownership Identity

$$Y_{it} = b_0 + b_1 (X_{1it}) + b_2 (X_{2it}) + b_3 (X_{3it}) + b_4 (X_{4it}) + own\ (b_5 X_{4it+}\ b_6 X_{4it} + b_7 X_{4it}) + e$$

Model Specifications

$$ROA_{it} = \beta0 + \beta1 (TICit) + \beta2 (TC_{it}) + \beta3 (LR_{it}) + \beta4 (OWN_{it}) + OWN\ (\beta5TICit + \beta6TC_{it} + \beta7LR_{it}) + e$$
$$ROE_{it} = \beta0 + \beta1 (TICit) + \beta2 (TC_{it}) + \beta3 (LR_{it}) + \beta4 (OWN_{it}) + OWN\ (\beta5TICit + \beta6TC_{it} + \beta7LR_{it}) + e$$
$$NIM_{it} = \beta0 + \beta1 (TICit) + \beta2 (TC_{it}) + \beta3 (LR_{it}) + \beta4 (OWN_{it}) + OWN\ (\beta5TICit + \beta6TC_{it} + \beta7LR_{it}) + e$$

Where:

ROA_{it} = Return on Assets for bank $_i$ at time $_t$
ROE_{it} = Return on Equity for bank $_i$ at time $_t$
NIM_{it} = Net Interest Margin for bank $_i$ at time $_t$
$\beta0$ = Constant or Intercept
TIC= Tier 1 Capital
TC=Total Capital Adequacy Ratio
LR=Leverage Ratio
OWN= Ownership Structure (Moderating variable)
e = error term.
t = Time dimension of the Variables

Target Population, Data Collection and Data Analysis

The target population for this study was the forty three (43) Commercial banks in Kenya as registered at the Central Bank of Kenya. All the 43 commercial banks operating in Kenya as at 31st December 2012 were studied.

The study used secondary data to analyze the relationship between financial performance of the commercial banks and capital regulation. The data on capital, profitability, liquidity, earnings, among other vital statistics relating to banks financial performance for the period 2008-2012 were collected. The data was extracted from CBK Bank Supervision Reports from the Bank Supervision Department, from the CBK website and the CBK annual publication report on commercial banks. Panel data analysis was adopted for this study to deal with the two-dimensional (cross sectional and times series) data. This technique was used for this study since it provides for rich information about cross sectional variations and dynamics.

This 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). A VIF of 1 will mean that there is no correlation among the predictor and the remaining predictor variables, and hence the variances are not inflated at all. The general rule of thumb is that VIFs exceeding 10 are signs of serious multicollinearity requiring correction. (Glauber, 2001). Correlations between multiple variables were established using Pearson's Product Moment test. The study also used descriptive statistics to summarize and describe the data by justifying measures of central tendency including the mean, median, and mode, deviance from the mean, variation, percentage, and correlation between variables. Schindler and Cooper (2009) suggested that a correlation above 0.8 between explanatory variables should be corrected.

Diagnostic Testing

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.

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).

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 affects 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 indicates presence of serial correlation (Wooldridge, 2002).

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 makes 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 nR2 where n is the sample size and R2 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).

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).

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)

Results and Discussions

Regression Analysis Results

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	Std. Error of the Estimate	Change Statistics		
				R Square Change	F Change	Sig. F Change
ROA	.485[a]	.235	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 the multiple correlation coefficients R which measures the strength and the direction of the linear relationship between the variables. The value of 0.485 shows a positive linear relationship.R^2 is 0. 235 representing the percentage of data that is closest to the line of best fit. This means that the linear regression explains 23.5% of the variance in the data. The results are significant since the p value 0.000 is less than 0.05.This means that there is a positive and reliable relationship between the variables.

The main aim of the analysis is determine which predictors are statistically significant and how changes in the predictor s relate to changes in the response variable and therefore the value R^2 in this case may not be very relevant. The lowR^2 could also indicate that apart from capital requirement, banks performance is affected by other factors not included in the model.

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	0.00
	Leverage	5.975	2.851	0.189	2.096	0.037
	Total adequacy ratio	-0.093	0.018	-0.664	-5.276	0.00
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 forthe constant for this model is -8.677with 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. The coefficient for total capital adequacy ratio is -0.093 with a p value of 0.00, while the coefficient for leverage is 5.975 with a p value of 0.037.This indicates that all the coefficients are significant at 0.05 significance level and therefore can be included in the model for prediction of ROA.

Table 4.13 ROE Model Summary

Model	**R**	**R Square**	**Std. Error of the Estimate**	**Sig. F Change**
ROE	.278[a]	.077	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 coefficients 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 0.278 shows a weak positive linear relationship.R^2 is 0. 077 representing the percentage of data that is closest to the line of best fit. This means that the linear regression explains 7.7% of the variance in the data. The results are significant at 0.05 level of significance since p value is 0.001.The main aim of the analysis is determine which predictors are statistically significant and how changes in the predictor s relate to changes in the response variable and therefore the value of R^2 in this case may not be very relevant. The lowR^2 could also indicate that apart from capital requirement, banks performance is affected by other factors not included in the model.

Table 4.14ROE 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	12.696	10.575	0.152	1.201	0.231
	Leverage	42.755	18.737	0.226	2.282	0.024
	Totaladequacyratio	-0.158	0.116	-0.188	-1.361	0.175

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 0.231.The coefficient for total capital -0.158 with a p value of 0.175, while the constant is -30.823 with a p value of 0.168. The constant, core capital and total capital coefficients were insignificant and thus maybe excluded in the prediction of ROE. However the coefficient for leverage is 42.755 which is statistically significant since its p value of 0.024 is less than 0.05. This means that in this model only leverage can be included in predication of ROE.

Table 4.16 NIM Model Summary

Model	**R**	**R Square**	**Std. Error of the Estimate**	**Sig. F Change**
NIM	.125[a]	0.066	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 coefficients 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 0.125 shows a positive linear relationship.R^2 is 0. 066 representing the percentage of data that is closest to the line of best fit. This means that the linear regression explains 6.6% 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 -0.023 is also statistically insignificantly because its p-value of 0.201 is greater than 0.05. The coefficient for leverage 1.712 and the constant 0.915 are 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.

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 4.19Moderated ROA Model Summaries

Model	R	R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	.485a	0.235	2.88049	0.235	20.97	0.000
2	.485b	0.235	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 0.235 when the dependent variable was ROA. After including the coefficient of determination did not change and remained at 0.235. 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 4.20Moderated 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	.278a	0.077	18.92771	0.077	5.726	0.001
2	.285b	0.081	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	0.231
	Leverage	42.755	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	43.223	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 43.223 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 -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	.125a	0.066	2.95508	0.016	1.079	0.359
2	.126b	0.066	2.96174	0	0.078	0.78

Source; Research Data, 2017

In table 4.25ANOVA 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 0.039has a p-value of 0.78 indicating that ownership does not have significant effect on NIM.

Conclusions

The first objective was to evaluate the relationship between minimum core capital and Return on Assets (ROA) of commercial banks in Kenya. The finding of the study was that there was a positive linear relationship between minimum core capital and financial performance as measured by ROA.

The second objective was to evaluate the relationship between total capital and financial performance of commercial banks in Kenya as measured by Return on Equity (ROE). The finding of the study was that there was a positive linear relationship between total capital and financial performance as measured by ROE.

The Third objective was to evaluate the relationship between leverage and financial performance of commercial banks in Kenya as measured by Net Interest Margin (NIM). The finding of the study was that there was a positive linear relationship between leverage and financial performance 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.

Recommendations

Recommendations for Policy

Based on the findings of the study, capital requirement 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 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.

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.

Recommendations on Areas for Further Research

The research was limited to capital adequacy ratios only and it neglected 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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