



EFFECT OF GOVERNMENT REGULATIONS ON PROFITABILITY OF COMMERCIAL BANKS IN KENYA

Osano, K. L., & Gekara, M.

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Osano, K. L.,^{*1} & Gekara, M.²

^{*1}MBA Candidate, Jomo Kenyatta University of Agriculture and Technology [JKUAT], Nairobi, Kenya

²PhD., Jomo Kenyatta University of Agriculture and Technology [JKUAT], Nairobi, Kenya

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ABSTRACT

The study sought to evaluate the effect of government regulations on the performance of commercial banks in Kenya. The research adopted a descriptive research design. The study focused on 42 commercial banks in Kenya. Secondary data was collected from audited annual financial reports for individual banks found on the banks website and at the Central Bank of Kenya website and library. The study used census method of sampling and sampled all 42 commercial banks in Kenya. Data was analyzed by both qualitative and quantitative approaches. The study used regression model. The data was summarized and presented using tables and charts. The study concluded that forex exposure cap negatively affects profitability of commercial banks in Kenya. On the liquidity regulation ratio, the study concluded that there exists a positive relationship between liquidity regulation ratio and profitability of commercial banks in Kenya. The study concluded that there exists a positive relationship between interest rate cap and profitability of commercial banks in Kenya. Similarly, the study concluded that there exists a positive relationship between capital adequacy requirements and profitability of commercial banks in Kenya. The study recommended that the managers of commercial banks should adopt new interest rates in that they are able to attract more borrowers so that they can make good profits by increasing the number of borrowers.

Key Words: Capital Adequacy, Liquidity Regulation Ratio, Interest Cap, Forex Exposure Cap, Profitability, Commercial Banks

INTRODUCTION

Banks are a vital parts of a nation's economy. In their traditional role as financial intermediaries, banks ensure the transmission of funds from surplus to deficit units and serve to meet the demand of those who need funding. Banks facilitate spending and investment, which fuel growth in the economy. However, despite their important role in the economy, banks are nevertheless susceptible to failure. Banks, like any other business, can go bankrupt. However, unlike most other businesses, the failure of banks, especially very large ones, can have far-reaching implications (Kane, 2000). As we saw during the great depression and most recently, during the global financial crisis and the ensuing recession, the health of the bank system (or lack thereof) can trigger economic calamities affecting millions of people. Consequently, it is imperative that banks operate in a safe manner to avoid failure. One way to ensure this is for governments to provide diligent regulation of banks. Yet, with the advent of globalization, banking activities are no longer confined to the borders of any individual country. With cross-border banking activities rapidly increasing, the need for international cooperation in bank regulation has likewise increased (Larson, 2011).

The critical role that banks play in the world's economic system demands that banks should be properly regulated and supervised not only to protect investors and consumers but also to ensure systemic stability and to safeguard the industry against s risk, protect consumers from excessive tariffs or to enhance social objectives, including stability. In the last two decades of

the 20th century, countries worldwide have had to face an unprecedented number of commercial bank failures (Heckelman & Wood, 2008). As a result, attention is turning to the need for more appropriate ways to improve the performance of national financial systems. Indeed, a substantial literature is already emerging on the causes and consequences of financial-mostly banking-crises, and on various reforms that might help prevent future crises. Although the proposed reforms differ in important respects, nearly all include changes in existing financial regulations and supervisory standards. This core of agreement is certainly understandable insofar as the financial crises in countries ranging from the United States and Japan to Korea and Mexico, to Chile and Thailand, to India and Russia, and to Ghana and Hungary have been blamed at least in part on "bad" regulation and supervision (Barth et al. 2006). For the banking industry is entrusted with a lot of responsibility with the direct and indirect influence in the overall performance of the whole economic system to thrive, there must be regulations. While some regulation have been made to help in the process of economic and financial development banking laws were made in this country to regulate banking industry, prevent unhealthy proliferations, prevent bank failure and thus, help to build up confidence of the public in banking sector. Looking to the business of banking, although not just like every other business. The main purpose or objective of the investors is to maximize profit. Banks are commercial banks firm.

In the United States, Peek (2013), found an impact of regulation on small business

exporters, the study also found that the evidence for the state-level analysis indicates that local bank health does matter. Similarly, William and Matthew (2009), on Bank regulation, capital and credit supply in UK Financial Services Authority, they found that in the period 1996-2007, banks with surpluses (deficits) of capital relative to this target tend to have higher (lower) growth in credit and other on and off balance sheet asset measures, and lower (higher) growth in regulatory capital and tier 1 capital. Similarly, in the United States, Joshua (2013), found that airlines are impacted by regulation in the United States, and that this impact has a negative correlation with the profitability of airlines. Through this determination, it can be concluded that regulation has an inherent inefficiency, and this inefficiency has been a factor in the decreased stability of the aviation industry. Regulations' negative impact on profitability suggests that the government is not accurate when conducting cost analyses prior to the implementation of new regulations. This can be more clearly seen when evaluating regulations initiated by Congress

In Rwanda, Karemera (2013), found a strong relationship between regulation and profitability of Rwanda Commercial Banks. The study found that all the measures of regulation used in the study were not significant predictors of financial performance of commercial banks in Rwanda. Similarly, William and Matthew (2009), carried out a research on Bank regulation, profitability in UK Financial Services Authority. The study found that in the period 1996-2007, banks with surpluses (deficits) of capital relative to this target tend

to have higher (lower) growth in credit and other on and off balance sheet asset measures, and lower (higher) growth in regulatory capital and tier 1 capital.

In Kenya, Mwega (2014), on the potential tradeoff between regulation and stability of Kenya's financial sector concluded that finance aims at propagating economic activity and the main aim of regulations is maintaining financial stability and enhancing economic growth. There is need to be balanced because when great focus is placed on stability of the financial sector it can hamper growth while on the other hand if emphasis is placed on growth it might bring about a financial crisis in the future. The study found that regulations have led to an increase in profitability. He however states that Kenya has a lightly regulated financial system. On the role of capital requirements on bank competition and stability in Kenya, Gudmundsson, Kisinguh and Odongo (2013), noted that an increase in core capital reduces competition up to a certain point after which competition starts to increase. This implies that its benefits start to be realized the moment consolidation in the banking sectors starts to take place. They concluded that there is a positive relationship supporting the evidence that capital regulation does improve the performance of banks and financial stability.

The current and past regulations and guidelines issued by the central bank of Kenya are: guideline on non-operating holding companies; guideline on incidental business activities, 2013; risk management guidelines, 2013; prudential guidelines, 2013. according to CBK

(2013), the guideline on non-operating holding companies enables non-operating holding companies to obtain control of an institution as part of an initiative to strengthen capital requirements at the consolidated level, reduce complexity of structures to enable efficient resolution of financial institutions and to contain risks within the groups (Kamau, 2009).

The Central Bank of Kenya (CBK, 2011) lists 45 commercial banks and one microfinance institution currently in Kenya. Three of the banks are public financial institutions with majority shareholding being the Government and state corporations. The rest are private financial institutions. Of the private banks, 27 are local commercial banks while 13 are foreign commercial banks. Commercial banks in Kenya play a major role in Kenya. They contribute to economic growth of the country by making funds available for investors to borrow as well as financial deepening in the country (Central Bank of Kenya 2013). Commercial banks therefore have a key role in the financial sector and to the whole economy. Barclays bank, Citi bank, Standard Chartered bank, and Commercial bank of Africa are among the international banks currently operating in Kenya. The banks sponsor people, projects, and events that bring its values to life and make a difference in communities across the world.

Statement of the Problem

The financial crisis of 2008 proved that it is necessary to have a stable financial system as it will have a positive impact on equity and growth. Typically, one would expect regulations to improve efficiency and lower any risk of a financial crisis. Atieno (2011), argued that

regulations interfere with the efficiency of the market while those advocating for regulation like Sinha et al (2011), have argued that if regulations are well designed and managed then they can make markets more efficient and equitable in terms of their outcomes.

This study is important in Kenya because it looks at why banks have been to making supernormal profits while assets of hard pressed borrowers are auctioned off due to loan default. The absence of regulating laws, banks have in the past creatively altered these interest rates without justification. Most loan default cases occur as a result of capricious and abrupt fluctuation of interest rates which become untenable on the part of the borrowers (Atieno, 2011). This study unearthen solutions to problems of high interest's rates, capital adequacy requirement for loan beneficiaries, problems associated with liquidity regulation ratio of banks and the effects of forex exposure on the commercial banks and economy of Kenya at large.

The CBK has earned a good reputation for banking supervision and regulation. In particular, its risk-based approach to mobile banking has become a model, since the CBK did not rush to regulate telecom providers developing banking services before the model had been tested (Ongore & Kusa, 2013). The existing empirical evidence is inconclusive about the impact of regulatory and supervisory policies on bank performance. Chortareas et al., (2012), found that banking supervisory reforms were positively associated to the performance and the stability of banks. Alternatively, powerful supervisors may exert a negative

influence on bank performance. Powerful supervisors may use their powers to benefit favored constituents, attract campaign donations, and extract bribes. However, our understanding of all these regulatory actions of CBK on bank performance is limited due to lack of scientific study in the area.

Studies on effects of government regulations on the profitability have been done both locally and internationally. William and Matthew (2009), carried out a research on Bank regulation, capital and credit supply in UK Financial Services Authority. The study found that in the period 1996-2007, banks with surpluses of capital relative to this target tend to have higher (lower) growth in credit and other on and off balance sheet asset measures, and lower (higher) growth in regulatory capital and tier 1 capital.

Locally, Aduda et al., (2013), studied the Relationship between Agency Banking and Financial Performance of Commercial Banks in Kenya. This study did not touch on the role of the government or regulatory framework in supporting the adoption of agency banking and the impact of agency banking to the financial sector deepening or financial inclusion. This study did not answer the question whether CBK regulation will stifle agency banking or otherwise. Kamau and Were (2013), sought to understand what drives bank performance in Kenya by analyzing the structural performance relationship existing in the banking sector using SCP literature. The results of the regressions analysis had provided statistically significant evidence that the main source of superior performance in the Kenyan banking sector is as

a result of structure/collusive power and not efficiency. However in their conclusion, they called for further study to be carried with regard to inclusion of impact of regulatory measures such competitive laws or anticompetitive laws into their equations to check how it influence profitability in the banking sector in Kenya. Study by Olweny and Shipho (2011), in Kenya focused on sector-specific factors that affect the performance of commercial banks. Yet, the effect of macroeconomic variables was not included. Therefore, this study tries to fill the gap by examining the effect of regulatory actions on banks performance by answering key research questions. Therefore the study seeks to answer the question: What are the effects of government regulations on the profitability of commercial banks in Kenya?

Objective of the Study

This study aimed at assessing effects of government regulations on the profitability of commercial banks in Kenya. The specific objectives were:-

- To evaluate the effect of capital adequacy requirement on profitability of commercial banks in Kenya
- To establish the effects of liquidity regulation ratio on profitability of commercial banks in Kenya
- To find out the influence of interest cap on profitability of commercial banks in Kenya
- To establish the effect of forex exposure cap on profitability of the commercial banks in Kenya.

LITERATURE REVIEW

Theoretical Review

Agency Theory

Agency theory deals with two problems in agency relationship (Jensen and Mecling 1976). The first is the agency problem that arises when the goals of the principal and the agent are conflict and when it is difficult for the principal to verify what the agent is doing. The credit relationship can be likened to an agency relationship by which the creditor (the principal)"says" some of his wealth to debtors (agents) who are committed to him capital repayments and interest costs with the conditions established in a contract previously established between the two parties (Howels & Bain 2004). One can thus infer divergence of interest between creditor and debtor. The former want the repayment of capital borrowed and the latter want to maximize the profitability of it. This problem is worse when information asymmetry is exaggerated. In the general finance system and in the bank regulation in particular, information asymmetry problems are bigger than in other sectors. Howels and Bain (2004) stated that the reason for bank regulation originates from the existence of asymmetric information the fact that the customers of banks are less informed and thus more at a disadvantage about the affairs of the banks than the bank itself.

Agency cost theory recognizes that incentive conflicts and coordination problems arise in multi-party relationship and that regulation introduces opportunities to impose rules that enhance the welfare of one sector of society at the expense of another (Diamond & Dybvig,

1983). Each rationale sets different goals and assigns responsibility for choosing and adjusting rules differently. Altruistic 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 & Michael, 1994).

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 (Howels & Bain 2004). In financial services, markets for regulatory service create outside discipline that controls and coordinates industry behaviour. Institutions benefit from regulation that enhances customer confidence; increases the convenience of customer transactions; or creates cartel profit. Agency-cost theories emphasize the need to reconcile conflicts between the interests of institutions, customers, regulators and taxpayers (Edwards, 1997).

Public Interest Theories of Regulation

Regulation consists of formation of laws and their implementation. Economic theory offers two complementary justifications for regulating financial institutions. Noble public theories treat rules as governmental instruments for increasing fairness and efficiency across the society as a whole (Heffernan, 1996). Financial crises were an important trigger in all the discussed regulatory episodes to which many

players, amongst which economists, contributed with varying weights and roles according to the circumstances. Players' public and private motivations towards regulation were relevant drivers. The existing political regime is not found to have been a discriminating factor in determining the influence economic theory had on bank legislation. More important was instead the degree of authority and legitimacy that economists as a professional category displayed at the time of reforming the regulation. Finally, the desirability of economic theory actually percolating into banking laws is discussed, although the historical evidence on the matter is not clear-cut (Chortareas, Girardone & Ventouri, 2012).

This theory proposes that regulation should be introduced to protect the public. This theory assumes that the regulatory body is a neutral arbiter of the „public interest“ and in most cases does not let its own self-interest impact on its rule-making processes. This public interest can further be described as the best possible allocation of scarce resources for individual and collective goods (Heffernan, 1996). The public interest view of regulation is clearly predominant among economists. It's always connected to the welfare economics (Hantke-Domas, 2003) and it holds that regulations provide corrective measures against various market failures, including natural monopolies and increasing returns of scale, under-provision of collective goods, and externalities. Governmental regulations are expected to increase social welfare in that perspective. Regulatory authorities are assumed to promote public interest efficiently

and to maximize social welfare. They are concerned with efficiency only whereas redistributive issues are left outside the scope of regulation, as an exclusive matter for regulators. It's also assumed that regulators are perfectly informed and rational and their decisions are affected neither by informational or computational limitations.

On the one hand, the critique of governmental regulation takes place within a larger controversy over the role of the state in the economy, as a response to the peculiar political and macroeconomic conditions (Maudos, & Fernandez, 2007). The promotion of new ideas and intellectual values favourable to free markets and the changes of the attitude of scholars toward governmental intervention in university economic departments, law schools, and think tanks frame an intellectual environment encouraging a critical approach to regulation. Thus, the Chicago school of economics strongly contributes to establishing a persuasive intellectual foundation for deregulation.

Efficient Structure (ES) Theory

The ES hypothesis, on the other hand posits that banks earn high profits because they are more efficient than others. There are also two distinct approaches within the ES; the X-efficiency and Scale-efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou et al, 2006).

Seelanatha (2010), strongly contested that employing market share as a proxy for efficiency and strongly recommend the employment of a direct measure of efficiency given that market share captures the effect of other variables other than efficiency. Subscribing to the efficiency hypothesis, considers market share as a proxy for efficiency. The efficiency hypothesis prevails when a significant positive correlation between market share and profitability is signaled. This method implicitly assumes that a higher market concentration is the main source of market power. The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and higher profits through economies of scale.

Balanced Portfolio Theory

The portfolio theory approach is the most relevant and plays an important role in bank performance studies (Nzongang & Atemnkeng, 2006). According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred

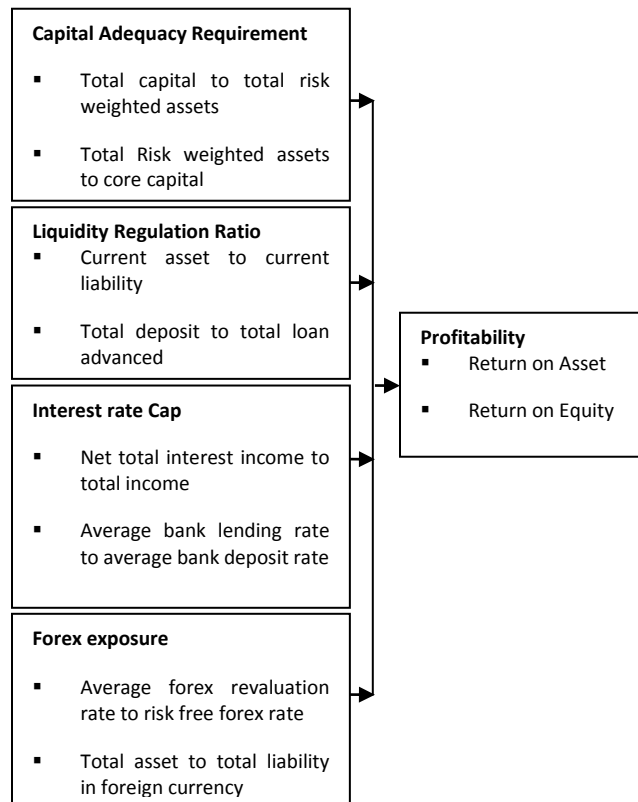
by the bank for producing each component of assets (Nzongang & Atemnkeng, 2006).

According Engelmann (2011), the risk of loan portfolios is a critical issue. Most of the recent bank failures were related, in part, to banks holding risky loans that went into default. Furthermore, many of the banks were actively and rapidly expanding their deposit bases to finance the risky loans. In principle bank failures may seem no worse than other business failures, but in fact bank failures can do substantial damage in terms of interrupting profitable investment by bank customers. In dealing with the riskiness of loan portfolios, bank regulators have focused on restrictions on bank behavior and careful monitoring of banks but have been resistant to introducing a risk adjustment to deposit insurance premiums. There are several practical reasons why risk-sensitive insurance premiums would be difficult to implement, especially for government. It is hard to get good information about the quality of those bank loans for which there is no secondary market, let alone objective information that could justify a governmental policy choice (Engelmann, 2011).

Despite its theoretical importance, critics of BPT question whether it is an ideal investment tool, because its model of financial markets does not match the real world in many ways (Leippold & Vanini, 2011). The risk, return, and correlation measures used by BPT are based on expected values, which means that they are mathematical statements about the future (the expected value of returns is explicit in the above equations, and implicit in the definitions of variance and covariance). In practice,

investors must substitute predictions based on historical measurements of asset return and volatility for these values in the equations. Very often such expected values fail to take account of new circumstances that did not exist when the historical data were generated. More fundamentally, investors are stuck with estimating key parameters from past market data because BPT attempts to model risk in terms of the likelihood of losses, but says nothing about why those losses might occur (Yilmaz, 2009).

Conceptual Framework



Independent variable Dependent Variables

Figure 1: Conceptual Framework

Capital Adequacy

Total capital to total risk weighted assets is a measure of a bank's capital. It is expressed as a

percentage of a bank's risk weighted credit exposures. This ratio is used to protect depositors and promote stability and efficiency of financial systems around the world. Capital Adequacy Ratio is also known as Capital to Risk (Weighted) Assets Ratio, is the ratio of a bank's capital to its risk. National regulators track a bank's CAR to ensure that it can absorb a reasonable amount of loss and complies with statutory Capital requirements. Capital adequacy ratio is the ratio which determines the bank's capacity to meet the time liabilities and other risks such as credit risk, operational risk etc. In the simplest formulation, a bank's capital is the "cushion" for potential losses, and protects the bank's depositors and other lenders (Beckmann, 2007). Banking regulators in most countries define and monitor CAR to protect depositors, thereby maintaining confidence in the banking system. CAR is similar to leverage; in the most basic formulation, it is comparable to the inverse of debt-to-equity leverage formulations (although CAR uses equity over assets instead of debt-to-equity; since assets are by definition equal to debt plus equity, a transformation is required). Unlike traditional leverage, however, CAR recognizes that assets can have different levels of risk.

Large bank has lower capital adequacy ratio while small banks has higher capital adequacy ratio. Moreover, as profit is directly related with capital adequacy so that lower amount of capital eventually has significant negative impact on the profitability of those banks (Barth, Gan & Nolle, 2004). In imperfect capital markets, well-capitalized banks need to borrow less in order to support a given level of assets, and tend to face lower cost of funding due to

lower prospective bankruptcy costs. Also in the presence of asymmetric information, a well-capitalized bank could provide a signal to the market that a better than average performance should be expected, (Barth, 2004). Well capitalized banks are, in this regard, less risky and profits should be lower because they are perceived to be safer. Theoretically, however, higher capital breeds higher profitability levels since by having more capital, a bank can easily adhere to regulatory capital standards so that excess can be provided as loans.

Liquidity Regulation

Liquidity is a measure of the ability and ease with which assets can be converted to cash. Liquid assets are those that can be converted to cash quickly if needed to meet financial obligations; examples of liquid assets generally include cash, central bank reserves, and government debt (Barth, 2004). Although more stringent liquidity regulation can reduce the risk of bank runs and freezing of the interbank market, there has been a vigorous debate about the negative impact of liquidity regulation due to its impact on bank lending to the non-financial economy and bank profitability.

Technically, the liquidity requirement has two parts: the liquidity coverage ratio and the net stable funding ratio (Ahokossi, 2013). When added to the capital requirement, these collectively address the incentives that banks have to be too leveraged, to hold too few liquid assets, and to engage in too much maturity transformation. A bank's liquidity is determined by its ability to meet all its anticipated expenses, such as funding loans or making

payments on debt, using only liquid assets (Ahmed, 2015). Ideally, a bank should maintain a level of liquidity that also allows it to meet any unexpected expenses without having to liquidate other assets. The bigger the cushion of liquid assets relative to anticipated liabilities, the greater the bank's liquidity. In addition, liquidating these types of assets to pay debts can have a detrimental impact on a business's ability to function and generate profit down the road. A clothing manufacturer that has to sell its equipment to pay off loans will have difficulty maintaining consistent production levels and will likely need to take on new debt to purchase replacements. Liquidating fixed assets is a last-resort solution to a short-term problem that can have devastating long-term consequences (Beckmann, 2007).

Interest Cap

An interest rate cap is a series of interest call options measured by a ratio of net total interest income to total income with a particular interest rate, each of which expire on the date the floating loan rate will be reset. At each interest payment date the holder decides whether to exercise or let that particular option expire. In an interest rate cap, the seller agrees to compensate the buyer for the amount by which an underlying short-term rate exceeds a specified rate on a series of dates during the life of the contract. Interest rate caps are used often by borrowers in order to hedge against floating rate risk. An interest rate ceiling (also known as an interest rate cap) is a regulatory measure that prevents banks or other financial institutions from charging more than a certain level of interest. Interest rate caps are used by

governments for political and economic reasons, most commonly to provide support to a specific industry or area of the economy (Chortareas, et al., 2012). Government may have identified what it considers being a market failure in an industry, or is attempting to force a greater focus of financial resources on that sector than the market would determine.

On the other hand, interest rate cap is also measured by average bank lending rate to average bank deposit rate. Though conceptually simple, there is much variation in the methodologies used by governments to implement limits on lending rates. While some countries use a vanilla interest rate cap written into all regulations for licensed financial institutions, others have attempted a more flexible approach. The most simple interest rate control puts an upper limit on any loans from formal institutions. Rather than set a rigid interest rate limit, governments in many countries find it preferable to discriminate between different types of loan and set individual caps based on the client and type of loan. The logic for such a variable cap is that it can bite at various levels of the market, minimizing consumer surplus. As a more flexible measure, the interest cap is often linked to the base rate set by the central bank in setting monetary policy meaning the cap reacts in line with market conditions rising with monetary tightening and falling with easing (Ben-Khadhiri, Casu & Sheik-Rahim, 2005).

Forex Exposure Cap

Foreign exchange exposure is the risk associated with activities that involve a global

firm in currencies other than its home currency. Essentially, it is the risk that a foreign currency may move in a direction which is financially detrimental to the global firm. Forex exposure cap is measured by a ratio of net total profit to total profit on forex volatility. The foreign exchange risk arises when a bank holds assets or liabilities in foreign currencies and influences the earnings and capital of bank due to the fluctuations in the exchange rates (Tarus et al, 2012). No one can predict what the exchange rate will be in the next period, it can move in either upward or downward direction regardless of what the estimates and predictions were. This uncertain movement poses a threat to the earnings and capital of bank, if such a movement is in undesired and unanticipated direction.

The measure of forex exposure is the total asset to total liability in foreign currency. Foreign exchange risk is the financial risk of an investment's value changing due to the changes in currency exchange rates. This also refers to the risk an investor faces when he needs to close out a long or short position in a foreign currency at a loss, due to an adverse movement in exchange rates. When the exchange rate changes unfavorably it give rise to Transactional Risk, as the name implies because of transactions in Foreign Currencies, can be hedged using different techniques. Other one Translational Risk is an accounting risk arising because of the translation of the assets held in foreign currency or abroad. Commercial banks, actively deal in foreign currencies holding assets and liabilities in foreign denominated currencies, are continuously exposed to foreign exchange risk (Guranti, 2007). Foreign

Exchange Risk of a commercial bank comes from its very trade and non-trade services. Foreign Exchange Trading Activities include the purchase and sale of foreign currencies to allow customers to partake in and complete international commercial trade transactions. The purchase and sale of foreign currencies allow customers (or the financial institution itself) to take positions in foreign real and financial investments (Beck & Fuchs, 2004).

Profitability

Profitability is the primary goal of all commercial banks. Without profitability the business cannot survive in the long run. So measuring current and past profitability and projecting future profitability is very important. According to Bruno (2005), profitability is measured with income and expenses. Income is money generated from the activities of the bank. This is simply a cash transaction between the bank and the lender to generate cash for operating the bank or buying assets. Expenses are the cost of resources used up or consumed by the activities of the business.

According to Mobius (2002), profitability is affected by government regulations of firms, because their success or failure is dependent on the extent to which they are regulated efficiently. Pasiouras (2008), noted a significantly positive relation between the ratio of short-term debt to total assets and ROE. However, a negative relationship between the ratio of long-term debt to total assets and ROE was found. With regard to the relationship between total debt and return rates, the results show a significantly positive association

between the ratio of total debt to total assets and return on equity.

Empirical review

Capital Requirements

A number of empirical studies have sought to estimate the effects of different regulatory determinants and show former some empirical findings within these areas. Specifically the sections will be concerned with the effect of regulation and financial performance of financial institutions. Benh-Khedhiri, Casu, and Sheik-Rahim (2005), study on profitability and interest rates differentials in Tunisian banking industry. More specifically, they focused on the determinants of credits unions' net interest margins as indicators of the sector's efficiency. The study seeks to establish the direct effects of capital regulations and capital requirements. Altunbas et al. (2007), in their cross-country study of European banks, for instance, find that relatively inefficient banks appear to hold more capital, while evidence from the other literature is mixed. While this literature clearly indicates that capital, influences bank efficiency it is difficult to extrapolate the expected direction of its influence on performance, as it is very likely to depend on the relative changes of inputs and outputs in the production process over time.

Kopecky and VanHoose (2006), argued that capital requirements influence bank decision-making in terms of both the quantity of lending and the quality of the loans made. Their theoretical model illustrates that the introduction of binding regulatory capital requirements on a previously unregulated banking system reduces aggregate lending,

while loan quality may either improve or worsen. Barth et al. (2004), found that while stringent capital requirements are associated with fewer non-performing loans, capital stringency is not robustly linked to banking sector stability, development, or performance, when controlling for banks. However, because capital is more expensive than deposits, banks will generally choose to operate with the minimum capital level specified by differences in regulatory regimes. Pasiouras et al. (2006), found a negative relationship between capital requirements and banks' soundness as measured by Fitch ratings. In contrast, Pasiouras (2008), reported a positive association between technical efficiency and capital requirements, although this is not statistically significant in all cases. The empirical results are yet again mixed. The results of Pasiouras et al. (2006) also indicated a negative relationship between supervisory power and overall bank soundness (i.e. credit ratings). Pasiouras (2008), found a positive and statistically significant impact of supervisory power on technical efficiency in most of his specifications.

Pasiouras (2008), reported a robust positive and significant relationship between disclosure requirements and technical efficiency. Beck et al. (2006), show that empowerment of private monitoring facilitates efficient corporate finance and has a beneficial effect on the integrity of bank lending in countries with sound legal institutions. Barth et al. (2004), find a negative association between restrictions on bank activities and banking sector development and stability. Pasiouras (2008), finds no significant association of restrictions on

activities with technical efficiency. Given the impact reported in the majority of the studies, we expect bank performance to be influenced by restrictions on their activities, although the extent and direction of this influence is difficult to predict.

Liquidity Regulation Ratio

One of the factors affecting the size of bank from lending is the size of the liquid assets it holds. This is because high liquidity ratio reduces the amount of loans granted. Olokoyo (2011) used this percentage scale for a period from 1980 to 2005 to elaborate the status of the bank lending in Nigeria. By using regression analysis, the model was found to be significant and the estimators turned out as expected. The liquidity ratio measured by deposits of the bank in other banking institutions, total cash and balances with the central bank, the balances and financial assets of the trade and dividing the result by the total value of customer deposits and deposits by other financial institutions. The study found that commercial banks deposits have the greatest impacts on their lending behaviour. The study suggested that commercial banks should focus on mobilizing more deposits to enhance their lending performance.

On the other hand, Ryan (2014), investigated the impact of liquidity regulation on banks in the UK. The study done in the year 2010 when the UK Financial Services Authority (FSA) made banks subjected to tighter liquidity regulation. Data analysis done by SPSS using descriptive and inferential statistics and the output presented graphically using graphs, tables and pie charts. The study found out that banks

altered both their asset and liability organizations to meet tighter requirements for liquidity. Banks improved their share of high quality liquid assets and funding from more stable UK non-financial deposits while at the same time tried to reduce the short-term intra-financial loans share and short-term wholesale funding. The study did not find evidence that the contracting liquidity regulation had an impact on the general size of bank balance sheets or a harmful impact on lending to the non-financial sector through either bargained lending supply or higher interest rates on loans.

A study done by Bonner and Eijffinger (2012) tested how the Dutch liquidity ratio affects corporate lending rates and interbank funding costs by researching the disparities between banks that are just above or below their regulatory liquidity necessities. The study used correlation and regression statistical measures. They used a dataset of 26 Dutch banks from January 2008 to December 2011. From the data, it was notable that banks below their liquidity requirements do not charge higher interest rates on corporate loans. They also found out that banks below their liquidity requirements pay higher interest rates on unsecured interbank loans, even though there is no public revelation of this regulatory information.

Using Panel error correction framework, Duijm and Wierts (2014) tested how banks in the Netherlands adjust their balance sheets to meet the Dutch Liquidity Ratio following liquidity shocks. Through regression analysis, the study used the data of liquidity coverage ratio (LCR) from 2010 to 2013. They found that

when the gap between a bank's actual liquidity ratio and its required ratio is below its long-term average, banks adjusted their balance sheets by increasing the share of stable forms of funding, while the response of liquid assets is insignificant. This result is broadly in line with other studies although the adjustment was more symmetric following a tightening of liquidity regulation, affecting both the composition of assets and liabilities. On the other hand, Fang (2012) looked at the impact of liquidity ratio on the European banking industry. The study used regression analysis and descriptive statistics. The study found that compliance with liquidity will have both the positive impacts and negative impacts on European banks. The net effect is that European banks will shift from high-risk/high-profit CIB business to retail banking and from international markets to core domestic markets. Although the risk exposure of banks will reduce, the overall profitability and competitiveness in global markets and CIB business will be greatly impacted, reducing the investors' appetite for banks.

Further, on liquidity regulation, Clemens (2014), investigated liquidity regulation and bank behavior in Netherlands. The period of study was from 2008 to 2012. The study found that regulating capital was associated with declining liquidity buffers. The fact that capital and liquidity are very costly for banks is a potential reason for this effect. Another potential explanation is that under the pressure of reaching capital adequacy, both banks and regulators neglected liquidity risks. Finally, declining liquidity buffers might partially be caused by banks' rational choices. While capital

alone does not address liquidity risks, it does improve banks' opportunities to fund themselves in the market and makes bank runs less likely. However, the financial crisis showed that, independent of the specific reasons, banks' liquidity buffers were too low. Even high capital levels were not a substitute for prudent liquidity risk management and buffers.

Interest Rate Cap

Lydia (2013), investigated the effect of interest rates on demand for credit by small medium enterprises in Nairobi County, in Kenya. The period of study was between 2008 to 2012. The study used descriptive statistics and SPSS in the analysis of interest rates demand and credit. The study found that at 95% confidence level, the variables produced statistically significant values and can be relied on to explain demand for loans by SMEs from lending institutions. The findings further revealed that effective interest rates, annual profits and owners' equity explained demand for loans in that order. The research findings were presented in pie charts, bar graphs, and tables for clarity. The findings of this study will be of great use to the government, lending institutions in formulating credit policies so as to promote the uptake of credit facilities in Kenya.

Michael (2008), investigated the impact of interest rates and term regulations on credit supply for joint center for housing in the United States. The study period was 20 years between 1988 to 2008. The study found that with the gradual shift over the past 20 years toward risk-based pricing of loans, the odds of a rate ceiling actually helping any borrowers have become very low, especially where loan markets are

competitive. Competition dictates that good borrowers pay lower rates anyway, with or without ceilings. Truly uninformed borrowers may pay less if rates were controlled, but only if they were sufficiently low risk as to still qualify at the restricted rate. Higher risk borrowers aren't helped at all. What good is the legal protection from paying more for a loan which you cannot find? Rate ceilings clearly limit access to credit for those who are generally at the bottom of the economic ladder. So do other creditor restrictions that are written in such a way as to raise the costs of serving higher-risk borrowers.

On the other hand, Akowuah (2013), studied interest rates and the demand for credit in Ghana. The study took place over the period September to November 2001. Qualitative data was analyzed using Statistical Packages for Social Science (SPSS) version 20, while qualitative data was analyzed using content analysis. The results indicates that interest rates have a positive impact on the domestic demand for credit in the short run and a negative relationship in the long run. While increases in the real lending rate may not immediately hamper the demand for credit, it may eventually lead to a fall in the demand for credit in the long run and vice versa. In that direction, if market forces tend to put an upward pressure on prices, authorities should take advantage of that and make more credit available. Alternatively, if authorities want to reverse the negative short run or positive long run link between the real lending rate and the demand for credit, emphasis should be placed on price stability.

Forex Exposure Cap

Nyaga (2014), investigated the effects of operating foreign exchange exposure on share prices in commercial and services firms at the Nairobi securities exchange. Secondary data from the NSE was collected, and analyzed through the use of t-tests, correlation and multivariate regression analysis. The overall findings confirm that share price movements reflect the available information in the market. The correlation results showed that there are negative relationships between foreign exchange exposure and share prices at the NSE, though such relationships were observed to be either weak or very weak. The study revealed that a unit increase in foreign exchange exposure, exchange rate volatility, interest rate, inflation rate and return negatively affect the share prices of firm listed in the Nairobi securities Exchange, thus the study concludes that there is a negative relationship between foreign exchange exposure, exchange rate volatility, interest rate, inflation rate and return and share prices of firm listed in the Nairobi securities Exchange.

Sifunjo and Mwasaru (2012), investigated the causal relationship between exchange rates and share prices in Kenya. The empirical results obtained over the period November 1993 to May 1999 indicated that the exchange rates granger causes stock prices in Kenya. The study also found out a unidirectional causality from exchange rates to stock prices. Therefore, the movements in exchange rates exert significant influence on stock price determination in Kenya. They

tested for stationary, cointegration and finally used the error correction model to test causality. Ahmed (2015), studied the effect of foreign exchange exposure on the financial performance of commercial banks in Kenya. The study found that foreign exchange exposure has negative effect on the performance of listed commercial banks in Kenya and finally, inflation has negative effect on bank performance.

Profitability

Bwire (2014), did a correlation study to establish whether there are any differences between the profitability of foreign and local banks listed at the NSE by examining the determinants of their profitability. The sample involved 3 foreign commercial banks and 6 local commercial banks listed at the NSE. Data was scrutinized using correlation analysis, descriptive analysis, and regression analysis. The study showed that there were no significant differences between the performance of foreign and domestic listed banks. The regression findings also revealed that foreign ownership did not affect bank profitability. The study also found that none of the variables had a significant influence on ROA or ROE. The study hypothesized that listed foreign banks in Kenya do not outperform the domestic listed banks.

Karemera (2013), studied the relationship between regulation and profitability of Rwanda Commercial Banks. The study found that all the measures of regulation used in the study were not significant predictors of financial performance of commercial banks in Rwanda.

Similarly, William and Matthew (2009), carried out a research on Bank regulation, profitability in UK Financial Services Authority. The study found that in the period 1996-2007, banks with surpluses (deficits) of capital relative to this target tend to have higher (lower) growth in credit and other on and off balance sheet asset measures, and lower (higher) growth in regulatory capital and tier 1 capital.

Similarly, Joshua (2013), studied the impact of government policy on airline profitability in Tennessee. The study found that airlines are impacted by regulation in the United States, and that this impact has a negative correlation with the profitability of airlines. Through this determination, it can be concluded that regulation has an inherent inefficiency, and this inefficiency has been a factor in the decreased stability of the aviation industry. Regulations' negative impact on profitability suggests that the government is not accurate when conducting cost analyses prior to the implementation of new regulations. This can be more clearly seen when evaluating regulations initiated by Congress

RESEARCH METHODOLOGY

The research adopted a descriptive research design, a survey of all commercial banks in Kenya. According to Bell (1993), descriptive research design is a systematic method, which

RESEARCH FINDINGS

Descriptive Statistics

Table 1: Capital Adequacy

Year	Median	Minimum	Maximum	Mean	Std deviation
2012	7.31	7.28	7.32	7.30	0.23

involves collecting relevant data and subsequently describing the behavior of a subject without influencing it in any way. The target population of interest in this study was the banking industry in Kenya. As at the end of 31 December 2016, the banking sector comprised of 44 banking institutions, 43 of which were commercial banks and 1-mortgage finance companies. Out of the 44 banking institutions, 30 were locally owned and 14 were foreign owned. The data obtained from financial reports was recorded and analyzed using Statistical Package for Social Sciences software (SPSS). In this study the following regression model was used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where Y = Profitability (Return on Equity)

X₁ = Capital adequacy

X₂ = Liquidity regulation ratio

X₃ = Interest rate cap

X₄ = Forex exposure cap

β₀ = Value of credit available when all the other predictor variables (X₁, X₂, X₃ and X₄) are zero.

β₁, β₂, and β₃ are the regression co-efficient or change introduced in Y by each independent variable

ε is the random error term accounting for all other variables that affect profitability but not captured in the model.

2013	7.46	7.39	7.43	7.41	0.30
2014	7.40	7.42	7.52	7.50	0.45
2015	7.89	7.72	7.78	7.79	0.28
2016	8.02	7.98	8.04	8.03	0.21

From the findings, it was noted that the year 2016 recorded the highest value for bank capital adequacy shown by a mean value of 8.03 while 2012 recorded the lowest value for

bank capital adequacy as shown by a mean of 7.30. The findings revealed that there was a significant variation in capital adequacy during the five year period.

Table 2: Liquidity Regulation Ratio

Year	Minimum	Maximum	Mean	Std deviation
2012	.150	.420	.271	.052
2013	.240	.370	.332	.025
2014	.320	.390	.366	.020
2015	.210	.350	.308	.036
2016	.240	.290	.264	.016

From the findings, it can be noted that the year 2014 recorded the highest value for percentage liquidity level as shown by a mean of value of 0.366 while the year 2016 recorded the lowest value for liquidity level at 0.264. in addition,

values for standard deviation depicts variability in percentage liquidity level during the five year period with the highest deviation of 0.052 in the year 2012 and the lowest 0.016 in the year 2016.

Table 3: Descriptive Statistics on Interest Cap

Year	Median	Minimum	Maximum	Mean	Std deviation
2012	12.98	12.91	13.23	13.12	0.22
2013	13.18	12.97	13.10	13.04	0.41
2014	11.32	11.61	12.01	11.97	0.23
2015	12.02	11.93	12.22	12.18	0.18
2016	11.96	11.64	12.02	11.91	0.24

From the summary the year 2016 recorded the lowest value for interest cap at 11.91 while 2012 recorded the highest value for interest cap at 13.12, In addition, values for standard deviation depicts variability in value for interest

cap during the five year period with the highest deviation of 0.41 in the year 2013 and the lowest at 0.18 in 2015. The findings revealed that there had been a significant variation in interest rate cap during the five-year period.

Table 4: Forex Exposure Cap

Year	Median	Minimum	Maximum	Mean	Std deviation
2012	10.30	10.21	10.50	10.24	0.47

2013	9.75	9.31	10.12	9.83	0.25
2014	10.37	10.37	10.56	10.42	0.18
2015	10.66	10.68	10.76	10.72	0.24
2016	10.55	10.51	10.61	10.53	0.21

From the summary the year 2013 recorded the lowest value for forex exposure cap at 9.83 while 2015 recorded the highest value for forex exposure cap at 10.72, In addition, values for standard deviation depicts variability in value for forex exposure during the five year period

with the highest deviation of 0.47 in the month of 2012 and the lowest at 0.21 in the year 2016. The findings revealed that there had been a significant variation in forex exposure during the five year period.

Table 5: Bank Profitability

Year	Median	Minimum	Maximum	Mean	Std deviation
2012	.9275	.9268	.9284	.9273	0.20
2013	.8437	.8420	.8442	.8436	0.24
2014	.7887	.7879	.7901	.7895	0.29
2015	.6437	.6420	.6442	.6436	0.24
2016	.5278	.5273	.5298	.5287	0.23

From the findings, it can be noted that the year 2012 recorded the highest value for bank profitability shown by a mean value of 0.9273 while the year 2016 recorded the lowest value for bank profitability as shown by a mean of 0.5287. The findings revealed that bank profitability was low in 2016 because of the introduction of interest cap regulations to the commercial banks in Kenya.

linearity can cause problems because it increases fluctuation of coefficient gauges which makes the assessments exceptionally touchy to minor changes in the model. This henceforth makes the coefficient gauges temperamental and hard to translate. In this study, multi-co linearity was tried by processing the Variance Inflation Factors (VIF) and its corresponding, the resistance. It is a circumstance in which the indicator factors in a various relapse examination are themselves exceedingly corresponded making it hard to decide the real commitment of individual indicators to the fluctuation in the needy variable. In this manner, co linearity diagnostics measure how much regressors are identified with different regressors and how this influences the strength and difference of the relapse gauges. Multi-co linearity is a circumstance when free factors in the relapse display are profoundly between related. Multi-

Test of Assumptions of the Study Variables

The study performed tests on statistical assumptions i.e. test of regression assumption and statistic used. This included test of normality, and homogeneity and multi-collinearity.

Multi-co linearity Test

In statistics, multi-co linearity alludes to the indicators that are corresponded with different indicators in the model. Severe multi-co

co linearity expands the changes of the parameter gauges and subsequently this may prompt absence of factual centrality of individual indicator factors despite the fact that the general model might be critical.

To detect for multi-co linearity, review examined the correlation matrix or by using (VIF) as shown below.

Table 6: Co linearity Statistics

Variables	Tolerance	VIF
Capital Adequacy	.345	2.897
Liquidity Regulation Ratio	.735	1.361
Interest cap	.193	5.186
Forex exposure cap	.117	8.572

The Variance Inflation Factor evaluates the seriousness of multi-co linearity in a standard slightest squares relapse investigation. VIF's more prominent than 10 are an indication of multi-co linearity; the higher the estimation of VIF's, the more extreme the issue. Outcomes above show all variables (VIF) of less than 10: Capital Adequacy (2.897), Liquidity Regulation Ratio (1.361), Interest cap (5.186) and Forex exposure cap (8.572). This implies that there was no co linearity with the variables thus all the variables were maintained in the regression model.

Homogeneity Test

Homogeneity tests are used to describe the statistical properties of a particular data set. The test is done to check whether all the items

in the population have same characteristics. Homogeneity of variance is also called homoscedasticity and is used to describe a set of data that has the same variance. Levene's test of homogeneity of variances tested homoscedasticity. Levene's test measures hypothesis that group variances are equal. If Test is significant ($p \leq .05$), the group variances are significantly different. If the test is not significant ($p \geq .05$), the group variances are not significantly different; that is, group variances are approximately equal; that is, the data groups have equal variances (Gastwirth *et al.*, 2009). The results of the homogeneity test are below.

Table 7: Levene Statistic

Variables	Levene Statistic	df1	df2	Sig.
Profitability	3.915	42	42	.062
Capital Adequacy	3.986	42	42	.052
Liquidity Regulation Ratio	2.402	42	42	.078
Interest cap	2.752	42	42	.057
Forex exposure cap	3.306	42	42	.064

From Table above, the Levene's significant value for profitability was $p=0.62$ which is greater than level of significance $p=0.05$. The test is thus not significant since ($p \geq .05$), this therefore means group variances of the responses regarding profitability across the banks are not significantly different. The Levene's significant value for Capital Adequacy was $p=0.52$. The test is not significant since ($p \geq .05$), this therefore means the group variances of the responses regarding Capital Adequacy across the banks are not significantly different. The Levene's significant value for Knowledge Conversion was $p=0.78$. The test is not significant since ($p \geq .05$), this therefore means group variances of the responses regarding Liquidity Regulation Ratio across the banks are not significantly different. In addition, the table shows that the Levene's significant value for Interest cap was $p=0.057$. The test is not significant since ($p \geq .05$), this therefore means group variances of the responses regarding Interest cap across the banks is not significantly different. Moreover, the table shows that the Levene's significant value for Forex exposure cap was $p=0.064$. The test is not significant since ($p \geq .05$), this therefore means group variances of the responses regarding Forex exposure cap across the banks is not significantly different.

Normality Test

Normality tests are done to determine whether the sample data has been drawn from a normally distributed populace. Normality assessment can be done by using a graphical or numerical procedure. The numerical procedures include inferential statistics such as Kolmogorov-Smirnov and Shapiro-Wilk. The Kolmogorov-Smirnov test is considered appropriate for samples larger than 2000 while Shapiro-Wilk test is deemed appropriate for samples ranging from 40 to 2000. In this study, the usable sample was 43 commercial banks and hence Shapiro-Wilk test was used. The typicality was tried utilizing the Shapiro-Wilk test which likewise has energy to recognize takeoff from ordinariness due to either skewness or kurtosis or both. In the event that measurement ranges from zero to one and figures higher than 0.05 show the information is ordinary (Razali & Wah, 2011). Shapiro-Wilk test evaluates whether information is typically circulated against theory that:

H_0 : Sample follows a Normal distribution.

H_a : Sample does not follow a Normal distribution.

When the p-value is greater than the alpha value, then one fails to reject the null hypothesis and don't accept the alternative hypothesis. Table 8 shows the results of the Shapiro-Wilk normality test.

Table 8: Shapiro-Wilk

	Statistic	Df	Sig.
Capital Adequacy	.934	42	.078
Liquidity Regulation Ratio	.725	42	.092
Interest cap	.874	42	.320
Forex exposure cap	.871	42	.233

Source: Author (2017)

From the table above, one cannot reject the null hypothesis H_0 that Capital Adequacy ($p = .078$), Liquidity Regulation Ratio ($p = .092$), Interest cap ($p = .320$), Forex exposure cap ($p = .233$). This owes to p-values higher than 0.05.

Regression Analysis

A multiple regression analysis was conducted to test the influence of predictor variables (capital adequacy requirement, liquidity regulation

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881 ^a	.776	.731	.34132

The study used coefficient of determination to evaluate the model fit. The adjusted R^2 , also called the coefficient of multiple determinations, is the percent of the variance in the dependent variable explained uniquely or jointly by the independent variables. The model had an average adjusted coefficient of determination (R^2) of 0.776.

This implied that 77.6% of the variations in profitability are explained by the independent variables understudy (capital adequacy requirement, liquidity regulation ratio, interest cap and forex exposure cap) at a confidence level of 95%. R is the correlation coefficient which shows that there was a strong correlation between the study variable as shown by the correlation coefficient of 0.881,

Table 10: Summary of One-Way ANOVA Results.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.58	4	6.145	4.976	.001b
Residual	46.93	38	1.235		
Total	71.51	41			

ratio, interest cap and forex exposure cap) on profitability. The research used statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions. The model summary is presented in the table below.

this shows that there was strong positive relationship between capital adequacy requirement, liquidity regulation ratio, interest cap and forex exposure cap and profitability. 22.4% of the variations in profitability are not explained by the independent variables under study. This implies that a similar study should be done to determine the other variable that accounts for 22.4% of the variations in profitability.

Analysis of Variance

The study further tested the significance of the model by use of ANOVA technique. The findings are tabulated in table below.

From the ANOVA statics, the study established that regression model had a significance level of 0.1% which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (4.976 > 2.09) an indication that capital adequacy requirement, liquidity regulation ratio, interest

cap and forex exposure cap have a significant effect on profitability. The significance value was less than 0.05 indicating that the model was significant.

Coefficients

In addition, the study used the coefficient table to determine the study model. The findings are presented in the table below.

Table 11: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.517	0.2142		7.0821	0
Capital adequacy requirements	0.704	0.3114	0.315	2.2607	0.012
Liquidity regulation ratio	0.581	0.1820	0.319	3.1923	0.011
Interest rate cap	0.727	0.0863	0.283	8.4241	0.003
Forex exposure cap	0.658	0.0612	0.221	10.751	0.021

Predictors: (Constant), Capital adequacy requirements, Liquidity regulation ratio, interest rate cap and forex exposure cap. Dependent Variable: profitability

As per the SPSS generated output as presented in table above, the equation becomes:

$$Y = 1.517 + 0.704X_1 + 0.581X_2 + 0.727X_3 + 0.658X_4 + \epsilon$$

From the regression model obtained above, a unit change in forex exposure cap while holding the other factors constant would positively change in profitability by a factor of 0.658; a unit change in Liquidity regulation ratio while holding the other factors constant would negatively change profitability by a factor of 0.581, a unit change in Interest rate cap would positively change profitability of banks by a

factor of 0.727. While a unit increase in capital requirements would positively change profitability by a factor of 0.704. The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and $\alpha = 0.05$. If the probability value was less than α , then the predictor variable was significant otherwise it wasn't. All the predictor variables were significant in the model as their probability values were less than $\alpha = 0.05$.

Discussion of the Findings

The findings established that taking all other independent variables at zero, a unit change in forex exposure cap would negatively change in profitability by a factor of -0.658. The study further found that foreign exchange rate exposure is a source of risk for banking institutions. Similarly, large foreign exchange losses could lead to bank failures. The study found that foreign-exchange exposure tends to be different among banks, with negative foreign-exchange exposure more prevalent for larger banks, suggesting that an appreciation of the Kenya shillings tends to reduce their equity values. The findings are in line with Ahmed (2015), who found that foreign exchange exposure has negative effect on the performance of listed commercial banks in Kenya

On the other hand the study investigated the influence of liquidity regulation on profitability of Commercial Banks in Kenya. Results from model show a strong relationship between liquidity regulation and profitability of Commercial Banks in Kenya. The findings established that taking all other independent variables at zero, a unit change in .The findings established that taking all other independent variables at zero, a unit change in liquidity regulation would positively change in profitability by a factor of 0.581. The findings concur with the research by Achou and Tenguh (2008), who found that there is a significant relationship between liquidity regulation and profitability (in terms of loan performance).

The study found that a unit change in interest rate would positively change profitability of banks by a factor of 0.727. The study revealed that the banking sector's profitability increases with interest rate hikes. Institutions in the banking sector such as retail banks, commercial banks, investment banks, insurance companies and brokerages have massive cash holdings due to customer balances and business activities. The study further revealed that the interest cap is often linked to the base rate set by the central bank in setting monetary policy meaning the cap reacts in line with market conditions rising with monetary tightening and falling with easing. The findings concur with Michael (2008), who noted that as interest rates rise, profitability on loans also increases, as there is a greater spread between the federal funds rate and the rate the bank charges its customers. The spread between long-term and short-term rates also expands during interest rate hikes, because long-term rates tend to rise faster than short-term rates.

The study further found that banks encourage the public to deposit their money by offering interest rates which motivate the public to make deposits by opening their different accounts with the banks and banks use their funds for making loan to other people. Practically, when bank makes loan to a customer it charges higher rate but pays lower rates to the depositor. With this difference of interest rates bank makes profit in return of giving these services. To earn much profit bank charges higher interest rate as much as it is possible and on the other hand pays lower rate as much as possible. However, to attract the same

borrower and depositor banks are competing to each other which maintain the interest rates in comparable range.

On the other hand, a unit increase in capital adequacy requirements would positively change profitability by a factor of 0.704. The study further found that capital requirements influence bank decision-making in terms of both the quantity of lending and the quality of the loans made. The findings are in line with Dang (2011), that capital adequacy ratio is directly proportional to the resilience of the bank to crisis situations. It has also a direct effect on the profitability of banks by determining its expansion too risky but profitable ventures or areas. The study further established that the relationship between profitability and capital is positive. The banks with larger capital are able to diversify their business operations by strengthening their ability to assume risk and attract funds at low cost, which enhance their liquidity position. The findings concur with Barth et al. (2004), who found that while stringent capital requirements are associated with fewer non-performing loans, capital stringency is not robustly linked to banking sector stability, development, or performance, when controlling for banks. However, because capital is more expensive than deposits, banks will generally choose to operate with the minimum capital level specified by differences in regulatory regimes. The findings are in line with Nyaga (2014), that interest rates are applied in various shapes like there are different interest rates for saving account and for taking loan. Central bank sets the interest rate to control the interest rate that transforms the interest

rates to control the lively of financial system.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study concluded that there exists a positive relationship between capital adequacy requirements and profitability of commercial banks in Kenya. The study further concluded that capital adequacy ratio is directly proportional to the resilience of the bank to crisis situations. It has also a direct effect on the profitability of banks by determining its expansion too risky but profitable ventures or areas.

On the liquidity regulation ratio, the study established a positive relationship between liquidity regulation ratio and profitability of commercial banks in Kenya. The study noted that enforcing liquidity regulation ratio can lead to a credit boom. The findings established that taking all other independent variables at zero, a unit change in liquidity regulation would positively change in profitability.

The study concluded that there exists a positive relationship between interest rate cap and profitability of commercial banks in Kenya. An increase in lending interest rates from the banks, leads to an increase in profitability of commercial banks. Bank makes loan to a customer it charges higher rate but pays lower rates to the depositor to earn profit.

The study concluded that forex exposure cap negatively affects profitability of commercial banks in Kenya. The study further concludes that foreign-exchange exposure creates a risk

to commercial banks. The study concludes that foreign-exchange exposure tends to be different among banks, with negative foreign-exchange exposure more prevalent for larger banks.

Recommendations

The study recommended that the managers of commercial banks should adopt new interest rates as capped by the CBK in that they will be able to attract more borrowers so that they can make good profits by increasing the number of borrowers. They will be able to ascertain which aspects of regulation can be geared towards the accomplishment of development goals without compromising on interest regulation and the stability of the financial sector

Regulation is a key pillar of financial institution operations in Kenya and by extension pillar to financial prosperity and stability. It was recommended that the government should develop policy and legal environment that is

conducive to association of financial institutions. It was recommended that the commercial banks should not extremely restrict because this can create information asymmetry and consequently it leads to the poor performance of the bank.

The CBK should not have a very high minimum capital requirements since it could act as barriers to market entry to possible new players that are not able to raise capital for the initial stages as a regulated institution.

Suggestions for Further Studies

The study focused on effects of government regulations on profitability of commercial banks in Kenya. More studies should be done on the effect of liquidity regulation ratio on financial performance of banks listed in Nairobi securities exchange.

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