EFFECT OF FINANCIAL SECTOR POLICIES ON COMMERCIAL BANK PERFORMANCE IN KENYA

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Effect of Financial Sector Policies on Commercial Bank Performance in Kenya

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DECLARATION

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

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This thesis has been submitted for examination with our approval as the University Supervisors.

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DEDICATION

This thesis is dedicated to my late father and mother who never lived long enough to see the academic achievement of their son. I also dedicate this work to my family,many were the times they missed my attention when I was preparing this thesis. Thank you very much for yourencouragement, support and prayers.

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ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlement
CA	Capital Adequacy
CAMEL	Capital Adequacy, Asset Quality, Management, Earnings and Liquidity
CBK	Central Bank of Kenya
CMA	Capital Market Authority
CRM	Credit Risk Management
DI	Deposit Insurance
FGLS	Feasible Generalised Least Square
FIs	Financial Institutions
FSI	Financial Stability Institution
GDP	Gross Domestic Product
IRM	Interest Rate Management
LM	Liquidity Management
NBFI	Non-Banking Financial Institution
OLS	Ordinary Least Square

Ph.D.	Doctor of Philosophy
P-value	Probability Value
ROA	Return on Assets
ROE	Return on Equity
S. E	Standard Error
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
US$	United States of America Dollar

DEFINITION OF TERMS

Financial sector policy	This is a form of government regulation, which subject banks to certain requirements, restrictions and guidelines (Mwongela, 2016).
Liquidity management policy	This is the ability of a financial institution to meet all legitimate demands for funds (Central Bank of Kenya, 2016).
Capital adequacy policy	This is the amount of capital a bank or other financial institution has to hold as required by its financial regulator. Capital Adequacy policy is a buffer in case ofadverse situation (Central Bank of Kenya, 2016).
Deposit insurance policy	This is a measure of a percentage of banks deposit to protect depositors, in full or in part, from losses occationed by a bank's inability to pay its debts when due it acts as financial system safety net that promotes financial stability (Kenya Deposit Insurance Corporation Act, 2015).
Interest rates management policy	This is the proportion of amount loaned which a lender charges as interest to the borrower, normally expressed as an annual percentage. It is the rate a bank or other lender charges to borrow its money, or the rate a bank pays its savers for keeping money in an account (Central Bank of Kenya, 2016).
Credit risk management policy	This is the identification, analysis and assessment, monitoring and control of credit, which has direct implications on a number of loans and advances extended to customers as well as on the level of non-performing loans (Central Bank of Kenya, 2016).
Commercial bank	A financial institution that provides services relating to as

	accepting deposits, mortgage lending, giving loansand basic investment products like savings accounts and certificates of deposit (Mwongela, 2016).
Bank Performance	This is the Return on Equity, which accounts for the impact of better financial soundness on bank risks bearing capacity (Ngumi, 2013).

ABSTRACT

Commercial banks and Regulatory Authorities have continued implementing various financial policies to enhance their solvency and performance. However, commercial banks have not identified all the policies influencing financial performance and to which extent they influence financial performance of commercial banks in Kenya. The purpose of the study was to investigate the effect of Financial Sector Policies on Performance of commercial banks in Kenya. The specific objectives of the study was;to examine how interest rate management policy affects performance of commercial banks in Kenya, to examine how Capital adequacy management policy affects the performance of commercial banks in Kenya, to investigate how liquidity management policy affects performance of commercial banks in Kenya, to establish how Credit risk management policy affects performance of commercial bank and to examine how Deposit Insurance management Policy affects the performance of commercial banks in Kenya. The study is anchored on liquidity preference, neoclassical and market power theories. Both primary and secondary data were used in the study. The research philosophy that was adopted for this research is that pursued by positivists and descriptive survey research design was applied. The population for secondary data were the 44 commercial banks in Kenya of which one was under statutory management. Panel data for 43 commercial banks that had data for 8-year period from 2010 to 2017 were obtained from the central bank of Kenya and banks website. For primary data, the target population was 172 respondents comprising Finance managers, risk managers, treasury managers and credit managers all were used in the study. Self-administered questionnaire was used. Descriptive statistics, correlation analysis, and random and fixed effects were used for secondary data using E-views software, while for primary data descriptive analysis and inferential where factor analysis, correlation and regression were used. The study rejects the null hypotheses that financial sector policies have no effect on financial performance of commercial banks in Kenya and finds out that liquidity, credit risk and interest rate have a positive effect on financial performance. It further indicates that deposit insurance and capital adequacy creates a financial performance lag on various commercial banks. The findings also revealed that Liquidity management policies which comprised of asset liability ratio and cash reserve ratio had the highest significance on performance of commercial banks in Kenya, therefore any commercial bank should have an effective liquidity management policy which unequivocally correlates with better bank performance. From the findings of the study, it was revealed that those commercial banks, which adhere to optimum liquidity ratio, maintained optimum cash ratio, maintained adequate risk based capital and lower levels of nonperforming loans recorded higher performance. The study therefore recommendation review of interest rate capping, and collaborations by commercial banks in liquidity management as a way of accelerating the penetration of liquidity and eventually avoiding liquidity crunch in the system.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The presence of an effective banking sector isessential for every economy in that it creates the necessary environment forthe growth of the economy and its development throughchannelingresources from a sector that has a surplus to a sector that has a deficit in the economy(Ekpung, Udede & Uwalaka, 2015). Commercial banks are financial intermediaries whose activities involve thecollection of savings and lending, thus providing a service between the lenders and borrowers.This fuels investment as well as international trade and balance of payments. In playing this important role of financial intermediation, the banking sector plays a critical role monetary policy of an economy, which relies on the control of money stock in order to influence financial and economic activities (Ekpung et al., 2015).

Commercial banks in Kenya and elsewhereplay animportant role in the allocation of resources in an economy. The banks continuously provide resources from depositors to investors. They do soto generate necessary income to cover the operational cost they incur. Therefore, for the sustainability of the intermediation function, it is necessary that banks become profitable. Beyond the intermediation function, the financial performance of banks has critical implications for theeconomic progressof countries. Soundfinancial performance brings rewards tostakeholdersfor their shares. This, in turn, emboldensadded investment that catalysesthe growth of the economy. In addition, poor banking performance can lead to failure of banks and crises which have negative outcomeson the economic growth. Thus, financial performance analysis of commercial banks has been of great interest to academic research since the Great Depression(Nyanga, 2012).

According to Central Bank of Kenya (2016), there are 43registered commercial banks in Kenya. Out of these,30 are owned domestically and the rest (13) are foreign owned. Foreign banks accounted for about 35% of banking assets in Kenya as of 2014. In Kenya, the commercial banks dominate the financial sector(Nyanga, 2012). Further, Nyanga (2012) argues that in a country where commercial banks dominate the financial sector, any disaster in the sector has an immense implication on the economic progress of an economy. This is as result of the fact that bankruptcy can cause contagion effect in the sector that can lead to bank runs, crunches and bring overall financial crisis and economic tribulations. In spite of the good overall financial performance of banks in Kenya, there are a couple of banks declaring losses (Nyanga, 2012). Additionally, the recent banking failures in the developed economiesand the resulting bailouts motivated this study in Kenya. Thus, to take defensive and mitigating measures, there is urgent need to understand the performance of banks and its determinants.

The extent to which financial sector policies influence financial and economic activities havebeen widely argued over the years, goes without saying that monetary policy affects the economic and financial performance of any economy (Ekpung *et al*, 2015). The magnitude of the effects and the conduits through which these effects are achieved are diverse;a large number of financial intermediaries are often apathetic towards channeling resources to productive investment even in the face ofhigh interest rates. A monetary policy that is expansionary often results in inflation rather than output growth. Investment fuelled by the banking sector is recognized as the spurfor attaining the twin goals of broad based viabledevelopment of the economy and alleviation of poverty as investment allows for employment creation and entrepreneurship opportunities that increase incomes for the poor and rich alike. Investment is created through internally generated funds such as profits, retained earnings, and financing from shareholders, or externally generated finances through private placement, public offerings of shares on the stock market (IPO's). Other sources of investment include short term financial sector credit (overdrafts, trade finance, debentures, mortgages, loans), long term capital raising from the secondary markets through corporate debt (preference shares, corporate and

infrastructure bonds), and finally foreign direct investment(Olweny & Chiluwe, 2012).

1.1.1 Global View of Financial Sector Policy and Commercial Bank Performance

Commercial banks exist because of the various services they provide to sectors of the economy, information services, liquidity services, transaction cost services, maturity intermediation services, money supply transmission, credit allocation services, and payment services. Failure to provide these services or a breakdown in their efficient provision can be costly to both the ultimate sources (households) and users (firms) of savings, as well as to the overall economy. The effect of a disruption in the provision of the various services on firms, households, and the overall economy when something goes wrong in the commercial banking sector makes a case for the need to monitor performance and market value and to impose regulations and sector policies that in turn affect bank performance and market value. For example, deterioration in a commercial bank's performance and value to the point that the bank fails may destroy household savings and at the same time restrict a firm's access to credit. Further, individual commercial bank failures may create doubts in savers' minds regarding the stability and solvency of commercial banks in general and cause panics and even runs on sound institutions. Although regulations may be beneficial to households, firms, and the overall economy, they also impose private costs that can affect the performance and market value of commercial banks.

Mercia (2004) argues that five types of financial sector policies seek to enhance the performance and value of commercial banks and thus the viability of the commercial banking industry. These include entry regulations and policies, safety and soundness policies, credit allocation policies, consumer protection regulations, and monetary policy regulations. Increasing or decreasing the cost of entry into a financial sector affects the performance and market value of firms already competing in that industry. Thus, the industries heavily protected against new entrants by high direct costs (e.g., through capital contribution) and high indirect costs (e.g., by restricting individuals who can establish commercial banks) of entry produce bigger profits for existing firms than those

in which entry is relatively easy.

Wheelock and Wilson (2009) examine issues associated with entry regulation and commercial bank performance. Specifically, this paper quantifies the regulatory, market, and financial characteristics that affect the probability of a bank engaging in mergers. The authors find that the regulatory approval process required for a bank merger is a real constraint on bank merger activity. For example, supervisory evaluations of bank performance and the quality of a bank's management significantly affect expected mergers. Further, in general the expected number of mergers falls with an increase in concentration of the market in which a bank is headquartered. In addition to defining who can and cannot establish a commercial bank, entry regulations define the scope of permitted activities under a given charter. The broader the set of financial service activities permitted under a given charter, the more valuable that charger is likely to be. Thus, barriers to entry and regulations pertaining to the scope of permitted activities affect performance and of a market value commercial bank.

Ely and Robinson (2010) examine issues associated with regulations pertaining to the scope of permitted activities and bank performance and market value. Ely and Robinson (2010) look at commercial bank versus investment bank underwriting of IPOs. Their findings are supportive of the passage of laws that increased the scope of banks activities (i.e., regulations that repealed the Glass-Steagall Act). Specifically, they find that commercial banks are no more likely to misprice IPOs than are traditional investment banks, and that the market reaction to mispriced IPOs is not greater for commercial banks than for traditional investment banks. Further, Ely and Robinson (2010) find no evidence that commercial bank shareholders or the public are exposed to greater risk when commercial banks are allowed to underwrite securities.

Ely and Robinson (2010) look at whether the expanded underwriting activities allowed to commercial banks has resulted in greater small business lending at banks with securities affiliates. They find that small banks (with assets less than US$1 billion) with a securities affiliate record lower portfolio proportions of small business lending than banks without a securities affiliate. For larger banks, the differences in small business lending proportions at banks with and without a securities affiliate are not statistically different.

However, large banks with securities affiliates' record significantly lower portfolio proportions of total small business loans. To protect depositors and borrowers against the risk of commercial bank failure, regulators have developed layers of protective mechanisms. These mechanisms are intended to ensure the safety and soundness of the commercial banks and thus to maintain the credibility of the bank in the eyes of its borrowers and lenders. In the first layer of protection are requirements encouraging commercial banks to diversify their assets. For example, banks are required not to make loans exceeding 10 percent of their own equity capital funds to any one company or borrower.

The second layer of protection concerns the minimum level of capital or equity funds that the owners of a commercial bank need to contribute to the funding of its operations. The higher the proportion of capital contributed by owners, the greater the protection against insolvency risk to outside liability claimholders such as depositors. The third layer of protection is the provision of guaranty funds such as the Bank Insurance Fund (BIF). By protecting claimholders, when a commercial bank collapses and owners' equity or net worth is wiped out, these funds create a demand for regulation of the insured institutions to protect the funds' resources. The fourth layer of regulation is monitoring and surveillance itself. This involves on-site examination as well as a bank's production of accounting statements and reports on a timely basis for off-site evaluation (Chen et al., 1986).

Chant et al. (1976) posits that while safety and soundness policies help ensure that the performance and market value of a commercial bank is sufficient to maintain its viability as an ongoing concern, these regulations are not without costs for commercial banks. For example, regulators may require banks to have more equity capital than private owners believe is in their own best interests thus, decreasing the market value of the bank. Similarly, producing the information requested by regulators is costly for commercial banks because it involves the time of managers, lawyers, and accountants. Again, the incurrence of these costs is sure to decrease the overall performance of the commercial bank.

Chen et al. (1986) examine safety and soundness protection via minimum capital requirements by looking at the passage of regulations advocating a mandatory subordinated debt policy especially for large banks. They find that over the period of time in which the Gramm-Leach-Bliley Act was passed, a portfolio of banks with relatively high amounts of subordinated debt experienced positive and significant wealth effects. Portfolios made up of all banks, and those with no subordinated debt, however, experienced statistically insignificant wealth effects. The results suggest that policymakers should indeed consider the use of subordinated debt as a way to enhance market discipline and thus the safety and soundness of commercial banks.

Stiglitz (2001) examine credit allocation regulations support the commercial bank's lending to socially important sectors such as housing, farming, and small business. These regulations may require a commercial bank to hold a minimum amount of assets in one particular sector of the economy or, alternatively, to set maximum interest rates, prices, or fees to subsidize certain sectors. Stiglitz (2001) examine differences in services provided by banks and other financial intermediaries as important for policy debates on bank credit allocation regulation. They find that the bundle of services (loan commitments and demandable deposits) that commercial banks offer makes them unique, and that access to deposit insurance assures banks a comparative advantage in providing these activities.

Specifically, the analysis indicates that commercial banks have a funding cost advantage over other financial intermediaries in offering loan commitments due to their access to fixed-price deposit insurance. Thus, commercial banks' access to deposit insurance and the Federal Reserve's discount window provides them with a competitive advantage in this form of credit allocation. Consumer protection policies are intended to prevent discrimination and other unfair practices in lending. For example, the Fair Credit and Charge Card Disclosure Act of 1988 requires credit card issuers to disclose the annual percentage rate, fees, grace period, and method of calculating balances in all solicitations and applications.

Consumer protection regulations are especially concerned about the assessment of unnecessary or unfair fees and charges for bank services as well as discrimination against commercial bank customers based on age, race, sex, or income. As the authors state, credit card interest rates have tended to be higher and stickier than other loan rates. Only over the past several years have these rates fallen. Some have argued that the decline in credit card rates is due to the reduction of consumer search costs. In contrast, Berlin and Mester present evidence that suggests that search costs are probably not the best explanation for the dropping credit card rates over the past decade. Rather, the results suggest that stricter disclosure regulations for credit card providers may have less of an effect on equilibrium interest rates than intended.

The special role banks play in the transmission of monetary policy from the Federal Reserve (the central bank in the U.S.) to the rest of the economy. The problem is that the central bank directly controls only the quantity of notes and coin in the economy whereas the bulk of the money supply consists of deposits. In theory, a central bank can vary the quantity of cash or outside money and directly affect a bank's reserve position as well as the amount of loans and deposits it can create without formally regulating the bank's portfolio. Through the early 1990s, the Mexican central bank publicly announced its monetary policies only three times per year. Because of many factors, including

mismanagement of the banking industry by the central bank, the Mexican economy collapsed in the early 1990s. In 1995, as part of an international aid package, the Mexican central bank was required to release weekly the details of its monetary activities, including changes to monetary policy regulations imposed on the banking industry.

1.1.2 Regional View of Financial Sector Policies and Commercial Bank Performance

Financial Sector policies are a form of supervision that subjects financial institutions to requirements,restrictions and guidelines that aim to maintain the intergrity of the financial system(Llwellynn,1999), Llewellyn further defines Financial sector policy as a set of specific rules or agreed behavior, either enforced by some government or other external agency or self-imposed by explicit or implicit agreement within the industry, that limits or enhances the activities and business operations of financial institutions.

Financial policies allow for a well structured financial systems.Governments and regulatory bodies ensure that the financial industry meets its objectives of intermediation through soundness and a stable system. Greenidge and McClean (2000) study on the impact of financial sector policy on commercial banks' profitability, the Barbadian case points out that the main functions of financial policy are to preserve the stability and soundness of the financial system; maintain an efficient and competitive system; channelling activities that would promote monetary and credit facilities; and to protect the deposits of the public. There are two main approaches to financial policy: first, to impose constraints on the supervisees so as to deter them from engaging in certain activities that entail excessive risk. Secondly, to provide financial firms with a set of incentives that would induce them to align their private objectives to social goals.

Financial policies are the rules and incentives by which market participants must behave, but without constituting a barrier to the natural development of the industry. Banking crisis could entail financial crisis, which in turn brings the economic meltdown as happened in the USA in 2007 (Marshall, 2009.) The reason as to why governments regulate the banking sector through their central banks is to foster a health and sound banking system which protect the depositors and avoids banking crisis inthe economy (Heffernan, 1996). Thus, toprevent the crisis, due attention was given to banking performance.

A more systematicstudy of bank performance in the 1980s applied Market Power (MP) and Efficiency Structure (ES) theories (Athanasoglou et al., 2005; Olweny & Chiluwe, 2012). Moreover, the hypothesis suggests that only firms with significant market share and well-differentiated portfolio (product) can win their competitors and earn a monopolistic profit.The policies which guide the financial sector can be broadly classified into two: Prudential policies and regulatory policies. Prudential policies ensure the safety and soundness of the financial system (financial stability) while regulatory policies deal with supervisory policies, Depositor and consumer protection policies, Financial inclusion policies, and Market structure and competition.

The Basel committee on banking supervision stresses the importance of supervision quality and independence in fostering a stable and well performing banking system. However, there are conflicting views about the benefits of stronger supervision. On the one hand, proponents argue that supervisors need significant resources and powers to prevent banks from engaging in undesirable activities and from taking excessive risks, especially in light of the growing complexity of banking activities. It is also paramount to ensure their independence. Under this view, better supervision fosters bank stability and efficiency. Chortareas et al. (2011) and Pasiouras et al. (2009) provide support to this view by showing that empowering supervisors leads to enhanced bank efficiency. But, Barth et al. (2010) conclude that this relationship holds only for independent supervisors.

In fact, offering supervisors more power in itself has no significant effect on bank efficiency while the independence and experience of supervisors are positively associated with enhanced efficiency. On the other hand, opponents argue that giving supervisors more power and independence fosters corruption because supervisors are mainly interested in increasing their own welfare. Under this view, supervisors use their power to extract favours from banks in the form of donations, bribes or loans for their own benefit or their entourage rather than seeking to improve global welfare. By pushing banks to make sub-optimal lending decisions, powerful supervisors cause reduced bank performance and efficiency. This view is supported by results reported in DemirgücKunt et al. (2011) who find that compliance with the BCP principle of official supervisory power leads to increased risk levels. Similarly, Barth et al. (2004) show that official supervisory power does not have a significant effect on bank development and performance. They also conclude that independent supervision has a rather weak effect on bank development and efficiency.

Deposit insurance schemes are expected to prevent bank overruns by making necessary resources available to support failing banks. This should translate into improved banking sector performance and stability. Yet, deposit insurance schemes are also likely to reduce the 6 incentive for depositors and creditors to perform effective monitoring and to institutionalize the liability of the government (Beck et al, 2011). This would cause banks to take excessive risks which could hinder banking sector performance and stability. Ioannidou and Penas (2010) find evidence in support of the moral hazard associated with the presence of deposit insurance schemes in the case of Bolivia. Likewise, Barth et al. (2004) show that a generous deposit insurance scheme increases the likelihood of occurrence of a major banking crisis. Similarly, Barth et al. (2010) show that deposit insurance schemes have a negative effect on banks' efficiency. Yet, Klomp et al. (2011) show that deposit insurance schemes do not have any significant impact on banks' risk.

1.1.3 National view of Financial Sector Policy and Commercial Bank Performance

The banking system is an important component to any financial market for their role in marshaling and allocating resources to investment projects with the greatest long term economic benefits (Muiruri, 2015). Moreover, it is widely accepted that the promotion of greater financial performance and economic stabilityrequires a well organized banking system, defined by its supervisory practices, risk taking, and governance (Muiruri, 2015). Kenya's Vision 2030 is supported by three pillars one being the economic pillar. The banking sector which falls under the economic pillar is identified as one of the six key sectors that are intended to move the economy up the value chain. The strategies taken by the banking industry should, therefore, be examined with the view to understanding the overal health of the financial system in Kenya (Muiruri, 2015). Kenya's financial system is currently constituted as follows: there is the Central Bank, commercial banks, the non-bank financial institutions, development finance companies funded mainly by the government and external development agencies, a National Social Security Fund, Insurance companies, Pension Funds and the NairobiSecurities Exchange (NSE).

Financial Sector Policies protect the soundness, financial health and stability of the institution by establishing an effective system of rules and guidelines that enable institution to operate in an environment that is safe without being exposed to adverse risk that will impact on the performance of the bank. Policies such as deposit insurance and capital requirement are meant to provide buffer to the institution. It is clear from research that commercial banks play a very crucial role in the allocation of economic resource of countries by basically helping to channel funds from depositors to investors in a continuous manner (Ongore & Kusa, 2013). Ongore and Kusa, (2013) note that "these commercial banks offer the all-important services of providing deposit and credit facilities for personal and corporate customers, making credit and liquidity available in adverse market conditions, and providing access to the nation's payments systems".

It is also noted that commercial banks are also the channels used to transmit effective monetary policy of the central bank of the economy thus it is considered that they also share the responsibility of stabilizing the economy of their country. The soundness of the banking sector in a country is very critical to the health of the country's economy.

Further agreeing to this statement, Katrodia (2012) argues that the banking sector and the economy of a country are closely related. On the other hand, it is important to note that the soundness of the commercial banks is largely dependent on their financial performance, which is normally used to indicate the strengths and the weaknesses of such a commercial bank. The financial performance of any business organization is normally evaluated by determining their profitability.

Generally, researchers note that the sustainability of a commercial bank is largely determined by its level of profitability. This is because these commercial banks must generate the necessary income in order to be able to cover their costs of operations that are incurred as they go about their work (Ongore & Kusa, 2013). It is also noted that it is out of these profits that the shareholders of the banks get their dividends from their investment and this encourages them to invest more in the bank thus ensuring a steady flow of investment funds for the bank and thus securing the future in terms of sustainability of operations (Ongore & Kusa, 2013).

Business entities normally remain in operation because they expect to make profits from their operations; therefore, in case the management confirms that they cannot achieve this goal, the only option that they remain with is to close shop and exit the business in order to avoid making a loss. Ongore and Kusa (2013) asserted, "Profit is the ultimate goal of commercial banks, thus all the strategies designed and activities performed are meant to realize this grand objective". They however, clarified that this does not mean that commercial banks or any other business entities are not guided by additional goals and objectives. They are also guided by goals such as social benefits as well as economic benefits.

Profitability is defined as the “the ability of the business organization to maintain its profit year after year”. Further, commercial bank profitability “is the efficiency of a bank at generating earnings”. Apart from ensuring that commercial banks operations are sustainable, profitability also has far much wider implications on the economy of the country as a whole. Researchers note that the profitability of any commercial organization contributes to the economic development of a country through the fact that the profits can be reinvested back into the business thus offering additional employment to the citizens hence increased revenue for the country through taxation (income tax and corporate tax) (Ayanda et al., 2013).

It is also noted that the profitability of any commercial organization leads to increased wealth for the investors through higher dividends that are paid, which in turn leads to improved quality and standards of living of the people. As presented in the discussion above, the profitability of commercial banks is very critical and therefore, poor financial performance of the banking industry of a country can result in serious negative impact on the growthand development of a country as well as the wellbeing of the citizens of that country (Ongore & Kusa, 2013). Many researchers in the banking sector and in the academic world have given their attention to the issue of performance of commercial banks because the banking industry is a major player in the economic development of a country. These studies have shown that the performance of commercial banks can be expressed or measured in various terms and these include competition, productivity, profitability, efficiency as well as concentration. Commercial banks that have better financial performance are considered to have better ability to resist any negative shocks from the external environment and thus are able to contribute to the stability of a country’s financial system (Athanasoglou et al., 2005).

Various Financial Acts such as The Companies Act, the Banking Act, the Central Bank of Kenya Act and various other prudential guidelines that have been issued by CBK over the years, govern the banking sector in Kenya. The banking sector in Kenya was liberalized in 1995 leading to the removal of exchange controls.

The CBK is responsible for formulating and implementing the monetary policy adopted by the Kenyan government and ensuring that there is liquidity, solvency and proper functioning of the financial system in the country. The entity also publishes valuable information related to the banking industry in Kenya and the non-banking financial institutions, as well as information about the interest rates prevalent in the country and other publications and guidelines. The Kenyan commercial banks have come together under an umbrella body referred to as the Kenya Bankers Association (KBA), which serves as a lobby body for the members' interests and addresses issues affecting the registered commercial banks in the country (CBK, 2013). The performance of commercial banks in Kenya has been influenced by various factors such as the prevailing economic conditions and the ownership structure. These determinants have influenced the performance in negative as well as positive ways depending on the management skills of the executives of the commercial banks (Ongore & Kusa, 2013).

The argument of Monyi (2017) in defence of government intervention into financial sector is that the government sponsors deposit insurance to protect microfinance from collapse. He further argued that government policies of the financial system should be abolished. However, the researcher disagrees with free or laissez-faire banking (or free banking) but focuses instead on how banks should be regulated to an existing non-laissez-faire structure to achieve best for both international and local demands.

Different financial policies were applied to commercial banks and NBFIs. For example, commercial banks were subjected to lower loan rate ceilings, higher liquidity requirements and limits on private sector credit expansion. They could not levy non-interest fees and service charges that were governed by a variety of prudential and liquidity requirements and were supervised more closely bythe CentralBank. With the different regulations, the NBFI sector expanded rapidly in the 1980s.

1.2 Statement of the Problem

Despite the undeniable importance of financial sector policies in explaining commercial bank performance, the impact of financial sector policies on bank performance is still misunderstood for two main reasons; first, there is inadequate understanding about the nature of some of the financial sector policies, and secondly, some of the policies' impact on commercial bank's performance remains lowly untested (Ngumi, 2013). The banking environment in Kenya has for the past decade undergone many regulatory and financial reforms. Suchchanges in capital requirement increase in liquidity crisis, introduction of credit reference bureaus to check credit risk, introduction of interest capping and deposit insurance policy has also undergone structural changes to capture wider coverage and possibility of making it risk-based.(CBK,2017). 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 and caused mergers and receiverships and liquidation of banks (Kamau, 2009). Previous studies like Monyi (2017), Mwania and Muganda (2011), Mwongela (2016) and Olweny and Chiluwe (2012) have produced mixed results regarding the impact of various financial policies on commercial bank performance. Monyi (2017) and Mwongela (2016), in their studies concluded that various financial policies had least impact on commercial bank performance, while Mwania and Muganda (2011) and Olweny and Chiluwe (2012) have concluded that financial policies had significant contribution towards commercial bank performance. It is such mixed conclusions that created and necessitated a study with a wider pool of policies to establish the effect of Financial Sector Policies on Commercial banks' performance.

Performance of Commercial banks in Kenya has grown impressively between years 2001 to 2015 where profit before tax grew from Kshs. 2.7 billion in 2001 to Kshs. 100 billion in 2015. During the same period, total income grew from Kshs. 61billion to excess of Kshs. 300 billion while total assets grew from Kshs. 425 billion to Kshs. 2.3 trillion (CBK, 2015). During the same period there were various policy changes such as

the increase in capital requirement, which affected the liquidity of banks, introduction of interest capping policy, whichhas been attributed to reduction in profitability of banks and Credit Reference Bureaus, which were meant to scan out bad lenders. But in the same period the amount of non-performing loans has been on the increase and hence increase in credit risk (KBA, 2017).Hence, the relationship between the changes in financial sector policies and commercial bank financial performance in Kenya needs to be studied. There is need to establish whether various reforms and changes in the financial sector policies have contributed to the changes in financial performance of commercial banks in Kenya.

Monyi (2017) while studying performance of deposit taking microfinance found out that there is insignificant relationship between liquidity and credit risk on financial performance of microfinance. Muiruri, Memba and Njeru (2015) in their study on effect of central bank regulations on performance of banks in Kenya tell more about central bank policies before reforms, but there are unanswered questions in the areas of deposit insurance, credit risk management and effects of interest capping. Mwongela (2016) studied the impact of various banking sector regulations and performance. The study found out that regulations contribute negatively to financial performance. Based on these studies there is conflicting findings, varying gaps in literature and changes in operating environment due to passage of time, hence the need to conduct this study.

1.3 Research Objectives

The study was guided by the general and specific objectives as outlined below.

1.3.1 General Objective

To determine the effect of financial sector policies on commercial banks performance in Kenya.

1.3.2 Specific Objectives

The study pursued the following specific objectives:

1. To determine the effect of liquidity management policy on commercial banks performance in Kenya.
2. To establish the effect of deposit insurance policy on commercial banks performance in Kenya.
3. To evaluate the effect of capital adequacy policy on commercial banks performance in Kenya.
4. To assess the effect of credit risk management policy on commercial banks performance in Kenya.
5. To analyze the effect of interest rate management policy on commercial banks performance in Kenya.

1.4 Research Hypotheses

This study sought to address the following research hypotheses:

H0: There is no significant effect of liquidity management policy oncommercial banks performance in Kenya.

H0: There is no significant effect of deposit insurance policy on commercial banks performance in Kenya.

H0: There is no significant effect of capital adequacy policy on commercial banks performance in Kenya.

H0: There is no significant effect of credit risk management policy on commercial banks performance in Kenya.

H0: There is no significant effect of Interest rate management policy on commercial banks performance.

1.5 Justification of the Study

This study is important in that it sheds light on the effects of financial sector policies on banking sector development. It contributes to the existing literature on economic reforms in Kenya. The results can be useful in designing effective policy programs that can propel economic performance to achieve the desired level of development through the banking sector. The study provides an insight to the policy makers on the choice of reforms programs. It also provides guidelines for the implementation of such reforms to promote robust economic performance.

In addition, the study creates an understanding of the different category of variables and how they affect the overall welfare of different economic agents. This is desirable in the budget making process since it can be used as a guiding principle when allocating national resources under different votes. The study contributes to the body of knowledge on the effectiveness of financial sector policies in achieving sustainable economic growth. It also provokes researchers to evaluate the effectiveness of different government policies in order to prescribe or suggest to the policy makers the best course of action for achieving economic goals.

Theoretically, the research not only summarizes the literature on the financial sector policies and financial performance of commercial banks, but it also bridges the gap between theory and practice of financial policy evaluation by analyzing the various models and the interrelationships that exists within the policies themselves. This is critical in identifying empirical gaps, which form the foundation for recommending areas for further research in the context of financial performance in commercial banks. The research also lays out the current theoretical and empirical perspectives on financial policies in various regulatory regimes. This is instrumental in stimulating studies in areas relating to financial performance and financial sector policies.

Credit creation by commercial banks is one of the important and major source used in generating substantial and sustainable income. The banks serve as an intermediary between the households and the economy (finance sector); therefore, the best financial system is one with efficient intermediation and credit growth through the credit creation process. The study is important to various stakeholders who including the banking sector, financial managers, investors, savers, policy-makers, government regulators and business scholars who may want to further their knowledge.

1.5.1 Financial Institutions

Commercial banks in Kenya play a significant role in the economy; they serve as an intermediary between the households and the finance sector, therefore, the best financial system is that which the mediator performs efficiently.

Kiilu and Ngugi (2014) looked at effect of interest rate spreads and profitability of banks and they found a negative relationship between the interest rate spread and profitability of commercial banks. This is because potential savers are discouraged due to low returns on deposits and thus limits financing for potential borrowers and investors. This scenario hampers credit creation activities that the researchers' studies did not concentrate on adequately. Mwega (2011) found that capital requirements help in lessening the chances that banks will become insolvent if sudden shocks occur. However, the study did not concentrate much on the effects of capital adequacy on the credit creation process. Suka (2011) in his study on the effect of capital adequacy on performance of commercial banks observed a positive influence that banks with adequate capital performed better than their counterparts with less capital did.

1.5.2 Policy Makers

The government of Kenya through its policies influence the investments in various types of products and industries, thus the study can assist in pointing out the areas that need incentives to attract more capital flow, savings and investments. The regulators play a major role in theformulation of regulations and ensuring compliance, hence the findings of this study have the potential of ensuring the development of policies or regulations that can ensure the stability of banks for profitable operations.

This study can be of help to the government of Kenya and policy makers as they seek to create a conducive environment and designing of policies to strengthen and inspire confidence across all categories of investors to build an economy that is inclusive. One of the key drivers of growth in a developing economy is inclusion of both large and small-scale investors in mobilizing the scarce resources. Through the findings of the study, the government of Kenya is able to appreciate mobilization of resources across the divide by all categories of investors in support of economic development to achieve the vision 2030 by either reducing information asymmetry or increasing investors' awareness campaign through trainings workshop and seminars.

1.5.3 Academicians and Researchers

This study adds to theprogress of academic literature and theory by providing empirical evidence in this field of study. It provides the basis for additional research on how other regulation indicators such as exchange rates, taxation impacts on the credit creation process by commercial banks. Finally, it is important to the researcher and other scholars in understanding impact of capital adequacy requirements in the context of commercial banks' credit creation.

1.5.4 Financial Regulatory Bodies

Regulatory bodies such as Capital Markets Authority, Central Bank of Kenya, Insurance Regulatory Authority and Retirement Benefit Authority can use the study findings to; improve on the framework for regulation to make a level platform for all categories of investors through enhancing the financing capabilities of the banking industry. The Nairobi Securities Exchange (NSE) and Capital Market Authority (CMA) can use the study findings to regulate the operations of listed commercial banks in the exchange by developing and adopting policies to enhance confidence to small investor and public at large on their investments and boost equality and stability of the economy. Financial advisors can use the findings to advice and direct their clients to invest in companies that will yield highest returns on their investments.

Activities of securities market affect investment patterns, which have an impact on the overall performance of the economy, and therefore the findings of the study can provide an insight to the Government and NSE on how different ownership structure causes the market to react through adjustment in stock prices and their effect on corporate financial performance. This can result to devising of the appropriate ownership structure threshold for better market valuation through share price change.

1.6 Scope of the Study

The study focused on the role of financial sector policies on the financial performance of commercial banks in Kenya.The choice of the banking industry was because it has been earmarked as a key pillar to the achievement of Kenya Vision 2030and makes a significant contribution to the Gross Domestic Product (GDP). Furthermore, the study chose on the banking industry because of its importance in the growth of the economy. The financial sector policies that were chosen is because they have been found to impact performance and some have been missing in past studies. Commercial bank environment has undergone numerous changes such as interest capping. Besides, despite the fact

that many factors affect commercial bank performance, recent literature particularly in Kenya interrogates only a few of these factor. Hence, this study dealt with more of the factors, but limited itself to liquidity management, capital adequacy, credit risk management, deposit insurance and interest rate management and their effects on financial performance of 43 registered commercial banks in Kenya from 2010 to 2017. The period 2010-2017 was chosen because it is the most current and a number of changes in financial sector policies occurred during the period. The financial performance measures used are, income, profit before tax, return on assets and customer deposits. Data collection for the study was conducted in the year 2017. The study utilized both primary and secondary data.

1.7 Limitations of the Study

The major constraints that were encountered in this study were restrains and confidentiality from the respondents to the questionnaire as most banks consider some information as confidential and hence were not willing to reveal most of it. To overcome these limitations, the study used a letter of introduction from the university to assure the respondents that the information provided was used for academic purpose and to be treated with confidentiality. The study experienced an initial slow response from the respondents who complained about the length of the questionnaire. This was mitigated by having constant follow up on phone and physical visits to the respondents' offices by using research assistants.

Secondly, the researcher-encountered challenge in use of self-administered questionnaires it was a limiting factor in terms of understanding of the questions for which answers were being sought. However, to some extent the risks involved was reduced by use of multiple informants from each respondent. The questionnaire is a self-reporting instrument, and some respondents had difficulties in understanding the questionnaire's format. In the current study, several questionnaires were filled in incorrectly. This was despite the instructions, which appeared at the top of the questionnaire. Having observed this problem, the researcher gave instructions that are

more detailed to the respondents and no respondent henceforth filled the questionnaire incorrectly.

One of the major limitations of this study was cross-sectional research design in collection of primary data. Therefore, conclusions about the directions of causality implied in the model cannot be drawn. Thus, relationships among variables must be interpreted with caution. Interpretations of models using structural equation modelling are also not proof of causality. This was checked by use of secondary data, which was enhanced and longitudinal nature hence causal relationships could be inferred.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents theoretical framework, critical reviews, conceptual framework and research gaps concerning the study of financial sector policies and commercial banks performance.

2.2 Theoretical Framework

A theory is a reasoned statement or group of statements, which are supported by evidence meant to explain some phenomena. A theory therefore, is a systematic explanation of the relationship among phenomena. Theories provide a generalized explanation to an occurrence. Therefore, a researcher should be conversant with those theories applicable to his area of research (Kombo and Tromp, 2009; Smyth, 2004). Theoretical literature provides the researcher a clear view of the variables of the study; provides a general framework for data analysis; and helps in the selection of applicable research design. The following theories have been used.

2.2.1 Liquidity Preference Theory

Keynes (1935) believed there were three motives to holding money; transactions motive, precautionary motive, and speculative motive. Under the speculative motive, money demand was negatively related to the interest rate consequently leverage. Holding money was one way of guarding against uncertainty. Hence, liquidity preference framework determines the equilibrium interest rate in terms of supply and demand for money. The model was developed by Keynes (1936) based on several assumptions. First, money pays no interest. Second, that there were only two kinds of assets for storing wealth: money and bonds.

The current study was anchored on liquidity theory, given its emphasis on Liquidity, and the other variables under study; leverage, efficiency and capital adequacy. The theory notes clearly that liquidity alone does not guarantee success. Financial institutions in Kenya such as Daima Bank, Trade Finance, Allied credit ltd, International Finance ltd, Nairobi Finance ltd, Inter Africa Credit and Finance ltd and Dubai Bank that collapsed and liquidated while imperial Bank was put under receivership and chase was under statutory management for a short while as at 31st December 2015. These institutions' liquidity was high in the year when their businesses went into liquidation or when they went into statutory management.

The theory through its concept of holding money as a precautionary motive explains the importance of capital adequacy and liquidity requirement of ensuring that any future financial distress is properly managed. In addition, Modigiliani (2011) defined liquidity as an asset in terms of the perfection of the market in which it is traded. An asset is liquid if a market is perfect thus an individual decision to buy or sell does not affect the price finitely since it is illiquid in the opposite case, it is riskless if the price at which it sells is constant or practically so and its risky if the price fluctuates widely (Modigiliani, 2011).This theory therefore indicates that liquidity, capital adequacy, leverage and efficiency of the firm's liquidity are the key financial distress factors that may influence financial performance.

2.2.2 Theory of Financial Intermediation

This theory was advanced by Akerlof, Benson and Diamond (1980) among other proponents who viewed financial intermediation as a combination of institutional tool and market satisfying needs of different economic entities whose main aim is to accumulate money from public and legal entities and give it to borrowers on commercial conditions hence exposure to financial risk (Rayberg, 2002). It was based on minimizing costs necessary for stimulation of behaviour of borrowers in creditors' interest (Sharp *et al.*, 2011).

Ukrainian scientists Vishnevsky and Matyushkin (2008) showed that financial intermediation is a modification of traditional theory that described functioning of banks using prices, quality, quantity and temporal information of assets, which was due to invention of financial innovation. The financial intermediation tends to overlook the traditional function of banks in transfer of risk and explaining little why intermediation should perform such function (Sharp, Alexander & Bely, 2011). The traditional theory of financial intermediation was based on transaction and information approach. The major factor used in financial intermediation is grounded on information asymmetry and it's based on the type moral hazard or adverse selection which requires costly verification and also auditing procedures. Information asymmetry generates imperfection of the market.

Perfect financial markets in the neoclassic theory tend to show that no individual can influence the prices, there are no transaction costs, borrowing conditions are identical and all investors have homogeneous expectation (Rayberg, 2002). Studies on information asymmetry approach especially the problematic relationship of the bank and depositor; special attention was given to factors that make depositors to withdraw their money from bank which consequently the leads to liquidity problems hence liquidity risk.

The next approach was based on the method of regulation of monetary creation of saving and financing the economy, the method of regulation, which influences the solvency, and the liquidity of intermediaries hence ability of refining and recovery of debts (Diamond & Rajan, 2000). Depositors face liquidity risk from perception of requiring liquid funds. The trade-off between liquidity and profitability make them to hold their funds in form of deposits, though according to Diamond model depositors do not have prior knowledge on when they will experience liquidity risk. In order to provide depositors liquid assets banks are required to sell more profitable and less liquid assets thus reducing profit opportunities if many depositors withdraw their funds, other

customers may follow suit a behaviour referred to as bank run hence exposing the banks to liquidity risk (Allen & Alexander, 2009).

Fama (1980) developed the third approach founded on transaction cost, which was based on differences on technologies used. Transaction cost include transfer cost, cost for research evaluation and monitoring thus the role was to transform the characteristic of financial assets offering them with liquidity and opportunities for placement. Financial intermediaries a voids wasteful duplication of audit cost on part of all creditors. On the other side loan commitment may reduce borrowing rate hence reduction in interest rate hence profits and this can reduce moral hazard on the borrowers' side and providing basis for debt renegotiation (Rayberg, 2002).

Schollens and Van (2000) argue that intermediation reduces participation costs but the world has experienced direct participation of the public in financial markets. Proponents of this theory posit that there has been a reduction in trading costs which enabled direct participation of house-holds. Intermediaries in their duty of risk management does not explain the dramatic rise in mutual funds and wide spread use of financial derivatives (Sharp *et al.,* 2011). The most important rationale of financial risk management is the prevention of bankruptcy of a firm induced by monetary and financial factors, which targets the firms' balance sheet against severe losses of monetary nature and uncertainties like interest rate risk, exchange rate risk, and credit risk (Schollens & Van, 2000). The amended theory reflects the market as dynamic, coupled with products innovation and financial transformation, viewing financial intermediaries as entrepreneurial providers of financial services with customer orientation for both borrowers and savers with risk management taking the central stage.

2.2.3 Trade off theory

Modigliani and Miller (1963) argued that the tax code favors debt over equity financing by allowing the firm's interest expense to be deducted from gross income for corporate tax purposes, but disallowing deductibility of payments to equity holders(e.g., dividends

are not tax deductible on the personal account). Since an additional dollar of debt generates the marginal benefit of a tax deduction without any offsetting cost in this framework, the firm value is maximized by utilizing as much debt as possible to finance corporate investment decisions. Other financial economists, such as (Kraus & Litzenberger, 1973), suggested that the costs of financial distress might provide reconciliation between the observed limits on the usage of debt and the predictions of the tax-adjusted Modigliani-Miller analysis of financial policy.

Eckbo (2008) suggested that an increase in the costs of financial distress reduces the optimal debt level, an increase in non-debt tax shields reduces the optimal debt level and an increase in the personal tax rate on equity increases the optimal debt level. At the optimal capital structure, an increase in the marginal bondholder tax rate decreases the optimal level of debt (Eckbo, 2008).The effect of risk is ambiguous, even if uncertainty is assumed to be normally distributed. Eckbo (2008) further concluded that the relation between the debt ratio and volatility is usually negative.

The intuition provided for the existence of finite, optimal capital structure is straightforward. Debt capacity is inadequate because corporations trade-off the tax savings generated by the deductibility of interest payments against the expected value of the costs incurred in the event of bankruptcy (Kraus & Litzenberger, 1973). Senbet (2012) suggested that if corporate bankruptcy was costly, then it filled an important void between the corner result of the Modigliani-Miller tax-adjusted model and the observed limitations on the amount of debt financing employed in practice (Senbet et al., 2012). The trade-off theory asserts that leverage has potential benefits to the firm due to tax savings associated with use of debt. However other studies have noted that with higher leverage, volatility of share prices increases with respect to private information; the ultimate fate of the firm depends on issues unknown to the general public (Nyamboga, Omwario & Muriuki, 2014).

2.2.4 Neoclassical Theory

Interest Rate Management policy was explored through Neoclassical Theory where the theory focuses on the optimal rate of return that can be charged and the rent thereof. Pareto (1974) advanced this theory. Like the Classical economists before them, neoclassical economists sought answers to the burning political questions of their time. In the case of the Classical economists the issue was the distribution of power between property owners and industrialists; the issue that Neoclassical economists dealt with was the distribution of power between industrialists and workers. Classical economics was squarely on the side of workers'. The profit that a capitalist receives is the "residual" that remains after the capitalist pays the cost of replacing the capital that has been used in production and the cost of labour. In other words, workers produce value and this value-added are the source of both the workers' wages and the profit of the capitalist. Ricardo assumed that workers are paid a subsistence wage, and that the rest of the value-added is the capitalist's profit. Nevertheless, if the profit is just a residual, there is no reason why it cannot be lowered in order to raise the standard of subsistence. Furthermore, if unions were successful at raising workers' wages, society as a whole would benefit because according to the theory of Utilitarianism that was developed by another classical economist, Jeremy Bentham, economic efficiency means income equality, and as pointed out by Karl Marx, what is considered subsistence is not determined by biology alone, it has changed throughout history according to the relative strength of employers and workers.

Neoclassical economics argues that Ricardo's conception is wrong, that is, profit is not a residual. Profit is determined by the level of the marginal productivity of capital, and the wage of workers is determined in a similar way by the marginal productivity of labor. Therefore, according to neoclassical economics, if a union succeeds in raising the workers' wage, the inevitable result will be unemployment. In tandem with this new theory of wages and profits, Pareto first dismissed the theory of Utilitarianism which called for redistributing income, and then developed a new definition of economic

efficiency to replace it. According to Pareto's definition, the higher union wage results in economic inefficiency. Although entirely different from Ricardo's theory of profits and wages, the neoclassical theory of profits and wages is an application of another of Ricardo's theories, that of land rent, and this is how Neoclassical economics got its name. According to Ricardo, parcels of land differ in their fertility. The most fertile land is put into production first, and as agricultural production expands, less and less fertile parcels are added; the rent for less fertile parcels is lower than the rent for more fertile land. Neoclassical economists argue that the process of adding labor and capital when industrial production is expanded is similar. As industrial production expands, additional workers are hired (while the quantity of capital is held constant) and, exactly as the fertility of additional units of land in agriculture falls, Neoclassical economics assumes that the productivity of each additional worker, which is her marginal product, diminishes.

Joan Robinson and John Eatwell (1973) pointed out that Ricardo assumed that the marginal product of a worker could not be separated from the marginal product of the capital that she uses. For example, a limousine service will not hire drivers without cars or cars without drivers. If the wage of a limousine driver was to increase, the owner of the limousine service would have to content herself with a smaller profit or she would have to idle not only drivers but also limousines. In fact, because in a perfectly competitive market the price of each ride is the same, the choice of the owner is either a smaller profit or closing down the business without any profits at all.

Productivity of capital and laborare inseparable. Production often involves teams, and the contribution of each team member, whether it is a worker, a manager or a machine, cannot be measured separately from the productivity of the rest. The classical economists believed that the process of production itself could not determine the division of the social product between those who produced it. It does not appear that the neo-classical economists succeeded in proving them wrong. Wages, profits and executive pay are not determined by the technology of production, but by a political

struggle of everybody against everybody else. Future research should explain how the outcomes of such struggles are determined, and how these mechanisms may be improved (Adler, 2003). In this study, this theory explains interest rate management policy; this is where the cost of funds is determined by the demand for funds and supply.

2.2.5 Market Power Theory

Commercial bank performance was analyzed through the Market Power theory, which posits that the performance of a bank is influenced by the market structure of the industry. There are two distinct approaches within the market power, the level of concentration in the banking market gives rise to potential market power by banks, which may raise their financial performance. Banks in more concentrated markets are most likely to make “abnormal profits” by their ability to lower deposit rates and to charge higher loan rates as a results of collusive (explicit or tacit) or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency (Tregenna, 2009). Unlike the Efficient Market Hypothesis, which posits that, bank financial performance is influenced by market share. It assumes that only large banks with differentiated products can influence prices and increase profits. They are able to exercise market power and earn non-competitive profits (Tregenna, 2009).

A bank with market power has the ability to individually affect either the total quantity or the prevailing price in the market. Price makers face a downward-sloping demand curve, such that increase in price leads to a lower quantity demanded. The decrease in supply because of the exercise of market power creates an economic deadweight loss, which is often viewed as socially undesirable. As a result, many countries have anti-trust or other legislation intended to limit the ability of banks to accrue market power. Such legislation often regulates mergers and sometimes introduces a judicial power to compel divestiture’s firm usually has market power by virtue of controlling a large portion of the market. In extreme cases monopoly and monopsony, the firm controls the entire market. However, market size alone is not the only indicator of market power.

Highly concentrated markets may be contestable if there are no barriers to entry or exit, limiting the incumbent firm's ability to raise its price above competitive levels. Market power gives firms the ability to engage in unilateral anti-competitive behavior. Some of the behaviours that firms with market power are accused of engaging in include predatory pricing, product tying, and creation of overcapacity or other barriers to entry. If no individual participant in the market has significant market power, then anti-competitive behaviour can take place only through collusion, or the exercise of a group of participants' collective market power. This theory is connected to the depended variable of financial performance; the more market a bank controls the higher its financial performance.

2.3 Conceptual Framework

A conceptual framework is very important in any research study being undertaken. It shows the relationship between the dependent variables and the independent variable (Kotter, 1995). This study addressed five financial sector policies, that is, liquidity management policy, capital adequacy policy, deposit insurance policy, interest rate management policy and credit risk management policy. In addition, the relationship between these policies and performance of the banking industry was analysed. A conceptual framework was drawn to show the link between the dependent and the independent variables. The efficient market hypothesis theory and liquidity preference theory guided this study.

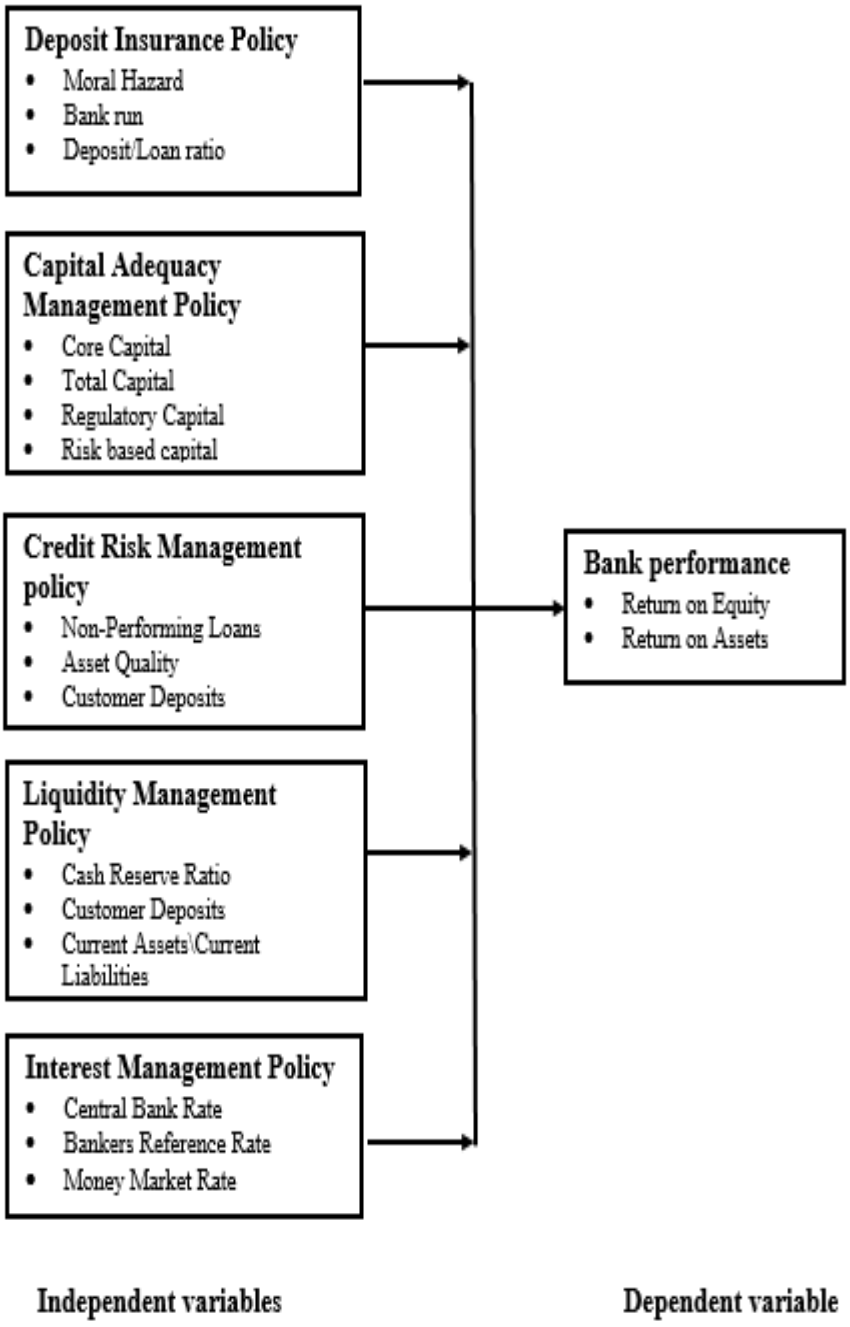

Figure 2.1: Conceptual Framework

2.3.1 Credit Risk Management Policy

Credit risk is the current or prospective risk to earnings and capital arising from an obligor's failure to meet the terms of any contract with the bank or if an obligor, otherwise, fails to perform as agreed. Credit risk arises from the possibility of losses associated with reduction of Credit Quality of borrower's or counterparties. Credit risk refers to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily to the lender and includes lost principal and interest, disruption to cash flows, and increased collection costs. The loss may be complete or partial and can arise in a number of circumstances. Risk management framework is important for commercial banks (CBK, 2013). Where commercial banks do not have an indication of what proportion of their borrowers will default, earnings will vary thus exposing the banks to an additional risk of variability of their profits.

Every financial institution bears a degree of risk when the institution lends to business and consumers and hence experiences some loan losses when certain borrowers fail to repay their loans as agreed. Principally, the credit risk of a bank is the possibility of loss arising from non-repayment of interest and the principle, or both, or non-realization of securities on the loans (CBK, 2013). To minimize credit risk, banks are encouraged to use the "know your customer" principle as expounded by the Basel Committee on Banking Supervision (Demirgüç-Kunt & Detragiache, 1997). Knowledge of the customer means that credit shall be granted only to those customers' whom the commercial bank fully understands their business operations. Knowledge of the customer must extend beyond data relating to the customer alone and cover all aspects which can influence credit risk, both qualitative and quantitative in nature (CBK, 2013).

Subjective decision-making by the management of banks may lead to extending credit to business enterprises they own or which they are affiliated, to friends, to persons with a reputation for non-financial acumen or to meet a personal agenda, such as cultivating special relationship with celebrities, politically exposed persons or well-connected

individuals. A solution to this may be the use of tested lending techniques and especially quantitative ones, which filter out subjectivity. The CBK developed risk management guidelines for the purpose of providing minimum direction to banks on risk management and create a working framework befitting international best practices which require banks to have a fully independent credit risk management responsible for capital adjustment and provision for escalating non-performing loans (CBK, 2013).The credit risk management function in banks needs to be a robust process that enables the banks to proactively manage the loan portfolios to minimize the losses and earn an acceptable level of return to its shareholders (Kimeu, 2008). The importance of credit risk management is recognized by banks for it can establish the standards of process, segregation of duties and responsibilities.

2.3.2 Capital Adequacy Management Policy

Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience. The determinants of capital adequacy for banks are usually taken to mean the available capital held by the banks for its smooth operation. Capital adequacy influences the bank performances which enhances its profitability. However, Modigliani and Miller (1958) in their study indicated that perfect financial markets, capital structure and capital regulation is irrelevant due to hindrance to flexibility in the financial market. On his part, Mathuva, (2009) analyzed factors determining adequacy of capital in commercial banks and found that asset size, growth, and profitability are the key determinants of capital adequacy. Therefore, capital adequacy is a function of size and growth factors, which vary in their influence according to growth conditions and policies affecting structure.

Myers (1984) examined different capital adequacy theories. He found that drivers of firms' decisions to choose debt, equity or hybrid securities are still unknown. The findings in Myers's article challenged researchers to explore this puzzle further. Chonde (2003) revisited this puzzle and found that "debt ratios provide an inappropriate

framework for empirically examining the trade-off theory of capital adequacy". In particular, they explained that debt (or debt to-equity) ratios are misguided and lead to poor and inconsistent results when examining the determinants of corporate capital adequacy. Gonzalez and Gonzalez (2008) revisited the capital-adequacy studies and concluded that different capital adequacy leads to different and diametrically opposed decisions and outcomes.

The nature of the economy, the environment provided by government, and the nature of the banking system also affects capital adequacy. In his study, Gaitho (2013) show that too tight a capital regulation lead banks to reduce their credit offer and, as a result, a fall in productive investment. They argue that, from society's viewpoint, the optimal level of capital for the banking system should be determined by the point at which the marginal public returns to bank capital. Under some legal and political structures, however, regulators may not consider the social costs and, therefore, will require more capital in the system than society may desire. Glyn (2013) explained the dramatic decline in capital to asset ratio in the U.S commercial banks during the last two decades. He hypothesized that the rise in nominal interest rates might have contributed to the fall in capital ratios, time series-cross section estimation supports the hypothesis regarding the interest rate.

Olweny and Chiluwe (2012) utilized a unique comprehensive dataset, drawn from the 1999 baseline survey of some 2000 micro and small-scale enterprises (MSEs) in Kenya to analyse the financing behavior of these enterprises within the framework of a heterodox model of debt-equity and gearing decisions. The study found that measures of the tangibility of the owner's assets, and the owner's education and training had a significant positive impact on the probability of borrowing and of the gearing level.

Kuria (2010) using a panel of listed firms in Ghana, Kenya, Nigeria, South Africa and Zimbabwe investigated corporate capital structure in Africa, with emphasis on the extent to which firm characteristics and cross-country institutional differences determine the

way firms raise capital. Results supported the pecking-order postulate. Firms' profitability, size, asset tangibility and age, related significantly to leverage; thus suggesting that remedies for inadequate institutional infrastructures were important determinants of corporate capital structure in Africa.

2.3.3 Liquidity Management Policy

Liquidity is simply the ease with which assets of banks can be cashed in times of need or its fair value. It is that quality of an asset, which enables a bank to respond to any financial situation requiring an urgent infusion of money. Liquidity is required to meet regular financial obligations of the bank especially without dipping into its reserves. When banks hold high liquidity, they do so at the opportunity cost of some investment which could generate high returns. The trade-offs that generally exist between return and liquidity risk are demonstrated by observing that a shift fromshort-term securities to long-term securities or loans raises a bank'sreturn but also increases its liquidity risks and the inverse is true. Thus a high liquidity ratio indicates a less risky and less profitable bank.

Liquidity indicates the ability of the bank to meet its financial obligations in a timely and effective manner. There are variations among scholars with regard to the measurement ratios. The most common financial ratios that reflect the liquidity position of a bank according to Samad (2004) are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance, Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia.Another important decision that the managers of commercial banks take refers to the liquidity management and specifically to the measurement of their needs related to the process of deposits and loans. The importance of liquidity goes beyond the individual bank as a liquidity shortfall at an individual bank can have systemic repercussions (CBK, 2009). It is argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns (Kamau, 2009).

Liquidity is the degree to which debts obligations coming due in the next 12 months can be paid in cash or assets that will be turned into cash. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a bank according to the above author are customer deposit to total asset and total loan to customer deposits. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said & Tumin, 2011). Initially solvent financial institutions may be driven towards closure by management of short-term liquidity. Indicators should cover funding sources and capture large maturity mismatches. The mismatching and controlled mismatching of the maturities and interest rate of assets and liabilities is fundamental to the management of commercial banks.

2.3.4 Interest Rate Management Policy

Although it is difficult to prove the direction of the relationship between interest rates and profitability, interest rates instability generally has an effect with financial performance of commercial banks. High interest rates will lead to increased commercial banks interest income but also lead to low demand for the loans and hence crowding out the increased interest income. Without interest rates stability, domestic and foreign investors will stay away and resources will be diverted elsewhere. In fact, econometric evidence of investment behaviour indicates that in addition to conventional factors (past growth of economic activity, real interest rates, and private sector credit), private investment is significantly and negatively influenced by uncertainty and macroeconomic instability. In addition to low (and sometimes even negative) growth rates, other aspects of macroeconomic instability can place a heavy burden on the commercial banks leading to reduced profitability.

Chen, Roll and Ross (1986) maintains that these macroeconomic factors are significant in explaining firm performance (profitability) and subsequent returns to investors. Simon (1997) found that exchange rate and current account have direct and positive

relationship with inflation and both exchange rate and current account are the key factors that badly affect the small economies.

Chen, Roll and Ross (1986) points out that deteriorating local economic condition, for instance, low GDP, inflation, interest and exchange rate cause bank failure. In conclusion, interest rate volatility is expected to affect financial performance of commercial banks whose role in an economy is the economic resource allocation where they channel funds from depositors to investors. Banks can only perform this vital role, if they generate necessary income to cover the operational cost they incur in the due course. Although it is difficult to prove the direction of the relationship between interest rates and profitability, studies confirm that interest rates instability has generally been associated with poor commercial banks financial performance in elastic loan markets since high interest rates reduces the demand for loans.

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets. Interest can be thought of as "rent of money". Interest rates are fundamental to a capitalistic society and are normally expressed as a percentage rate over the period of one year. Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation. Interest rates are derived from macro-economic factors which is the study of the behavior of the economy as a whole, such as total output, income, employment levels and the interrelationship among diverse economic sectors. These macro-economic factors include economic growth captured by gross domestic product (GDP), interest rates, exchange rates and inflation rates. Interest rates are worsened by regulations imposed on banks.

The effect of macro-economic factors in other sectors of the economy will always affect the banking sector and what goes on in the banking sector will affect the other sectors of the economy. Inflation and inflationary expectations can press interest rate upward which affects lending terms resulting to reduced credit demand and lending ability of

commercial banks. Exchange rates affect interest rates and have an indirect impact on profitability through cost of loanable funds. High exchange rates lead to increased value which commercial banks get from selling foreign currency resulting to increased profitability.

Studies have found positive relationship between exchange rate and bank loan loss. It may reflect how fluctuation and volatile exchange contribute to the debt profile of banks and reduce the profit level of borrowers (Macharia, 2013). GDP is the measure of economic activity of a country. Increased economic activities increase the demand for loanable funds which in turn drives up the exchange rates. Decline in GDP result to reduced interest rates and fall in profitability of commercial banks and asset prices, leading to non-performing loans, lowers borrower's financial capacity and depresses the value of collaterals as secondary means of servicing debts.

The main role of commercial banks in an economy is the economic resource allocation. The banks channel funds from depositors to investors continuously. They can only perform this vital role, if they generate necessary income to cover for their operational. In other words, for sustainable intermediation function, banks need to be profitable. Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries. Good financial performance rewards the shareholders for their investment. This, in turn, encourages additional investment and brings about economic growth. On the other hand, poor banking performance can lead to banking failure and crisis which have negative repercussions on the economic growth.

2.3.5 Deposit Insurance Management Policy

To protect both banks, depositors and the financial system, many countries have introduced deposit insurance systems, which cover deposits in the banks, sometimes designed with a limit on the maximum amount covered (Barth, Caprio & Levine, 2013). These systems exist in two major forms, implicit and explicit systems. Implicit systems

are characterized by the fast that governments through their actions or previous history show that they will guarantee the losses of depositors and maybe creditors if a bank goes into bankruptcy. However, implicit deposit insurance systems can never be expected to apply in all specific cases; this section concentrate on explicit deposit insurances.

Deposit insurance systems have become such a used measure for protecting financial systems against sudden financial panic that it has become a principal feature of policy advice given to developing countries by external experts. Furthermore, within the recent financial crisis, the increased nervousness in the markets has led several countries to increase the coverage of their deposit insurance systems or to introduce such systems if they did not exist. In theory, these deposit insurance systems should make the banking system more stable by decreasing the risk of bank runs and lowering the need of individual depositors to monitor the bank, as at least part of the customers' deposits would be insured. The implementation of deposit insurance systems however introduces new problems of moral hazard. In this context, moral hazard is defined by Hoelscher and Klueh (2006) as "the incentive for excessive risk-taking by banks or those receiving the benefit of (deposit insurance) protection." This happens as in the presence of deposit insurance. The ability of banks to attract depositors no longer reflects the risk profile of their asset portfolio, and that banks, therefore, gain an incentive to make high-risk high-return. Deposit insurances hence increase the expected payoffs of risky investments by limiting the downside risk to the banks and allowing banks to borrow at below the risk free rate from depositors (Keeley, 1990).

Furthermore, the introduction of deposit insurance systems secures the deposits of regular depositors, this lowers their incentive to monitor the banks. Hence, market discipline disappears both because of the lack of monitoring, but also because depositors will no longer ask for an excess risk premium on their deposits, as they would otherwise have done if their deposits were uninsured. As these problems about the increased moral hazard incentives have long been known, several design modifications to the standard

deposit insurance system have been introduced in different countries. First, the answer to the question of who should finance the deposit insurance system, the banks or the government, is argued to have an effect on the moral hazard incentives of banks. If the government funds the system, the banks have no incentive to prevent losses on the deposit insurance fund. However, if the banks themselves fund the deposit insurance system, they would have increased costs when the deposit insurance fund is used. In this type of funding, there, however, is an extensive free rider problem hidden if the deposit insurance system is based on a fixed funding premium.

If this is the case and the deposit insurance system is prefunded, the excess costs of refunding the system will be passed on to the remaining banks, and the cost to the individual bank can hence be viewed as a sunk cost(Hoelscher & Klueh, 2006). If, however, the deposit insurance system is funded after the bankruptcy of the bank, there is no cost to the individual. Hence, it can, therefore, be argued that there is an incentive for the individual bank to increase its risk taking no matter which of these funding methods are used. It can, however, also be argued that an ex post funding system gives incentives for banks to monitor each other, which can then act as a substitute for the mentioned lost market discipline (Hoelscher et al., 2006)

2.4 Empirical Literature Review

An empirical literature review is a directed search of published works, including periodicals and books, that discusses theory and presents empirical results that are relevant to the topic at hand (Zikmund et al., 2010). A literature review is a comprehensive survey of previous inquiries related to a research question. Although it can often be wide in scope, covering decades, perhaps even centuries of material, it should also be narrowly tailored, addressing only the scholarship that is directly related to the research question. With a systematic approach to previous scholarship, literature review allows a researcher to place his or her research into an intellectual and historical context. In other words, literature review helps the author declare why their research matters. There have been debates and controversies on the effects of financial sector

policies on banks' financial performance. Below isan empirical review of independent and dependent variables.

2.4.1 Capital Adequacy Policy and Commercial Bank Performance

Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience. The capital structure of banks is highly regulated. This is because capital plays a crucial role in reducing the number of bank failures and losses to depositors when a bank fails as highly leveraged firms are likely to take excessive risk in order to maximize shareholder value at the expense of finance providers (Kamau, 2009).

Although there is general agreement that statutory capital requirements are necessary to reduce moral hazard, the debate is on how much capital is enough. Regulators would like to have higher minimum requirements to reduce cases of bank failures, whilst bankers in contrast argue that it is expensive and difficult to obtain additional equity and higher requirements restrict their competitiveness (Koch, 1995). High capital lead leads to low profits since banks with a high capital ratio are risk-averse, they ignore potentialrisky investment opportunities and, as a result, investors demand a lower return on their capital in exchange for lower risk.

Buyuksalvarcı and Abdioglu (2011) investigated the determinants of Turkish banks' capital adequacy ratio and its effects on financial positions of banks covered by the study; data in the study was obtained from banks' annual reports for the period 2006 to 2010. Panel data was used to analyze the relationship between the variables. Buyuksalvarcı and Abdioglu (2011) established that loan, return on equity and leverage have a negative effect on capital adequacy ratio while loan reserve and return on assets positively influence capital adequacy ratio.

Adeyemi (2012) examined bank failure in Nigeria as a consequence of capital inadequacy, lack of transparency and non-performing loans. The aim of the study was to establish the main factors responsible for bank failure in Nigeria, to assess the extent to which these identified factors are accountable for this failure and to ascertain other

factors that may be responsible for it. The study identified capital inadequacy, lack of transparency, and huge non-performing loans as a major cause of failure in Nigerian banks. Adeyemi (2012) claimed that financial institutions are expected to maintain adequate capital in order to meet their financial obligations, operate profitably and contribute as a result a sound financial system.

The study by Adeyemi (2012) adopted a structured questionnaire and covered all banks in Nigeria. Adeyemi (2012) concluded that capital inadequacy, lack of transparency and huge non-performing loans were established as the main causes of bank's poor performance in Nigeria. The study indicated that capital adequacy is a factor of financial performance. However, the study did not link capital adequacy as a financial distress factor on financial performance, further the study was based on data in Nigerian commercial banks.

Mathuva (2012) examined capital adequacy, cost income ratio and performance of commercial banks as a Kenyan scenario. The study was informed on provision of evidence that supports the central bank of Kenya's move to gradually raise bank capital level requirement and to also ensure proper and tight monitoring of banks operations. Mathuva (2012) used return on assets and the return on equity as a measure of bank profitability and consequently bank performance for the period between 1998 and 2007, Mathuva (2012) concluded that bank profitability is positively related to core capital ratio.

In Kenya, the core capital and total capital to total risk weighted assets ratios as at December 2014 were 15.9 percent and 19.2 percent respectively. This was due to increase of capital levels by various financial institutions through retained earnings and additional new capital, financial institutions are therefore required to maintain a core capital to deposit ratio of not less than 8 percent (CBK, 2015). According to Mathuva (2012), an increase in capital will raise the expected earnings by reducing the expected

costs of financial distress. Mathuva (2012) linked capital adequacy to financial distress but the study did not determine the extent of capital adequacy as a financial distress factor to financial performance of commercial banks.

Nzioki (2011) examined the relationship of capital adequacy and asset quality on performance. A simple random sample of five listed commercial banks were used to collect data for six years (2004 to 2009) and a descriptive design used. The study described the relationship between asset quality and banks performance and the relationship between capital adequacy and the financial performance. The study concluded that capital adequacy influences performance of commercial banks in Kenya, and greater bank capital reduces the probability of financial distress.

Ongore and Kusa (2013) examined the determinants of financial performance of commercial banks in Kenya. The study used a linear multiple regression model and generalized least square on panel data and established that specific factors significantly affect the performance of commercial banks in Kenya except for liquidity variable influenced performance, and specifically noted that capital adequacy significantly affect the performance of commercial banks in Kenya. The study however failed to determine the effect of capital adequacy as a financial distress factor on financial performance of the Kenyan banking industry.

The above studies on capital adequacy and financial performance mainly focused on results of foreign countries like; Ikpefan (2013) and Adeyemi (2012) for Nigeria and Buyuksalvarcı and Abdioglu (2011) for Turkey. Mathuva (2012) and Nzioki (2011) were based on the relationship between financial performance and capital adequacy, while Ongore and Kusa (2013) was mainly based on determination of capital adequacy as determinant of financial performance of commercial banks in Kenya. Findings of this studies did not link the effect of capital adequacy of commercial banks as a financial distress factor on financial performance of the Kenyan banking industry. However, from the above studies it can be argued that capital adequacy is a factor of performance.

Odunga et al., (2013) examined the effects of liquidity and capital adequacy on the operating efficiency of 40 commercial banks in Kenya for the period 2005-2011. They found that bank's performance is influenced by how a bank moves forward in an effort to streamline its operational strategies. They added that commercial banks with enough liquid assets tend to draw more confidence with customers because of the ability to address short-term financial obligations. It is therefore important for the central bank to ensure full compliance with the minimum liquidity requirement by commercial banks. Regardless of such regulatory framework, the major intention of holding capital is to build the internal strength of the bank to withstand losses during crisis. However, some authors argue that capital also affects performance via creating liquidity. Hence banks witha strong capital position are able to reduce their financing costs, for example by paying low interest rates on their debt. However, holding high capital level is not without drawbacks: a higher CAR ratio reduces the ROE due to two mechanisms: a high ratio indicates a lower risk and the theory of markets to balance advocating a strong relationship between risk and profitability would lead us to infer a lower profitability (Diamond & Rajan, 2001). Kamau (2009) asserted that adequate capital requirements help to lessen the chance that banks will become insolvent if sudden shocks occur.

2.4.2 Deposit Insurance Policy and Commercial Bank Performance

One of the major characteristics of banks is their function within maturity transformation. This means that the majority of a bank's assets consist of illiquid loans while the majority of liabilities consist of liquid deposits. This allows for risk sharing with depositors but also, as described above, makes the banks vulnerable to simultaneous withdrawals of deposits (Allen & Carletti, 2010). History has shown several instances where either well-reasoned nervousness or simple rumors have made depositors line up in front of banks to retrieve their deposits. This creates a liquidity shortage within the bank and in the worst case scenario forces it to foreclose. Hence, because of this instability of the banking system, depositors have a significant incentive to monitor the banks. Most depositors are however small, which courses considerable

monitoring costs for the individual depositor leading to extensive free-riding problems (Demirgüc-Kunt & Detragiache, 2002). To protect both banks, depositors and the financial system, many countries have introduced deposit insurance systems, which cover deposits in the banks, sometimes de-signed with a limit on the maximum amount covered (Barth, Caprio & Levine, 2013). These systems exist in two major forms, implicit and explicit systems, where implicit systems are characterized by the fast that governments through their actions or previous history show that they will guarantee the losses of depositors and maybe even creditors if a bank goes into bankruptcy. However, implicit deposit insurance systems can never be expected to always apply in all specific cases; this section will concentrate on explicit deposit insurances. Deposit insurance systems have by now become such a used measure for protecting financial systems against sudden financial panic that it has become a principal feature of policy advice given to developing countries by outside experts (Demirgüc & Kane, 2002). Furthermore, within the recent financial crisis, the increased nervousness in the markets has led several countries to increase the coverage of their deposit insurance systems or to introduce such systems if they did not already exist. In theory, these deposit insurance systems should make the banking system more stable by decreasing the risk of bank runs and lowering the need of individual depositors to monitor the bank, as at least part of the customers' deposits would be insured. The implementation of deposit insurance systems however also introduces new problems of moral hazard as the incentive for excessive risk taking by banks or those receiving the benefit of deposit insurance (Hoelscher and& Klueh, 2006.) Deposit insurances increase the expected payoffs of risky investments by limiting the downside risk to the banks and allowing banks to borrow at below the risk free rate from depositors (Keeley, 1990).

Furthermore, as the introduction of deposit insurance systems secures the deposits of regular depositors, their incentive to monitor the banks is lowered. Hence, market discipline disappears because of the lack of monitoring, and also because depositors will no longer ask for an excess risk premium on their deposits, as they would otherwise have done if their deposits were uninsured (Koch & MacDonald, 2009). As these

problems about the increased moral hazard incentives have long been known, several design modifications to the standard deposit insurance system have been introduced in different countries, the answer to the question of who should finance the deposit insurance system, the banks or the government, is argued to have an effect on the moral hazard incentives of banks. If the government funds the system, the banks have no incentive to prevent losses on the deposit insurance fund.

However, if the banks themselves fund the deposit insurance system, they would have increased costs when the deposit insurance fund is used. In this type of funding, there, however, is an extensive free rider problem hidden if the deposit insurance system is based on a fixed funding premium. If this is the case and the deposit insurance system is prefunded, the excess costs of refunding the system will be passed on to the remaining banks, and the cost to the individual bank can hence be viewed as a sunk costs (Hoelscher et *al.*, 2006). If, however, the deposit insurance system is funded after the bankruptcy of the bank, there is no cost to the individual. Hence, it can be argued that there is an incentive for the individual bank to increase its risk taking no matter which of these funding methods are used. It can, however, also be argued that an ex post funding system gives incentives for banks to monitor each other, which can then act as a substitute for the before mentioned lost market discipline (Hoelscher *et al.*, 2006).

To minimize the potential problems of fixed rate deposit insurances, some deposit insurance systems are based on risk based financing by the banks, meaning that the premium paid by the individual bank is based on some kind of assessment of the riskiness of the bank's asset portfolio. This effectively functions as a risk premium, which can substitute the lost risk premium on deposit stemming from the deposit insurance (Hoel-scher et *al.*, 2006). Another way to design deposit insurance systems to mitigate the moral hazard problems is to design it with a co-insurance feature, meaning that at least some depositors are not covered for their full amount of deposits. This can be done either by introducing a ceiling on the nominal amount covered or by only covering a certain percentage of deposits. This type of co-insurance reintroduces some

of the depositors' incentive to monitor the bank, but still retains some of the effects of reducing the risk of bank runs. However, how effective co-insurance is in increasing monitoring without increasing the risk of bank runs is not clear (Hoelscher et *al.*, 2006). There has however not yet been done an extensive amount of empirical research about the effects on risk based funding and co-insurance.

Vigneswara (2015) carried out a study on the determinants of deposit insurance systems for banks in India. The study used panel data techniques between 1997-2009 and the research findings revealed an inference contrary to the established and expected outcome. It was found established that non-performing assets do not affect the profitability of commercial banks and further, the research asserted that asset size has no significant impact on profitability of commercial banks. The study was based in India's commercial banks over eleven years between 1997 and 2009. The current study will fill a research gap in determining the effect of deposit insurance on financial performance of commercial banks in Kenya.

Akhtar and Hayati (2016) used an empirical Study on Islamic banking system of Pakistan in assessing the effect of asset quality, income structure and macroeconomic factors on insolvency risk to determine the insolvency risk in Islamic banking system of Pakistan for the years 2007 to 2015. To determine the insolvency risk in Islamic banks of Pakistan, a variety of bank specific and macroeconomic variables were used to estimate the impact. The results were obtained using OLS estimation. The results reveal that asset quality of Islamic banking system does not significantly impact insolvency, whereas, interaction with capital asset ratio significantly impact asset quality.

Olweny and Mamba (2011) carried out a study on the effect of bank sectorial factors on bank performance and asset quality was one of the bank specific factors under study. The study adopted an explanatory approach by using panel data research design. The study used annual financial statements of 38 Kenyan commercial banks from 2002 to 2008 and data analyzed using multiple linear regression method. The findings indicated

that there is a negative and strong relationship between poor asset quality and profitability. According to Olweny and Mamba (2011) the findings further meant that banks which fail to monitor their credit loans tend to be less profitable than those which pay particular attention to assets quality. Olweny and Mamba (2011) noted that small and medium banks that had the highest ratio of non-performing loans to gross loans are associated with low profitability. The findings are in line with the theory that increased exposure to credit risk which is normally associated with decreased bank profitability.

Barus, Muturi and Kibati (2017) carried out a study to establish the effect of asset quality on the financial performance of savings and credit societies in Kenya. The study employed an explanatory research design with a target population of 83 registered deposit taking SACCO's in Kenya that had been in operation in the period 2011-2015. The study used a census to collect both primary and secondary data. Multiple linear regression models were used to analyze the data using statistical package for social sciences (SPSS) and STATA. The findings of the study concluded that asset quality influenced the financial performance of savings and credit societies in Kenya. This was explained by the regression results that showed that the influence was positive and showed the magnitude by which asset quality influenced the financial performance of savings and credit societies. The univariate regression results showed that asset quality influenced the financial performance of savings and credit societies in Kenya.

The above studies on firm's asset quality were based on results of other countries; Adeolu (2014), Vigneswara (2015), Akhtar and Hayati (2016), others were based on SACCOs. Studies by Barus, Muturi and Kibati (2017), Olweny, and Mamba (2011) whose were mainly based on banks sectorial factors and not financial distress factors. Findings did not link the effect of assets quality of commercial banks as a financial distress factor on financial performance of Kenyan banking industry. However, the researchers identified asset quality as a factor of performance.

2.4.3 Liquidity Management Policy and Commercial Bank performance

Liquidity is simply the ease with which assets of banks can be cashed in times of need or its fair value. It is that quality of an asset, which enables a bank to respond to any financial situation requiringan urgent infusion of money. Liquidity is required to meet regular financial obligations of the bank especially without dipping into its reserves. When banks hold high liquidity, they do so at the opportunity cost of some investment which could generate high returns. The trade-offs that generally exist between return and liquidity risk are demonstrated by observing that a shift fromshort-term securities to long-term securities or loans raises a bank'sreturn but also increases its liquidity risks and the inverse is true. Thus a high liquidity ratio indicates a less risky and less profitable bank.

Ahmed (2014) sought to establish the effect of liquidity and leverage on financial performance of commercial state corporations in the tourism industry in Kenya noting that borrowings from banks by commercial banks to meet shorter liquidity needs do have the greatest impact on liquidity. The study adopted descriptive research design of ten (10) Commercial State Corporations in the tourism industry in Kenya during the period 2008-2012. Ahmed (2014) found out that the profitability of the Commercial State Corporations in the tourism sector in Kenya are negatively affected by increases in the liquidity gaps and leverages. The study did not take into account liquidity as a financial distress factor on financial performance in the Kenyan banking industry instead the study focused on the tourism industry in Kenya.

Said and Tumin (2011) investigated on the impact of bank-specific factors on performance in China and Malaysia. Bank-specific factors included liquidity, credit, capital, operating expenses and the size of commercial banks that was measured by return on average assets (ROAA) and return on average equity (ROAE). The study concluded that liquidity and size of banks do not have any influence on the performance of banks for both countries. In general, the ultimate effect of financial ratios on banks performance varies across sample countries and may be critically influenced by other

country-specific factors (Said & Tumin, 2011). However, the study did not link liquidity as a financial distress factor on bank performance; in addition, the study was carried out in China and Malaysia and not in the Kenyan banking industry.

Kibuchi (2015) carried out a study on the relationship between liquidity risk and financial performance of commercial banks in Kenya. The study adopted descriptive research design, data was gathered over the period 2010 to 2014, and as such, a causal study was undertaken in a non-contrived setting with no researcher interference.

Multiple regressions were applied to assess the impact of liquidity risk on banks' profitability. The study concluded that liquidity risk not only affects the performance of a bank but also its reputation and this might result in the loss of confidence among the depositors if funds are not provided to them in time.

Njeru (2016) examined the effect of liquidity management on financial performance of deposit taking saving and credit co-operative societies in Kenya. Njeru (2016) used descriptive design and used a stratified random technique to choose a sample size; the study concluded that effective liquidity management required a well-regulated sector and liquidity decisions were statistically significant in explaining financial performance of deposit taking SACCOs in Kenya. However, Njeru (2016) used SACCOs in Kenya but not commercial banks in Kenya, the study further used liquidity as management factor but not as a financial distress factor.

Ongore and Kusa (2013) examined the determinants of financial performance of commercial banks in Kenya between the periods 2001 to 2010. A linear multiple regression model and generalized least square on panel data to estimate the parameters were used. The findings showed that bank specific factors significantly affect the performance of commercial banks in Kenya, except for liquidity variable. According to Ongore and Kusa (2013) liquidity has lesser effect on financial performance of commercial banks in Kenya.

Omondi and Muturi (2013) examined the factors affecting the financial performance of listed companies at NSE in Kenya, their study adopted an explanatory research design and 29 listed firms. The study concluded that liquidity has significant positive effect on financial performance. This study was only based on listed companies in NSE and not banking industry and the findings could therefore not be generalized for all companies especially in the banking industry. In addition, factors affecting financial performance is a too general term unlike the use of financial distress factors that is specific and incorporates distress.

Muiruri (2015) examined the effects of central bank regulatory requirement on financial performance of commercial banks in Kenya; the study focused on various variables and liquidity management being one of them and adopted a descriptive study on all 43 commercial banks licensed under the Banking Act and operational as at 31st December 2009 in Kenya. Muiruri (2015) revealed that there was a significant variation on the financial performance due to changes in liquidity management and other factors. The study examined liquidity management as a regulatory requirement on financial performance and not liquidity as a financial distress factor.

Ndirangu (2013) examined the effects of working capital management on profitability of manufacturing firms in Kenya, liquidity being one of the variables under study. The study sought to establish whether liquidity management practices have an influence on profitability of manufacturing firms in Kenya. Ndirangu (2013) used both primary data through a questionnaire and secondary data in the study with a target population of 413 manufacturing firms in Nairobi industrial area and its environs. Ndirangu (2013) concluded that liquidity and other variables have a significant effect on performance and can be used to predict profitability. The study identified liquidity as a working capital management factor on financial performance of manufacturing firms in Kenya and not liquidity as a financial distress factor in banking industry.

Cheluget et al. (2014) examined liquidity as a possible determinant of financial distress in insurance companies in Kenya, a survey design and stratified random sampling was applied, the target study covered 45 insurance companies registered with the insurance regulatory authority as at 31st December 2012. Cheluget et al., (2014) used primary data and concluded that liquidity has a significant relationship with financial distress and therefore they concluded that liquidity is a potential cause of financial distress in insurance companies in Kenya. The fact that the study was based on insurance and not in the banking sector, it also failed to show clearly the extent on the effect of liquidity as a financial distress factor on financial performance in banking industry in Kenya.

From the above review its evident that studies mainly focused on the effect of liquidity on financial performance of other industries like tourism, insurance, SACCOs, firms in NSE and manufacturing firms other than commercial banks in Kenya; (Ahmed, 2014; Cheluget et al., 2014; Ndirangu, 2013; Njeru, 2016; Omondi & Muturi, 2013). Other studies were based on other countries (Said & Tumin, 2011), and other studies were carried out for shorter period and further did not link liquidity as a distress factor financial performance of commercial banks in Kenya; (Kibuchi, 2015) and (Ongore & Kusa, 2013) therefore findings from this studies could not be generalised for the current study that is based on the effect of financial distress factors on financial performance of commercial banks in Kenya.

Liquidity indicates the ability of the bank to meet its financial obligations in a timely and effective manner. There are variations among scholars with regard to the measurement ratios. The most common financial ratios that reflect the liquidity position of a bank according to Samad (2004) are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance,Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia.Another important decision that the managers of commercial banks take refers to the liquidity management and specifically to the measurement of their needs related to the process of deposits and loans. The importance of liquidity goes

beyond the individual bank as a liquidity shortfall at an individual bank can have systemic repercussions (CBK, 2009). It is argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns (Kamau, 2009).

The CBK requires institutions to maintain minimum cash balances with it as a reserve against their depositors and other liabilities. Currently, the ratio is 10%. These requirements are legally binding, and the central bank may impose a penalty interest charge on any institutions, which fails to maintain the minimum cash balances. The banking sector in Kenya looks very competitive judging by the number of local and foreign banks in the industry. According to the CBK Bank Supervision Report (2014) as of December 31, 2014 there were 44 commercial banks, 13 of which are foreign-owned. However, Polit and Beck (2003) noted that most customers in Kenya below the top tier of corporate and wealthy borrowers face a non-competitive banking market and are often effectively tied to one bank, with very high switching costs hence the interest rate spread and margins in the country.

In Kenya, the statutory minimum liquidity requirement is 20%. However, according to CBK Bank Supervision Annual Report (2009), the average liquidity ratio for the sector was 39.8% in 2009, 37.0 % in 2008, and way above the minimum requirements. This has baffled many financial analysts as to how banks could withhold such amount of cash in a credit needy economy such as Kenya (Kamau, 2009).

The CBK attributes this to the banking industry's preference to invest in the less risky government securities. Ndung'u and Ngugi (2000), as cited in Kamau (2009), attributes this liquidity problem to the restrictions placed on commercial banks at the discount window, coupled with thin interbank market, a high reserve requirement and preference of government securities. Thus given the foregoing analysis, the Kenyan banking sector provides an interesting case to assessing the effects of liquidity on profitability.

Kamau (2009) argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns. The author added that trade-offs generally exist between returns and liquidity risks that are demonstrated by a shift from short term securities to long term securities. This shift in securities raises a bank's return thereby increasing bank's liquidity risks, and the inverse is true. Recent studies suggest that by combining exposure to liquidity risk in both deposit-taking and lending yields a risk-reducing, synergy that Kashyap et al., (2002) argued that as long as liquidity demands from depositors and borrowers of credit are not too correlated, an intermediary reduces its cash buffer by serving both customers. Holding cash raises costs for both agency and tax reasons. Thus, their model yielded a diversification synergy between transactions deposits and unused loan commitment. Diamond and Dybvig (1983) argued that the liquid deposit account offered through a financial intermediary nurtures households insurance against liquidity risk and promotes consumption smoothing. In their model, a bank is a mechanism to allow investors to finance illiquid with high return projects. This model does not suggest a true synergy between lending and depositing. Recent studies have suggested that by combining exposure to liquidity risk in both deposit-taking and lending yields a risk-reducing synergy.

Odunga *et al.* (2013) examined the effects of liquidity and capital adequacy on the operating efficiency of commercial banks in Kenya. They found that bank's performance is influenced by how a bank moves forward in an effort to streamline its operational strategies. They added that commercial banks with enough liquid assets tend to draw more confidence with customers because of the ability to address short-term financial obligations.

It is therefore important for the central bank to ensure full compliance with the minimum liquidity requirement by commercial banks. An empirical study conducted by Loutskina (2005) examined the relationship between securitization and liquid assets among commercial banks. The author observed that when faced with a sudden interest rate hike,

banks that securitize would utilizean internal source of funding rather than borrow at a high cost in order to maintain their lending activities. Loutskina study also revealed that banks with more loans that are securitizable are liquid and therefore less sensitive to fund shocks that arise from changes in the monetary policy. For a bank to improve its performance, it must pursue both liquidity and profitability. Kamau (2009) argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns.

2.4.4 Credit Risk Management Policy and Commercial Bank Performance

A credit riskcreates a loss which may be complete or partial. In an efficient market, higher levels of credit risk will be associated with higher borrowing costs. Because of this, measures of borrowing costs such as yield spreads can be used to infer credit risk levels based on assessments by market participants.To overcome the challenge of NPLs, an institution is required to monitor the behavior of credit consumers (Gaitho, 2013). When financial institutions compete with each other for customers, multiple borrowing and over-indebtedness increase loan default unless the financial institutions have access to databases that capture relevant aspects of clients' borrowing behavior (Gaitho, 2013). The information monopoly on the other hand also does more harm than good. Bad loan borrowers who know banks operate in isolation exploit the information asymmetry to create multiple bad debts (Kipyego &Wandera, 2013). Therefore banks are encouraged to share credit information amongst them.

Competition between lenders reduces information sharing, but the impact of competition seems to be only of second order importance (Brown & Zehnder, 2007). Countless theoretical and empirical research, document various positive impacts of credit information sharing (CIS). Turan & Koskija (2014) outline the benefits of CIS as increasing transparency among financial institutions, helping banks to lend prudently, decreasing the risk level of the banks, acting as a borrower's discipline against defaulting and reducing the borrowing cost. It also highlights that one of the factors that

lead to the growth or decline of NPLs is information sharing. Jappelli and Pagano(1999) also finds out that information sharing is associated with broader credit markets and lower credit risk. Credit information sharing thus undoubtedly plays a pivotal role in reducing information asymmetry that exists between banks and borrowers (Gaitho, 2013). With regard to this aspect, the idea of Credit Reference Bureaus (CRBs) or Credit Reporting Agencies (CRAs) to facilitate credit information sharing (CIS) was born. Historically, the concept of CRAs or CRBs in the 1860s in the US involved compiling a list of names of one's clientele. This enabled merchants to keep track of their customers, especially those of poor credit risk (Shisia *et al.*, 2014). In recent times, this concept led to the development of renowned CRAs such as Dun & Bradstreet, TransUnion, Experian, Creditinfo,among others, which are operational in various parts of the world. In Kenya, non-performing loans (NPLs) posed a great challenge to the banking sector. Kenya's biggest banks such as Kenya Commercial Bank and National Bank of Kenya had 51% and 56 % respectively of total loans being NPLs in 2001. Other banks such as Delphis Bank Ltd. and Daima Bank Limited had 76% and 72% of total loans being NPLs (CBK, 2001). According to CBK, poor credit risk management was the main cause of alarge number of bank failures witnessed in the last two decades. Ten banks had collapsed between 1984 and 1990, and another 14 banks collapsed between 1991 and 1994 (CBK, 1994). As early as 2001, there was a change to the banking legislation to grant powers to CBK and banking institutions to share information as a means to assist banks in credit assessment of their borrowers to bring down the levels of NPLs in the sector (CBK, 2001). The variation of NPLs from 1995 to 2013 is as depicted in appendix I.It is evident that the percentage of NPLs to total loans has been decreasing from two digits values to one digit values over the period of almost 20 years. The significant drop in NPLs of 10.7% between 2006 was attributable to write-offs and recoveries (CBK, 2007). The increased from 4.7 percent in December 2012 to 5.2% in December 2013 signaled an increase in credit risk which was largely attrib utable to the lag-effect of the high interest rates in the first half of 2012, and the slowdown in economic activities due to the general elections in March 2013 (CBK, 2013).

2.4.5 Interest Rate Management Policy and Banking Sector Performance

The interest rate can be defined as the annual price charged by a lender to a borrower in order for the borrower to obtain a loan. This is usually expressed as a percentage of the total amount loaned.Traditional theories define interest rate as the price of savings determined by demand and supply of loanable funds. Ngugi and Kabubo (1998) states that the primary role of interest rate is to help mobilize financial resources and ensure the efficient utilization of resources in the promotion of economic growth and development. Chen et al. (1986) indicated that interest rate had a positive impact on banking sector performance.

Wongbangpo et al. (2002) observed that interest rate had a negative impact on southeast Asian countries. In the industrial analysis, Nguyen (2007) found out that interest rate spreads had a significant effect on the riskiness of capital-intensive industries. Chiang et al.(2009) realized interest rate was negative toward Singapore hotel stock return. Specifically, Rapach et al. (2005) pointed out that interest rate was the most reliable variable. However, Chen et al. (1986) thought that interest rate didn't have any relationship with stock return. Besides, Chen et al. (1986) also found the interest rate was not significant for Taiwan hotel stock return. Kandir (2008) studied the Turkish market and found a positive relationship between interest rates and stock return. Jefferis and Okeahalam (2000) studied the relationship between stock prices and selected economic variables for South Africa, Zimbabwe and Botswana. For South Africa, they show that the stock market is negatively influenced by the long-term interest rate.

2.4.6Commercial Bank Performance and Measurement

Performance measurement and reporting is now widespread across the private sector as well as public sector of many industrialized and industrializing countries (Williams, 1948). The common tool that is used for this process, key performance indicators (KPIs), has been argued to provide intelligence in the form of useful information about a public and private agency's performance (Williams, 1948). Scholars like Modell (2004)

and Vakkuri and Meklin (2006) have maintained that the implementation of performance measurement systems possess important symbolic value. KPIs are viewed as a good management device and a socially constructed tool that makes sense (DeKool, 2004).

The fact that KPIs tend to be quantitative has helped to promote their image of objectiveness and rationality. The image of KPIs is further enhanced by their widespread application across the many sectors of many countries. The importance of performance measurement is noted by Ingraham (2005) that it is important to expect that citizens see and understand the results of organizational programs.

Cicea and Hincu (2009) state that commercial banks represent the core of the credit for any national economy. In turn, the credit is the engine that put in motion the financial flows that determine growth and economic development of a nation. As a result, any efficiency in the activities of commercial banks has special implications on the entire economy. The management of every commercial bank must establish a system for assessing investment performance, which suits its circumstances and needs and this evaluation, must be done at consecutive intervals to ensure the achievement of the Bank's investment objectives and to know the general direction of the behavior of investment activity in the past and therefore predict the future.

Profitability offers clues about the ability of the bank to undertake risks and to expand its activity. The main indicators used in the appreciation of the bank profitability are: Return on equity, ROE (Net income/Average Equity), Return on Asset, ROA (Net income /Total assets) and the indicator of financial leverage or (Equity/Total Assets) (Dardac & Barbu, 2005). The indicators are submitted to observation along a period of time in order to detect the tendencies of profitability. The analysis of the modification of the various indicators in time shows the changes of the policies and strategies of banks and/or of its business environment (Greuning & Bratanovic, 2004). A commonly used measure of bank performance is the level of bank profits (Ngumi, 2013). Bank profitability can be measured by the return on a bank's assets (ROA), a ratio of a bank's profits to its total assets. The income statements of commercial banks report profits before and after taxes. Another good measure on bank performance is the ratio of pre-tax profits to equity (ROE) rather than total assets since banks with higher equity ratio should also have a higher return on assets.

Ali (2015) researched on effect of credit risk on management on financial performance of the Jordan commercial banks. Thirteen commercial banks were chosen to express on the whole Jordanian commercial banks. Credit risk indicators used in the research were capital adequacy, non-performing loan to gross loans, credit interest to credit facilities, and leverage ratio. Performance was measured by return on assets and return on equity. In this research stationarity were tested using Augumented Dickey fuller test on the first difference the results indicated rejection of unit root null hypothesis of stationarity. In the first model using return on assets (ROA), non-performing loans ratio had a positive relationship ROA while Leverage ratio and Provision for Facilities loss to Net facilities ratio had negative effect on banks financial performance. Capital adequacy ratio, Credit interest to Credit facilities ratio and the leverage ratio had no effect on banks financial performance. The second model where return on equity ROE was used Non-performing loans to Gross loans ratio had positive effect on the banks financial performance. Leverage ratio and Provision for Facilities loss to Net facilities ratio had negative effect

while Capital adequacy ratio, Credit interest to Credit facilities ratio and the leverage ratio had no effect on the banks financial performance.

Anas and Fauziah (2014) researched on impact on financial risk on Islamic banks in Malaysia. Performance was measured by return on assets, independent variables were credit risk, liquidity risk and rate of return risk, the research was controlled by GDP , inflation rate and bank size. Sixty five global Islamic banks for a period of eight years from 2004 -2011 were used in the study. Panel data were used and panel unit root test was applied where fisher type (ADF) unit root was used. All variables were stationary except inflation which after first difference it became stationary. The findings were that credit risk and rate of return risk had a significant negative relationship. Liquidity risk had positive relationship with (ROA) but not significant, hence not regarded as absolute determinant of fully fledged Islamic bank profitability. Control effects of size of bank and GDP was negative and positively related to ROA respectively but not significant

Hussein, Hela and Walaa (2015) undertook a research on financial risk and Islamic banks performance in the Gulf cooperation council (GCC). The independent variables were liquidity risk measured by total loans to total deposit ratio, credit risk measured by total loans to total assets ratio, capital risk measured by equity capital to total assets ratio and operation risk measured by cost to income ratio.

The dependent variable was return on equity. Gross domestic product was taken as control variable. Eleven banks from the total forty seven banks were chosen for the period 2000 to 2012 of which three banks were from Kuwait, two from Bahrain, three from UAE one from Qatar and one from Saudi Arabia. The findings from the regression model showed that capital risk and operation risk had a negative and significant relationship to return on equity while credit risk and liquidity risk had an insignificant relationship to return on equity. Gross domestic product had no control effects on the model. The study recommended that more emphasis should be taken on mitigating capital and operation risk to improve performance.

Obawale and Oladunjoye (2012) in their research risk management and financial performance of banks in Nigeria. Secondary data was from annual reports for 4 years and financial statements of 10 banks were used in this research panel data estimation technique was adopted. The results showed that there was a significant relationship between bank performance and risk management. Better risk management in terms of managed fund, reduction in cost of bad and doubt loans and debt equity ratio resulted in better bank performance. Thus, it is of crucial importance that banks practice prudent risk management and safeguarding the assets of the banks and protect the investors' interests. Umar, Muhammad, Asad, Muhammad and Mazhar (2015) in their study to analyze impact of bank liquidity risk on performance of Conventional banks in Pakistan. A sample of 10 banks from banking sector in Pakistan was used.

The independent variables were current ratio and loan to deposit ratio while the dependent variable were return on assets and return on liabilities. The findings were that both current ratio and loan to deposit ratio had a positive relationship with both return on assets and return on liabilities which were significant for Pakistan banks. In this research as liquidity risk increase the performance of Pakistan banks increase.

Hansen (2009) conducted a study on the strategic foreign exchange risk management practice by Danish medium-sized non-financial, not-listed companies that are involved in international activities. The study showed that foreign exchange risk had a positive correlation to financial performance. The size of the company had a significance positive relationship with performance. Ahmed, Akhtar and Usman (2011) conducted a study on risk management practices and Islamic Banks.

The research aimed at determining the firm's level factors which have significantly influenced the risk management practices of Islamic banks in Pakistan. The study concluded that size of Islamic banks had a positive and statistically significant relationship with financial risks that is both credit and liquidity risk.

Imamul and Arif (2015) in their research on relevance of financial risk with financial performance an insight of Indian Banking Sector , the objectives of the research were To assess the relationship between credit risk and financial performance of Commercial banks in India and to measure the impact of liquidity risks financial performance of commercial banks in India, to measure the impact of interest rate risks financial performance of commercial banks in India to measure the impact of capital risks financial performance of commercial banks in India and to measure the impact of solvency risks financial performance of commercial banks in India. The financial data were collected from the annual reports of the selected commercial banks and annual reports from the banks websites. The research covered a period 2008 to 2012 thus five year period. This research utilized selected ten leading banks, five from public sector and five from private sector, as representatives on the basis of total assets. The analysis of the study showed Interest Rate Risk and Liquidity Risk were insignificant to performance whereas Solvency Risk Capital Risk and Credit Risk were statisticallysignificant to the financial performance of India Commercial Banks. The study recommended that banks should revamp the conventional risk management system, and should have adequate capital and develop the regulatory insights to avoid the legal or compliance risks also to adopt the proactive approaches when handling financial risks.

Virginie (2015) investigated the effects of capital and liquidity ratios on banks' profitability according to their size. The data used was obtained from Bank scope, a regular financial database of desk research. The sample included annual financial data of 1270 European banks for the period of 2005 to 2012. The banks were put into three groups of 346 commercial banks, 487 cooperative banks and 835 savings banks respectively. The independent variables were bank capital, liquidity risk and credit risk. The findings were Liquidity risk had a positively relationship to performance which was significant for small banks.

This meant that on average small banks had less demand deposits in comparison to large banks though large banks had better access to external funds than small banks. Credit risk showed a negative relation to banks profitability this was significant for large banks. Thus total loans had an association with decreased in profitability for large bank thus higher provisions indicates non-performing ratios with lower asset quality.

Şerife and Ugur (2012) researched on impact of macroeconomic variables on stock returns for companies from different sectors in Bosnia and Hezegovina. Forty five companies from 11 sectors were chosen in order to observe the role of each macroeconomic factor on stock returns. The following factors were used inflation rate, exchange rate, interest rate, unemployment rate and current account deficit The overall results indicated that exchange rate and interest rate were the most significant factors which influenced stock price fluctuations of the companies. Stock returns for companies in various industries were very sensitive to the changes in interest rate and exchange rate.

Aykut (2016) researched on the effect of credit, interest and foreign exchange rate risk on the bank index and bank stock returns. For this there were 49 banks in total, 32 of them being deposit, 13 development and investment and 4 of them participation banks. The descriptive statistics for the variables was done. The return distribution was negatively skewed for all variables. Negative skewness meant asymmetrical distribution with a long tail to the left meaning big losses in the crisis periods. All data had large kurtosis values this indicated leptokurtic distribution which is more peaked around the mean than a Gaussian distribution. The normality was rejected at 1% significance level by Jargue- Bera tests. Augmented Dickey-Fuller statistics indicated stationary condition by rejecting the unit root at 1% and 5% significance levels. The results showed interest rate risk had a statistically negative and significant effect on the volatility of bank profitability. The effect of Foreign exchange risk on bank return volatility was significant and positive Credit risk had a negative and significant effect on bank index

and bank returns volatility. This result supports the fact that the Turkish banking system had a large short position till the end of 2002 and small and long position after that time.

Ofosu- Hene and Amoh, (2016) in their research on risk management and performance of listed banks in Ghana, Secondary data of all listed banks on Ghana Stock Exchange over the period 2007–2014 was used. Panel regression data approach and a risk index were constructed for all listed banks on Ghana Stock Exchange. For this research the variables were risk index, bank size, capital adequacy, liquidity risk, credit risk, inflation, exchange rate risk. The dependent variables were return on assets (ROA) and return on equity (ROE). The banking industry in Ghana had 32 registered banks (Bank of Ghana, 2016). Seven were listed on the Ghana Stock Exchange (GSE), were selected. Banks that had been on the stock market for 10 years Data covering the period 2007–2014 was used in the analysis a sample of 20 banks being used and secondary data based on audited annual accounts submitted to Bank of Ghana and banks website. Other data were sought from databases of Ghana Statistical service.

The findings were risk management (RI) had no significant relationship with return on assets a measure of bank performance. Bank size and capital adequacy had no significant relationship with bank performance (return on assets). There was a significant relationship between credit risk measured by nonperforming loans and return on assets. Liquidity risk had significant negative relationship with return on assets.

The results when using return on equity were as follows, risk management (RI) had a significant positive relationship between return on equity (ROE) this suggested that there is little impact on performance due to very small coefficient. Bank size had no significant impact on return on equity (ROE) this was consistent with findings when return on assets (ROA) was used. This showed that whether equity is increased or not, it had not impact on either return on assets (ROA) or return on equity (ROE). Macroeconomic variables such as inflation and exchange rate risk also had no significant impact on return on equity (ROE) or return on assets. Capital adequacy had a

ignificant negative effect on return on equity (ROE). Non-performing loans had a significant negative relationship with return on equity (ROE) The implication is that, as banks non-performing loans increases, it decreases their profit. The authors recommend that the Ghanaian banking regulatory management may need a rethink and be cautious during establishment of risk management policies and frameworks that ensures careful use of deposits improve bank performance.

In Kenya a study by Wanjohi, Wanjohi and Ndambiri (2017) analyzed the effect of financial risk management on the financial performance of commercial banks in Kenya. The objective was to establish the effect of financial risk management on the financial performance of the commercial banks in Kenya for five years (2008-2012). Primary data was used in this research where, a self- administered survey questionnaire was used across the banks. The study used multiple regression analysis was used risk measurement risk management environment, risk monitoring and adequate internal control had a positive correlation to the financial performance of commercial banks in Kenya. This research concluded that financial risk had a strong impact on the financial performance of commercial banks in Kenya.

Kamau, and Njeru, (2016) researched on Effect of Liquidity Risk on Financial Performance of Insurance Companies Listed at the Nairobi Securities Exchange the objectives of the study were effect of operational risk on financial performance of insurance companies listed in the Nairobi Securities Exchange, to determine the effect of market risk on financial performance of insurance companies listed in the Nairobi Securities Exchange and to determine the effect of credit risk on the financial performance of insurance companies listed in the Nairobi Securities Exchange.

Descriptive research design was used the study used all the six listed insurance firms in Kenya , Kenya Re insurance, Liberty Kenya holding limited, Jubilee holding, Pan African insurance holding, Britam and CIC holding. Risk managers, operations managers, marketing managers and finance managers were interviewed in all the six listed insurance firms which consisted of 18 risk managers, 6 operation managers, 6

finance managers and 6 marketing managers. All the independent variables were negative and significant relationship between financial risk and financial performance. Companies can avoid these risks by ensuring correct and effective measures are adhered to. Kithinji (2010) conducted a study on credit risk management and profitability of commercial banks in Kenya using the non-performing loan portfolio as an indicator of the effectiveness of credit management practices. The intervening variable was the amount of credit as indicated by loans and advances normalized by the total assets.

The results were that there was no significant relationship between credit risk management (non-performing loan portfolio), amount of credit and profitability. Siba (2012) carried out a study on the relationship between financial risk management practices and financial performance of commercial banks in Kenya. The study involved 40 commercial banks in Kenya. The study employed questionnaire method for primary data collection, whereas secondary data was obtained from CBK annual supervision reports. The conclusion was that banks had highly effective risk management practices and there was a strong relationship between the bank's performance and the efficiency of the banks risk management practices.

Mauko, muturi, and Mogwambo (2016) researched on influence of financial risk management practices on the performance of commercial banks in Migori County in Kenya. The dependent variables were credit risk management practices, liquidity risk management practices, foreign exchange risk management practices and interest rate risk management practices. From the six banks 32 employees were used in the research, descriptive survey design was used in this study and the findings were that all the independent variables were positively correlated to performance. Regression also showed positive and significant relationship between all the independent variables and performance.

Monyi (2017) in their study on determinants of bank performance analyzed two measures of performance: the cost of intermediation and banks' profitability, measured by return on assets. The findings showed that as the capital adequacy ratio internalizes

the risk for shareholders, banks increase the cost of intermediation, which supports higher return on assets and equity pointing out the importance of capital regulation to the performance of banks and financial stability.Lwekoramu (2016) carried out a study on financial sector reforms in bank regulations and supervision and its impact on service quality of commercial banks in Tanzania. They found that regulations also play amajor role in minimizing the entry barriers and facilitating the market entry. Banking regulations such as the ones in Tanzania prescribe minimum conditions of entry into the banking industry, and provide minimum capital requirements for banks. Barthet al. (2013) carried out a study on bank regulation and supervision in 107 countries to examine the relationship between bank regulation/supervision and bank performance and stability.

They assessed different broad governmental approaches to bank regulation and supervision and evaluate the efficacy of specific regulatory and supervisory policies. More specifically, we first assess two broad and competing theories of government regulation.

Epure and Lafuente (2012) examined bank performance in the presence of risk for Costa-Rican results showed that performance improvements follow regulatory changes and that risk explains differences in banks and non-performing loans which negatively affect efficiency and return on assets while the capital adequacy ratio has a positive impact on the net interest margin. The study further confirmed that appointing CEOs from outside the bank is associated with significantly higher performance ex post executive turnover, thus suggesting the potential benefits of new organizational practices. Demirgüç-Kunt and Huizinga (1998) analyze how bank characteristics and the overall banking environment affect both interest rate margins and bank returns. They found out that macroeconomic and regulatory conditions have a pronounced impact on margins and profitability. Stiglitz (2001) noted that all the arguments that support the application of the regulation to banks are naturally extended to non-banks. However, the extent and nature of the regulation may differ markedly between banks and non-banks

depending on the role the latter institutions play in the economy. Some issues involved in prudential regulation of non-banking institutions are different from the ones applied to banks because, for the former ones, systemic risk, contagion and the potential disruption of the payments system do not constitute threatening issues. In the case of Micro Finance Institutions (MFIs), the task involves establishing an appropriate and cost-effective regulation that is compatible with the objectives of regulation of the financial system as a whole; and that allows sufficient margin for innovation and flexibility to facilitate the growth of the industry.

Aikaeli (2008) and Kamau (2009) utilized Data Envelopment Analysis to measure the productivity and efficiency of Kenyan Banks while Olweny and Chiluwe (2012 use the CAMEL model to measure performance while utilizing the ROA and ROE as the independent variables.Olweny and Chiluwe (2012) adopt the CAMEL model with the exclusion of the Earnings component which is provided by ROA.

Since they use it as the independent variable to measure profitability of banks in Kenya, they include Foreign Ownership and Market Concentration to the model to cater for market factors. They found out that all the components have a significant effect on profitability with capital adequacy, the most important, followed by operational efficiency, asset quality, and liquidity respectively. However, no effects of the market factors are found to affect bank performance.

Muiruri, Memba and Njeru (2015) analyzed the effects of central bank regulations on the performance of banks in Kenya. The findings showed that as the capitalrequirementincreases the risk for shareholders, which supports higher return on assets and equity, pointing out the importance of capital regulation to the performance of banks and financial institutions. The study recommends the use of structural reforms aimed at establishing more competition in the banking industry to ensure that performance indicators are commensurate with the optimal practices of the intermediation function that guarantees financial stability over time.

Njeule (2013) did a comparative study on the effects of CBK prudential regulations of 2006 on the financial performance of commercial banks. The study used only secondary quantitative data to determine the effects of CBK prudential regulations of 2006 on the financial performance of commercial banks. Evidence from the study indicated that there was great positive variation on the financial performance of commercial banks due to changes in capital adequacy, liquidity management, risk classification of assets and provisioning, foreign exchange risk exposure and corporate governance. This was an indication that CBK regulatory requirements had great positive effects on the financial performance of commercial banks. The study further found that the adjusted R squared value for the period after introduction of CBK prudential regulations 2006 was found to be greater than that of the period prior to the regulations an indicator that the regulations greatly influenced the financial performance of commercial banks. The study recommended the need for CBK to enhance their regulatory requirements on commercial banks in Kenya, as it was revealed that Central bank of Kenya regulatory requirements enhances the financial performance of commercial banks in Kenya.

2.5 Critique of Existing Literature

From reviewed relevant literature such as Iftekhar et al. (2009), Monyi (2017) and Olweny and Chiluwe (2012), financial sector policies have positive impact on performance indicators. They have agreed on the transformational effects of liquidity management and interest rate management on bank performance. However other scholars like Mwongela (2016), found out that capital adequacy policy has negative effects on performance indicators due to tied up capital and elimination of small banks that hamper competition. These mixed results and alternative views from different countries and writers are mainly because of lack of comprehensive analysis of multiple policies and performance indicators. Finally, as evidenced by broad literature on bank lending channel, credit rationing and uncertainty about the creditworthiness of borrowers may markedly influence banks' risk taking thereby influencing their willingness to lend. The recent evidence suggests that this aspect of bank lending channel, namely risk

taking channel, may play an important role in the monetary transmission (Altunbas et al., 2009). Credit risk is perhaps the oldest and most challenging risk for financial institutions, leading to innovations geared at addressing this problem (Broll et al., 2002). This risk emanates from the probability that borrowers will default on terms of debt, subsequently putting the capital of a bank in jeopardy.

In the Kenyan context, research devoted to bank performance and efficiency has been growing and can be categorized as having been studied in the context of different models. Studies utilising Data Envelopment Analysis for instance (Kamau, 2009) apply the DEA model to measure the productivity and efficiency of Kenyan Banks. Aikaeli (2008) also applies the DEA model to analyse commercial bank performance in Tanzania while Olweny and Chiluwe (2012) use the CAMEL model to measure performance while utilizing the ROA and ROE as the independent variables.

Olweny and Chiluwe (2012) adopt the CAMEL model with the exclusion of the Earnings component which is proxied by ROA since they use it as the independent variable to measure the profitability of banks in Kenya. They, in addition, include Foreign Ownership and Market Concentration to the model to cater for market factors. The study used data for the period from 2002 to 2008. The study focused capital adequacy, operational efficiency, asset quality and liquidity as components affecting profitability.

Barth, Caprio and Levine (2013) studied the bank regulation and supervision in 107 countries to examine the relationship between bank regulation/supervision, bank performance and stability. They used (1) assess different broad governmental approaches to bank regulation and supervision and (2) evaluate the efficacy of specific regulatory and supervisory policies. More specifically, we first assess two broad and competing theories of government regulation.

Nasieku, et *al.* (2013) carried a study on how Basel capital adequacy framework affects economic efficiency and behavior of banking sector in Kenya. The study adopted non-parametric approach, Data Envelopment Analysis (DEA) to analyze bank economic efficiency and Malmquist index (MPI) to measure the growth of banks in Kenya during the2001-2011 period. Nasieku study concentrated on assessing how efficient resource allocation and utilization, efficiency productivity change. Basel capital adequacy framework in commercial banks in Kenya influenced their economically efficient, implementing Basel II risk sensitive measures and bank regulations and supervision. She further analyzed how banks private monitoring or disclosure requirement influence the economic efficiency of Kenyan commercial banks. Obiero (2002) study focused on the adequacy of the banking sector regulatory framework. The study focused on reducing bank failure analyzed 39 banks, which failed in Kenya in the period 1984 to 2001. He further noted that although the legal provisions of the banking regulatory frameworks are fairly comprehensive in coverage and adequate in content to reduce the probability of failure, timely intervention by CBK are important if they are to be effective. Njeule (2013) did a comparative study on the effects of CBK prudential regulations of 2006 on the financial performance of commercial banks. The study covered a twelve-year period from 2001 to 2012; six years prior to implementation of the prudential regulations (2001-2006) and six years after implementation of the prudential regulations (2007-2010). Muiruri (2015) also did a study on the effect of central bank regulation on the performance of commercial banks between 2009-2013,though the study did not bring out the aspect of deposit insurance and interest rate management. Hence, this study takes a comprehensive approach covering the unique aspects of deposit insurance policy.

2.6 Research Gaps

From the foregoing review of relevant literature, it is evident that research in the area of financial policies on commercial bank performance has been done but not in a comprehensive approach, since the impact of financial sector policies on bank performance, is still misunderstood for two main reasons. First, there is inadequate

understanding about the nature of some of the financial sector policies, and secondly, some of the policies' impact on commercial bank's performance remains lowly untested (Ngumi, 2013). The banking environment in Kenya has for the past decade, undergone many regulatory and financial reforms. They include changes in capital requirement, increase in liquidity crisis, introduction of credit reference bureaus to check credit risk, and introduction of interest capping hence influencing cost of funds. Deposit insurance policy has also undergone structural changes to capture wider coverage and possibility of making it risk based (CBK, 2017). 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 and caused mergers and receiverships and liquidation of banks (Kamau, 2009).

Previous studies like Monyi (2017), Mwania and Muganda (2011), Mwongela (2016) and Olweny and Chiluwe (2012) have produced mixed results regarding the impact of various financial policies on commercial bank performance. Monyi (2017) and Mwongela (2016) in their studies concluded that various financial policies had least impact on commercial bank performance, while Olweny and Chiluwe (2012) and Mwania and Muganda (2011) concluded that financial policies had significant contribution towards commercial bank performance. Such mixed conclusions created and necessitated the need to carry out a study with a wider pool of policies to establish the effect of Financial Sector Policies on Commercial banks' performance.

Monyi (2017) while studying performance of deposit taking microfinance found out that there is insignificant relationship between liquidity and credit risk on financial performance of microfinance. Muiruri, Memba and Njeru (2015) in their study on effect of central bank regulations on performance of banks in Kenya tell more about central bank policies before reforms, but there are substantial unanswered questions in the areas of deposit insurance, credit risk management and effects of interest capping. Mwongela (2016) studied the impact of various banking sector regulations and performance. The study found out that regulations contribute negatively to financial performance.

Based on the studies there is conflicting findings, varying gaps in literature and changes to operating environment due to passage of time, hence the need to conduct this study. Muiruri (2015) study did not bring out the aspect of deposit insurance and interest rate management.

Monyi (2017) and Olweny and Chiluwe (2012) did a study on commercial bank performance and all this studies did not consider the effect of deposit insurance, interest capping and credit reference bureaus which have been found to have a profound effect on performance. This study intends to cover that gap. The literature reviewed indicates that previous researchers only concentrated on a few variables of financial policies. This study covers additional important variables that were omitted by previous studies like Deposit Insurance Policy, Interest Management Policy especially the interest capping angle and credit risk management keeping a keen look on credit reference bureaus on credit risk management. This study therefore intends to fill these pertinent gaps in literature by studying the effects of financial sector policies on selected key performance indicators of commercial banks in Kenya.

2.7 Summary

The chapter has discussed in details the various study variables that include the capital adequacy, liquidity management, credit risk management, interest rate management, deposit Insurance and bank performance. The study also reviewed the theories relevant to the study this are Market Power Theory, Liquidity Preference Theory, Basel II Theory, Neoclassical Theory, and Adverse Selection Theory. The study also looked into the conceptual framework of the study which divided the variables into sub-variable and showed the direction of causation of the model. Empirical review covered a review of the finance literature regarding the theoretical justifications for financial sector policies in the financial system and the various approaches of gauging financial performance. The theoretical literature supports the regulation of the banking sector and removal of monopolistic tendencies in the market.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with research design, target population, sampling techniques and sampling size, data collection methods, pilot study of a collection of banks and data analysis and presentation. It also explains the overall design used for testing commercial bank performance through financial sector policies.

3.2 Research Philosophy

This research proposal was based on the positivism paradigm. The research paradigm of a study reflects the nature and approach taken when conducting research. Research paradigms can be identified by their research philosophy and research methods. Research philosophy relates to the development of knowledge and the nature of that knowledge (Saunders, Lewis, & Thornhill, 2009). New paradigms offer new ways to think about the world, new questions to ask and new ways to pursue them. This is the essential nature of paradigms as "worldviews," and those who value the possibilities that come from combining qualitative and quantitative methods need to promote a worldview that encourages others to share beliefs (Morgan & Morgan, 2007). Research methods on the other hand are the techniques used to gather and analyze data in a study.

Two research paradigms underpin a research, that is, positivism and social constructivism. The positivism stance was appropriate for this study based on the underlying assumptions of this paradigm relative to social constructivism. Positivism assumes in its understanding of the world that the environment and the events of interest are objective, external and independent of the researcher (Saunders et al., 2009). Social

constructivism, however, assumes that the understanding of the environment and events of interest in it are socially constructed and subjective from the researcher's point of view (Peter, Artur, & Peter, 2005). This study followed the principle of deduction as elucidated by positivism: hypotheses were first derived from a theory after which data was collected and tested empirically to support or reject the hypotheses. As a result of these methodological considerations, the research proposal relied on quantitative research methods.

3.3 Research Design

Research design describes a description of, and justification for, the chosen methodology and research methods (Polit and Beck, 2003). Polit and Beck (2003) further describe a research design as the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process. Kothari (2004) describe a research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Kombo and Tromp (2009) describe a research design as the review of the overall research aim, the literature and chosen research methods. Kothari (2004) states that research design facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible, yielding maximal information with minimal expenditure of effort, time and money.

This study used descriptive survey research design. Lavrakas (2008) describes a descriptive survey research design as a systematic research method for collecting data from a representative sample of individuals using instruments composed of closed-ended and/or open-ended questions, observations and interviews. It is one of the most widely used non-experimental research designs across disciplines to collect large amounts of survey data from a representative sample of individuals sampled from the targeted

population. Kothari (2004) and Orodho (2003) describe a descriptive survey design as a design that seeks to portray accurately the characteristics of a particular individual, situation or a group. According to Polit and Beck (2003), descriptive study involves observation, counting, delineation, and classification. Further, Polit and Beck describe descriptive research studies as studies whose main objective is the accurate portrayal of the characteristics of persons, groupsor situations, and/or the frequency with which certain phenomena occur.

Descriptive research design has been used in various studies to undertake a diverse of analyses. In view of the above definitions, descriptions and strengths, the descriptive survey proved the most appropriate design for this study. The mixed research design for this study included qualitative and quantitative research design.

This research design, combining survey methodology and qualitative case study was used due to the argument that multi-method approach enables triangulation to take place. Further, since each method has different effects and it will be difficult to ascertain the nature of that effect, use of different methods cancels out the 'methods effect' and would lead to higher confidence being placed on the conclusion (Saunders et al., 2003).

3.4 Target Population

Target population comprised of all the 44 commercial banks in the Kenya licensed as at 31st December, 2017 (Appendix II) the list of these companies was obtained from the secretariat of CBK, out of which information for 43 was accessible. A population is any finite or infinite collection of individual elements (Lavrakas, 2014). Hyndman and Booth (2009) argued a population to be the entire collection of 'things' in which we are interested, on the other hand, Target population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions (Johnson, 2012). Scheiber and Scheiber (2014) refers to the target population as the group of actors

most negatively affected by the problem that initiatives are attempting to overcome, they are the intended direct recipients and in some cases indirect recipients of an initiatives. The study used a census of all the forty three (43) commercial banks for secondary data licensed as at 31stDecember 2017 (Appendix II) the list of these banks was obtained from the secretariat of CBK their financial statements were used for secondary data. Primary data was selected from the executives in charge of financial performance in a bank who are Risk manager, Finance manager, credit manager and treasury managers (Mugenda &Mugenda, 2003).

Table 3.1: Target population

Bank Category	No. of Banks	No. of bank executives	Sample size
Foreign banks	31	4	124
Local banks	12	4	48
Total	43	4	172

Source: CBK, 2017

3.5 Sampling Frame

For this study, the sampling frame includes all the licensed commercial bank's operation in Kenya as at December 2017 as they appear in the CBK database and as laid on appendix II. The CBK supervision report of 2017 outlines the grouped number of employees in the banking sector as at December 31, 2017. The employment data is disaggregated between the various cadres of employees in the sector. The CBK supervision report also provides the list, physical address and contact details of all the commercial banks in Kenya. The concentration of this study was the management cadre. Lavrakas (2008) defines a sampling frame as a list of the target population from which the sample is selected and that for descriptive survey designs a sampling frame usually

consists of a finite population. Lavrakas (2008) also describe a sampling frame as a list of members of the research population from which a random sample may be drawn. Kothari (2004) and Mugenda and Mugenda (2003) define the term sampling frame as a list that contains the names of all the elements in a universe. Polit and Beck (2003) refer to a sampling frame as the technical name for the list of the elements from which the sample is chosen.

3.6 Sample and Sampling Technique

A census was used since there are 43 commercial banks whose data was accessible; the population was small and therefore manageable for a census. Sampling design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample (Kothari, 2004). It should be representative of the whole target population. This study used financial statements of commercial banks regulated by CBK as at 31st December 2017.

Kothari (2004) describes a sample as a collection of units chosen from the universe to represent it, a census was used since there are 43 commercial banks whose data was accessible, the population was small and therefore manageable for a census. Saunders, Lewis and Thornhill (2009) argued that sampling will only be necessary if; it will be impracticable to survey the entire population, there is budgetary constraint, there is expected time constraint and the population size is unmanageable. In addition, according to Kariuki (2013)'s study that used a sample of five commercial banks, argued that all commercial banks usually experience financial distress interchangeably and therefore a census was unavoidable for the current study.

3.7 Data Collection Methods

This sub-section involves the review of how data was collected for the study. Data was collected from both primary and secondary sources. Primary data was collected by administering questionnaires to respondents while secondary data was gotten from the Central Bank Supervision Report of 2017.

3.7.1 Primary Data

The research study used a questionnaire as a key instrument for primary data collection. Primary data is defined as first-hand information received from a respondent. Data that has been already collected and passed through the statistical process is secondary data (Kothari, 2004). Data is categorised into two parts namely,qualitative and quantitative (Pather, Erwin & Remenyi, 2003). Additionally, quantitative data can further be divided into discrete and continuous data. The use of questionnaires was preferred as it ensured confidentiality is upheld, save on time, and was easy to administer. The questionnaire was ideal because the researcher was able to collect information from a larger sample. It also gave a greater feeling of anonymity hence encouraged open responses to sensitive questions and hence was free from bias and so accurate and valid data was gathered. The questionnaire used was structured (closed-ended) and unstructured (open ended) to elicit specific responses for quantitative and qualitative analysis respectively. Some of the closed-ended questions required a response on a five-point Likert scale, showing to what extent each policy influenced performance.

The extracted information strongly influenced by the respondent, who acted and interpreted his/her environment on the basis of the previous experiences. So every interview generated a subjective informative product shaped by the interviewees' experiences. The format that was applied in this survey was the interview guide

approach, where the wording of the questions were predetermined, but the sequence

determined during the conversational flow. The advantage of this approach is that it makes data collection more systematic and ensures that certain topics and issues of interest are covered (Patton, 2002).

3.7.2 Secondary Data

Secondary data was used to analyse the performance of commercial banks. The secondary data was derived from published financial statements, the Central Bank of Kenya Bank Supervision Report and published research papers. This assisted in theanalysis of data. Secondary data is available from other sources and may already have been used in previous research, making it easier to carry out additional research. Moreover, secondary data is time-saving and cost-efficient: the data was collected by someone other than the researcher. Administrative data and census data may cover both larger and much smaller samples of the population in detail. Information collected by the government will also cover parts of the population that may be less likely to respond to the census.A clear benefit of using secondary data is that much of the background work needed has already been carried out, such as literature reviews or case studies. The data may have been used in published texts and statistics elsewhere, and the data could already be promoted in the media or bring in useful personal contacts. Secondary data generally have a pre-established degree of validity and reliability which need not be re-examined by the researcher who is re-using such data.

The data collection covered an eight (8) year period from 2010 to 2017, this period of eight years was selected for the study in order to establish the changes in commercial bank over time and to base the analysis on as recent data as possible. This could also be important since several banking regulations for financial institutions had been put in place. Kosikoh (2014) argued that a period of more than five years could help in the computation of various ratios of both the independent and dependent variables for several years for better analysis. Therefore, data about the dependent and independent

variables was collected from the financial statements of various financial institutions using secondary data collection guide/form. The secondary data collected was assets, equity, liabilities and other financial information that was necessary for data analysis.

3.8 Pilot Study

According to Sekeran (2003), a pilot study is necessary for testing the reliability of data collection instruments. A pilot study is thus conducted to test weaknesses in design and instrumentation to provide proxy data for selection of a sample. Reliability speaks of the consistency of a measure. A test is considered reliable if the same result is got repeatedly (Cooper and Schindler, 2003). The pilot study was done by selecting 38 respondents from the target population. Which comprised of 10% of the target population as recommended by (Patton, 2002). The respondents were issued with the questionnaire. The data obtained was evaluated to ensure that questions were properly answered.

3.8.1 Reliability of Research Instruments

Cronbach's alpha a coefficient of reliability that gives an unbiased estimate of data generalizability was used to test the reliability of the answered questionnaires. According to Zinbarg (2005), Cronbach's alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability. A Cronbach's alpha of greater than 0.6 is acceptable for research instrument.

The reliability coefficient value was also tested for significance at $\alpha = 0.05$

3.8.2 Validity Test of Research Instrument

Validity refers to ability of research instrument to measure what it purports to measure or that an account accurately representing features that it is intended to describe, explain or theorize (Kothari, 2003). Several types of validity were applied in this study. For

example, internal validity, which seeks to demonstrate that the explanation of a particular event, issue or set of data, which a piece of research provides, can actually be sustained by data? This was addressed by using multiple researchers, peer examination of data and use of mechanical means to record, store and retrieve data. Content validity was tested by ensuring questionnaire covered fairly and comprehensively the domain or items that it purports to cover.

3.9 Data Collection Procedures

The questionnaire was organized into four sections. The first section of the questionnaire dealt with demographic statistics such as name, age and years of service of the employees. The other sections included questions from the four objectives. A covering letter was provided on the first page. To make high response rate, the researcher delivered the questionnaires to the respondents personally after making an appointment. The researcher also enlisted the services of a research assistant to ensure as much data as possible will be collected.

3.10 Data Analysis and Presentation

According to Mugenda and Mugenda (2003), data analysis is the process of bringing order, structure and meaning to the mass of information collected. Data analysis methods employed involved quantitative and qualitative procedures.

3.10.1 Quantitative Analysis

Quantitative data was analyzed using descriptive statistical methods. The study adopted a descriptive analysis by use of descriptive statistics such as the measure of central tendency. Quantitative data analysis was aided by SPSS (Statistical Package for Social Sciences) version 17 to generate those measures since percentages are the most widely

used in descriptive analysis Mugenda and Mugenda, (2003). SPSS Version 17 has descriptive statistics characteristics that assist in variable response comparison and gives a clear indication of response frequencies (Mugenda and Mugenda, 2003).

3.10.2 Qualitative Analysis

Qualitative data was analyzed using content analysis. In addition, a linear regression model on the effects of Financial Sector policies versus commercial bank performance was applied to examine the relationship between the variables. The model treated commercial bank performance as the dependent variable while the independent variables was Government Financial policy including; Liquidity, Interest rate, Capital Adequacy, Credit Risk management and deposit insurance policies. These data were analyzed and inference made about the study. The responses on the study were measured by computing indices based on the responses derived from the Likert-Scaled questions.

In order to analyse the relationships between the dependent variable and independent variables, a conceptual framework and multiple linear regression analysis was adopted. The study employed the linear regression model to analyse the role of Financial Sector policies on financial performance among commercial banks. Given that the data had both time series and cross-sectional dimensions; the study estimated a linear panel regression. The study adopted a model similar to that used by many of the studies done in the area of regulation and financial performance (Muiruri, 2015; Ngumi, 2013).A multiple linear regression analysis was preferred because the study has multiple explanatory variables which is best analysed by the method. The commercial bank performance had deemed a function of selected variables of financial attributes to an individual adopted from Hardouvelis (2010) given as:

$$Y == \beta 0 + \beta_1 DI_{it} + \beta_2 IR_{it} + \beta_3 CRM_{it} + \beta_4 LM_{it} + \beta_5 CA_{it} + \varepsilon_{it}$$

Where Y is ROA_{it} = Return on assets of Banks i at time t and

ROE_{it} =Return on equity of Bank i at time t

β_0 = Constant

(βi; i=1,2,3,4) = Regression coefficients values

(DIi; CAi; CRMi; LMi+CA_{it}; i=1,2,3,4,5) = values of various independent variables

ε_{it} =the residual error term of the regression

DI_{it}= Deposit Insurance of bank*i* at time *t.*

CA_{it} = Capital Adequacyof banks *i* at time *t.*

CRM_{it}= Credit Risk Management of banks *i* at time *t.*

LM_{it}= Liquidity Management of banks *i* at time *t.*

IR_{it}= Interest Rate Management of banks *i* at time *t*

t = 2010….2016

3.11 Variable Definition and Measurement

The study applied structured questionnaires, which contained closed and open-ended questions and using disclosures from financial statements. The questionnaire consisted of three parts. Part one and two, which established general information about the respondent and commercial bank performance, while part three dealt with the effect of financial sector policies. Most questions in questionnaire were on likert scale. In likert scale, the subjects were asked to which extent they agreed or disagreed about an issue. The responses were given in the form of a (usually 5-point) scale (Bowling, 1997). The

following table 3.3 provides an overview of proxy variables, which were used in the study testing the effect of financial sector policies on commercial bank performance by use of questionnaire and interview guide.

Table 3.1: Primary Data Variable Definition and Measurements

Variable	Indicators	Measurement Scale
Liquidity Management	• Current Assets • Current Liabilities • Cash Reserve Ratio	5-point Likert Scale
Credit Risk Management	• Nonperforming Loans • Asset Quality	5-point Likert Scale
Deposit Insurance	• Deposit loan ratio • Moral Hazard	5-point Likert Scale
Capital Adequacy	• Total Capital • Core Capital • Regulatory Capital • Risk Based Capital	5-point Likert Scale
Interest Rate Mgt	• Central Bank Rate • Money Market Rate • Kenya Bankers Reference rate	5-point Likert Scale

Table 3.2: Secondary data Variables measurement

Variable	Proxy definitions	How to measure
Independent		
Liquidity	DLIQ	Quick Assets to Total liabilities ratio (QAL) = Cash and Cash equivalents (quick assets) ÷ Total Liabilities
		Quick Assets to Total deposits (QAD) = Cash and cash equivalent (quick Assets) ÷ Total Customer Deposits
Interest Rate	DIQ	Interest Income ÷ Loans
		Debt to assets ratio (DAR) = Debt ÷ Total Assets
Deposit Insurance	DI	Operating expense ratio (OER) = OE ÷ Gross Interest Income;
		Net worth turnover ratio (NWTR) = Gross Interest Income ÷ Net worth (net assets)
Credit Risk Management	ASQ	NPL to Total loans ratio = Total Non - Performing Loans ÷ Total Loans;
		Loan loss provision to income ratio = Loan loss provision ÷ Operating income
Capital Adequacy	CAD	Capital adequacy ratio (CAR) =Core Capital ÷ TRWA
		Leverage ratio (LR) = Total Capital ÷ Total Assets
Dependent		
Financial performance	FP	Return on equity (R.O.E) = Net Profit after tax ÷ Total Equity Capital
		Return on asset (R.O.A) = Net Profit after tax ÷ Total Asset

3.12 Diagnostic Tests and Hypothesis Testing

3.12.1 Unit Root Test

The first step involved testing the order of integration of the individual variables in the study. Researchers have developed several procedures for the test of order of integration. The most popular ones are Augmented Dickey-Fuller (ADF) test (Paparoditis and Politis, 2016) and the Phillip-Perron (PP) due to Phillips (1987) and Phillips and Perron (1988). Augmented Dickey- Fuller test relies on rejecting a null hypothesis of unit root test (the variables are non-stationary) in support of the alternative hypotheses of stationary. For this study, the Unit Root Test was carried out to know whether the data of the variables were stationary with respect to time.

3.12.2 The Co-Integration Test

The second step is testing the presence or otherwise of co-integration between the variables of the same order of integration through forming a co-integration equation. The basic idea behind co-integration is that if in the long run, two or more variables moved closely together, even though the variables themselves were trended, the difference between them will be a constant. It is possible to regard these variables as defining a long-run equilibrium association, as the difference between them is stationary (Hall and Henry, 1989). A lack of co-integration suggests that such variables have no long-run relationship: in principle, they can wander randomly far away from each other (Dickey, 1991). The study employed the maximum-likelihood test procedure established by Johansen and Juselius (1990) and Johansen (1991) in testing. The test for co-integration was performed using Johansen maximum-likelihood estimation approach. Under this approach, trace test statistics were used to test whether a long run relationship existed among the variables.

3.12.3 Analysis of Variance (ANOVA)

Analysis of Variance is used to determine whether the means of the generations are all equal. Homogeneity of variance is used to determine equal variance between the groups. Homogeneity of variance tests the following hypotheses: H0 = There are no differences between two or more variances and H1 = There are differences between two or more variances. When significance level $p \leq .050$, H0 should be rejected, and H1 is supported. Equal variance is assumed when conducting ANOVA.

3.12.4 Skewness and Kurtosis Test

Skewness measures the degree of asymmetry of a distribution around its mean. Positive skewness indicates a distribution with an asymmetric tail extending toward values that are more positive. Negative skewness indicates a distribution with an asymmetric tail extending toward values that are more negative. Kurtosis measures the degree to which a distribution is more or less peaked than a normal distribution. Positive kurtosis indicates a relatively peaked distribution. Negative kurtosis indicates a relatively flat distribution. Skewness and Kurtosis were used to measure symmetric distribution and peakness of a distribution respectively (Mbui, 2016). The values of asymmetry and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution.

The skewness and kurtosis are within the expected ranges of chance fluctuations in that statistic (i.e. ±SES and ± SEK) this implies that the distribution has no significant skewness and kurtosis problem.

3.12.5 The Kolmogorov-Smirnov and Shapiro-Wilk Tests

These tests were used to compare the scores in the sample to a normally distributed set of score; with the same mean and standard deviation. If the test is non-significant ($p > .05$) it shows that the distribution of the sample is not significantly different from a

normal distribution (i.e. it is probably normal). If, however, the test is significant (p <.05) then the distribution in question is significantly different from a normal distribution (Kilungu, 2015). It is argued that (K-S test) is used to decide if a sample comes from a population with a completely specified continuous distribution. The null hypothesis of this test is that the data follow a specified distribution and an alternative hypothesis tells that the data do not follow it.

3.12.6 Auto Correlation Test

Correlation means the existence of some definite relationship between two or more variables. The Durbin-Watson statistics is a test for autocorrelation, which is based on the assumption of time series. It should be close to two or more to show lack of autocorrelation (Ithai, 2013). The size of Durbin-Watson statistic, which depends on the number of predictors and number of observation, as conservative rule of thumb, valueless as one or greater than three are definitely cause for concern.

3.12.7 Normality Test

According to Rawlings, Pantule and Dickey (2001) normality is needed for tests of significance and construction of confidence interval estimates of the parameters. This is so because the t-tests and F-test expected to be conducted for hypothesis testing are assumed to follow normal distributions. To detect non-normality, Rawlings et al.(2001) advises the use of plots of observed residuals $\boldsymbol{\varepsilon}$ for each variable and measures of skewness and kurtosis. The plots will show the shape of the curve and whether it is near bell shaped. Skewness coefficient for a normal distribution is 0 while kurtosis coefficient is 3.0. Any other measure derived will mean that the distribution is asymmetrical, too flat or too peaked. To correct non-normality, respective variables will be transformed using the square root or logarithmic transformation.

Empirically, normality though one of the assumptions of ordinary least regression, it is not a precondition for such modelling. Indeed, according to Rawlings, Pantule and Dickey (2001) normality is needed for tests of significance and construction of confidence interval estimates of the parameters. This is so because the t-tests and F- test expected to be conducted for hypothesis testing are assumed to follow normal distributions. To test for normality, this study applied skewness/kurtosis test of normality (Sktest).

Sktest determined the probability of skewness and kurtosis given as Pr (skewness) and Pr (kurtosis) and the joint probability chi square test with accompanying *p* values. Sktest implements the test as described by Kothari, 2004). The joint probability and attendant *p* values was compared by α=5%. In which case a lower a higher p value was inferred that the joint skewness/ kurtosis probability is insignificant meaning that normality can be assumed if f significant remedies will be sought by transformation of variables towards normalisation.

3.12.8 Linearity

When linear regression is applied, an assumption is made that the relationship between the response variable and the predictors is linear. A violation of this assumption means that the linear regression will try to fit a straight line to data that does not follow a straight line. To identify nonlinearities, the study plotted an augmented component-plus-residual plot, also known as augmented partial residual plot. Using the command acprplot in Stata. The study considered plots of residuals against the regressor variables and attempt to fit a line of best fit. Where linearity could not be observed, remedies such as data transformations were evoked.

3.12.9Constant variance (Homoskedasticty)

An important assumption is that the variance in the residuals has to be homoskedastic or constant. According to Stock and Watson (2011) by default Stata assumes homoskedastic standard errors. To detect heteroskedasticity the study performed Breusch-Pagan test and tested the null hypothesis that residuals are homoskedastic.

3.12.10 Multicolinearity

Using the variance inflation factor (VIF) which is a measure of how much the variance of an estimated regression coefficient increases if the explanatory variables are correlated, as a rule of thumb, a variable whose VIF values are greater than 10 may merit further investigation. Tolerance, defined as 1/VIF, may also be used to check on the degree of collinearity. A tolerance value lower than 0.1 is comparable to a VIF of 10. In addition, this research used correlation coefficient and variance inflation factor (VIF) tests to verify multicollinearity since numerous studies such as Hair et al. (1998) and Kennedy (2008) highlight that a VIF of more than 10 points rules out harmful multi-collinearity.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the research that was conducted to test both the conceptual model and research hypotheses. The chapter describes the results of statistical analysis to test the hypotheses and at the same time presents the discussions of the results and conclusions from the findings.

4.2 Pilot Study Results

A pilot study was conducted to pre-test the tool used in data collection. Thirty-eight questionnaires were administered to 38 commercial banks, which were randomly selected. Among the 38 banks that were piloted, thirty-two banks responded translating to a response rate of 84 %. An internal consistency was done using Cronbach's Alpha to measure how well the items were correlated to each other for all the questionnaires issued to different groups of pilot respondents. The rule of the thumb for Cronbach Alpha is that the closer the alpha is to 1 the higher the reliability (Sekaran, 2003) and a value of at least 0.7 is recommended.

Table 4.1: Summary of Cronbach's Alpha Reliability Coefficient

Reliability Statistics	Number of items	Cronbach's Alpha
Capital Adequacy (CA)	5	0.920
Liquidity Management(BL)	5	0.884
Credit Risk Management (CRM)	6	0.863
Interest Rate Management(IR)	5	0.817
Deposit Insurance Management (DI)	7	0.882

Cronbach alpha statistic assesses the extent to which the items intended to measure a given construct are interrelated and whose variance is derived from a common source (Netemeyer et al., 2003). Highly correlated items suggest that items are measuring the same latent variable. Robinson et al. (1991) advocate an alpha score of 0.8 while DeVellis (1991) considers 0.7-0.8 as respectable, 0.8-0.9 as very good whilst greater than 0.9 should result in the scale length being reduced. Clark and Watson (1995) concur with Nunally (1978) that 0.7 should be a minimum figure of acceptability with 0.8 and above adding little to the scale's reliability. Consequently, in line with these authors, the alpha coefficients of the measurement scales in this study which were all above the 0.7 threshold were considered robust, hence all the items for each sub-scale were retained and the questionnaire adopted for the survey.

Interest rate management had an alpha of 0.817, capital adequacy had alpha of 0.920 credit risk management 0.863 and liquidity management 0.884. All the measures had Cronbach's Alpha values greater than 0.7, which fall in the acceptable limit. This indicated a strong internal consistency among measures of variable items. This implied that respondents who tended to select high scores for one item were likely to select high scores for the others. Similarly, those who selected low scores for one item were likely to select low scores for the others. The data collection instrument was therefore reliable and acceptable for the purposes of the study. This enhanced the ability to predict outcomes using the scores and just the aggregation of the arithmetic mean.

4.3 Regression Results for Secondary Data

This section presents the results for multiple regression analysis the first being financial performances represented by return on assets and return on equity against each of the construct for each variable. The construct which were not significant were dropped but those which were significant were retained and regressed in the optimal equation. In this research the natural logarithms of the actual values of the variables were used to deal with the problem of large numbers and eliminate Heteroscedasticity were calculated

using the e-views software. Random and fixed effects model was used after applying Hausman test.

4.3.1 Hausman Test

The Hausman test statistic is a transformation of difference between the parameter estimates from fixed effects and random effects estimation that becomes asymptotically $\chi 2$ chi- square distributed under null hypothesis. Hausman tests the null hypothesis of an absence of correlation between individual specific effects and the regressors. The basic idea for the test is that under the null hypothesis of orthogonality both OLS and GLS are consistent while under alternate hypothesis is not consistent. For this thesis, the values were then differenced (1^{st} difference) to ensure the data is stationary but before regression, a Hausman test was used to determine whether to use the fixed effects or random effects model to address objectives of this study.

Table 4.2: Hausman Test

	Return on assets (DROA)	Return on equity (DROE)
Chi-Sq. Statistic	7.965140	6.299273
Prob.	0.5377	0.7096

From the table 4.2 The Hausman test is distributed as chi-square with 1 degree of freedom. From the table Return on assets (DROA) show the probability of the cross section random effects was 0.5377, which is greater than 0.05 implying that it's appropriate to adopt random effects model. For return on equity (DREO) the probability was 0.7096, which was > 0.05 hence we conclude that the test selected the random effects model.

4.3.2 Financial Performance and Credit Risk Management policy

The null hypothesis **H_{o1}:** Credit risk management policy has no significant influence on financial performance of commercial banks in Kenya.

Table 4.3: Regression of ROA on Credit Risk Management policy

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCR1	0.008889	0.122157	0.072771	0.9420
DCR2	0.284456	0.153862	1.848774	0.0657
DCR3	-0.370670	0.119944	-3.090353	0.0022
C	-0.009918	0.035650	-0.278202	0.7811
Weighted Statistics				
R-squared	0.058107	Mean dependent var	0.038635	
Adjusted R-squared	0.046667	S.D. dependent var	0.496043	
S.E. of regression	0.484330	Sum squared resid	57.94028	
F-statistic	5.079304	Durbin-Watson stat	2.381078	
Prob(F-statistic)	0.001981			
Unweighted Statistics				
R-squared	0.058107	Mean dependent var	0.038635	
Sum squared resid	57.94028	Durbin-Watson stat	2.381078	

Regression results of DROA with credit risk indicators

Dependent Variable: DROA

Method: Panel EGLS (Cross-section random effects)

From the table 4.3 above the model is significant at 1% level as the probability value was less than 0.01. The Durbin- Watson value was 2.381078 indicating that there was no autocorrelation problem (Garson, 2012; Alsaeed, 2005). The Durbin-Watson value should be around 2, if the value of Durbin-Watson is below 1 then there is serial correlation. The value of R-squared was 0.0581 showing that credit risk indicators explain 5.8% variance in performance indicator return on assets.

The partial regression coefficient for Loan to deposit ratio DCR1 was 0.00889 shows that with influence of other explanatory variables held constant increase in one percent in Loan to deposit ratio makes Return on assets to increase by 0.00889 per cent. The partial regression coefficient for Capital adequacy DCR2 was 0.284456 shows that with influence of other explanatory variables held constant increase in one percent in capital adequacy make Return on assets DROA to increase by 0.284456 per cent. Loan to total deposit ratio (DCRI) and capital adequacy ratio (DCR2) had coefficients 0.0089 and 0.2845 respectively though not significant with performance proxy return on assets. Other researchers found contradicting result like research on effects of credit risk indicator on shareholders value of commercial banks in Iran showed significant negative effects of capital adequacy (Hamed, Sanaz & Hadi, 2013).

Gross non-performing loans ratio (DCR3) as a measure of credit risk had a coefficient of -0.370670 with a probability of 0.0022 thus significant at 1% level (p value < 0.01) this shows that gross non-performing loans ratio had a negative relationship with return on assets as a measure of performance for commercial banks in Kenya. This that implies that 0.37067 being the regression coefficient for Gross non-performing loans ratio shows that with influence of other explanatory variables held constant increase in one percent in gross non performing loans makes Return on assets to decrease by 0.37067 per cent. This research agrees with results of other researchers who also found a negative relationship between non-performing loans ratio as a measure of credit risk and performance (Asad, Syed, Wasim & Rana, 2014; Abdelrahim, 2013; Boahene, Dasah & Agyei, 2012) while others whose research contradicts this research found non-performing loans ratio had a positive and significant relationship to measures of performance (Li & Zou, 2014; Harison & Joseph, 2012; Shaffer, 2012).

It can be concluded that based on the results above for Gross non-performing loan (DCR3) and return on assets, this research rejects the first null hypothesis that credit risk management policy has no significant influence on financial performance of commercial banks in Kenya.

The regression equation for credit risk proxies becomes;

$$Y_{DROA} = 0.0099 + 0.00889\ DCR1 + 0.28446DCR2 – 0.3707\ DCR3$$

4.3.3 Financial Performance and Interest Rate Management Policy

The null hypothesis **H_{o2}:** Interest rate management policy has no significant influence on financial performance of commercial banks in Kenya.

Table 4.4: Regression of ROA and Interest Rate Proxies

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIR1	0.019624	0.155327	0.126342	0.8996
DIR2	0.265714	0.111040	2.392955	0.0175
C	0.036183	0.032937	1.098540	0.2730
Weighted Statistics				
R-squared	0.024710	Mean dependent var	0.038635	
Adjusted R-squared	0.016845	S.D. dependent var	0.496043	
S.E. of regression	0.491848	Sum squared resid	59.99468	
F-statistic	3.141719	Durbin-Watson stat	2.302948	
Prob(F-statistic)	0.044933			
Unweighted Statistics				
R-squared	0.024710	Mean dependent var	0.038635	
Sum squared resid	59.99468	Durbin-Watson stat	2.302948	

Dependent Variable: DROA

Method: Panel EGLS (Cross-section random effects)

From the table 4.4 above the model was significant at 5% level as the probability value was 0.0449 which less than 0.05. The Durbin- Watson value was 2.3029 indicating that there is no autocorrelation problem (Garson, 2012; Alsaeed, 2005). The value of R-squared was 0.0247 showing that interest rate policy proxies explain 2.47% variance in performance indicator return on assets. The partial regression coefficient for Loan to total assets ratio DIR1 was 0.0196 shows that with influence of other explanatory variables held constant increase in one percent in Loan to total assets ratio makes Return on assets to increase by 0.0196 per cent. The partial regression coefficient for interest

income to total loans DIR2 was 0.2657 shows that with influence of other explanatory variables held constant increase in one percent interest income to total loans DIR2 make Return on assets DROA to increase by 0.2657 per cent.

Interest income to total loans (DIR2) had a coefficient 0.2657 with a p value of 0.0175 the relationship was positive and significant at 5% level. Zairy and Salina (2010) in a similar research on Islamic banks exposures to rate of return and risk found that Islamic banks had a significant positive correlation between interest rate risk and performance. Loans to total asset ratio (DIR1) has a coefficient of 0.01962 which is not significant as the p value was greater than 0.05. Kolopo and Dapo (2015) found similar results in research for the period 2002 to 2011 in Nigeria a sample of tier one-capital banks, using fixed effects regression analysis method interest rate had insignificant effect on banks performance.

It can be concluded that based on the results above for interest income to total loans (DIR2) and return on assets this thesis rejects the second null hypothesis that interest rate risk has no significant influence on financial performance of commercial banks in Kenya. The regression equation for the model then becomes,

$$Y_{DROA} = 0.0362 + 0.0196\ D\ IR1 + 0.266 DIR2$$

4.3.4 Financial Performance and Liquidity Management Policy

The null hypothesis $\mathbf{H_{o3}}$: Liquidity Management Policy has no significant influence on financial performance of commercial banks in Kenya.

Table 4.5: Regression of Return on Assets and Liquidity Management Policy

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCR1	0.451822	0.193305	2.337351	0.0202
DCR2	-0.294881	0.182674	-1.614249	0.1077
C	0.029085	0.031984	0.909386	0.3640
Weighted Statistics				
R-squared	0.030655	Mean dependent var	0.038635	
Adjusted R-squared	0.022838	S.D. dependent var	0.496043	
S.E. of regression	0.490346	Sum squared resid	59.62898	
F-statistic	3.921455	Durbin-Watson stat	2.318165	
Prob(F-statistic)	0.021053			

Dependent Variable: DROA

Method: Panel EGLS (Cross-section random effects)

From the table above 4.5 the model was significant at 5% level as the probability value was 0.021 which less than 0.05. The Durbin- Watson value was 2.3029 indicating that there is no autocorrelation problem. The value of R-squared was 0.0307 showing that liquidity risk indicators explain3.07% variance in performance indicator return onassets. The partial regression coefficient for Liquid assets to total assets ratio DLQ1 was 0.452 shows that with influence of other explanatory variables held constant increase in one percent in Liquid assets to total assets ratio makes Return on assets DROA to increase by 0.452 per cent. The partial regression coefficient for Liquid assets to total deposits DIR2 was -0.295 shows that with influence of other explanatory variables held constant increase in one percent interest income to total loans DIR2 make Return on assets DROA to decrease by 0.295 per cent.

Liquid assets to total assets ratio (DLQ1) had a coefficient of 0.452 with a p value of 0.0202 which was significant at 5% level. Similar research by other authors found liquidity risk significant and positively correlated to a net interest margins a measure of performance for European countries (Chortareas, Girardone & Ventouri, 2011). Liquid asset to total deposit ratio (DLQ2) had a coefficient of -0.2949 thus a negative

relationship to performance proxy return on assets (DROA) the p value was 0.108 which means that it was not significant at 5% level. Ongore and Kusa (2013) research on the relationship between liquidity risk and profitability for Kenyan banks in 2008-2011 was insignificant.

It can be concluded that based on the results above for Liquid assets to total assets ratio (DLQ1) and return on assets, this thesis rejects the third null hypothesis that liquidity risk has no significant influence on financial performance of commercial banks in Kenya. The regression equation for the model then becomes;

$$Y_{DROA} = 0.0291 + 0.451\ DLQ1 - 0.2948DLQ2$$

4.3.5 Financial Performance and Deposit Insurance Policy

The null hypotheses **H_{04}:** Deposit Insurance has no significant influence on financial performance of commercial banks in Kenya.

Table 4.6: Regression of ROA with Deposit Insurance Policy

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DROA(-1)	-0.200380	0.061272	-3.270327	0.0012
DIR	0.021042	0.030847	0.682154	0.4959
C	0.017780	0.031011	0.573366	0.5670
Unweighted Statistics				
R-squared	0.049712	Mean dependent var	0.007344	
Sum squared resid	42.38070	Durbin-Watson stat	2.215081	

DROA

Method: Panel EGLS (Cross-section random effects)

From the table 4.6 above the model was significant at 5% level as the probability value was 0.00396 which less than 0.05.

Using two a sided test at 5% significance which has the critical value of 1.96 since the test value 0.4972 is smaller than the critical value it can be inferred that the error terms are not serially correlated. The value of R-squared was 0.0497 showing that Deposit Insurance explain 4.97% variance in performance indicator return on assets. The lagged return on assets introduced as an independent variable had a coefficient of -0.2004. The model was significant at 5% level as p value was 0.0012 which is less than 0.05.

The partial regression coefficient for Deposit Insurance Policy DIXR, was 0.021, shows that with influence of other explanatory variables held constant increase in one percent in Deposit Insurance DIXR makes Return on assets DROA to increase by 0.021 per cent. Deposit Insurance had a coefficient of 0.021042 thus a positive relationship though not significant. Ding (2012) in their research for 34 European countries agree with this finding where Deposit insurance does not improve performance of the model thus it was not significant. Similar research found that foreign loans to total assets as proxy for deposit insurance had negative relationship to earnings for US large commercial firms (Ling, Alex & Micheal, 2014).

It can be concluded that based on the results above Deposit Insurance policy (DIXR) and return on assets proxy for financial performance, fails to rejects the fourth null hypothesis that Deposit Insurance Policy has no significant influence on financial performance of commercial banks in Kenya. The regression equation for the model then becomes;

$$Y_{DROA} = 0.0178 + 0.021\ DIXR - 0.2004DROA(-1)$$

4.3.6 Financial Performance and Capital Adequacy Policy

The null hypothesis **H_{o5}:**Capital Adequacy has no significant influence on financial performance of commercial banks in Kenya.

Table 4.7: Regression of ROA with Capital Adequacy

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCA	0.887730	0.023751	37.37632	0.0000
C	-0.140807	0.014457	-9.739577	0.0000
Weighted Statistics				
R-squared	0.857439	Mean dependent var	0.035819	
Adjusted R-squared	0.856822	S.D. dependent var	0.506304	
S.E. of regression	0.191586	Sum squared resid	8.478867	
F-statistic	1389.364	Durbin-Watson stat	1.634552	
Prob(F-statistic)	0.000000			
Unweighted statistics				
R-squared	0.855716	Mean dependent var	0.039258	
Sum squared resid	8.670601	Durbin-Watson stat	1.598407	

Dependent Variable: DROA

Method: Panel EGLS (Cross-section random effects)

From the table 4.7 above the model was significant at 1% level as the probability valuewas 0.000 which less than 0.01. The Durbin- Watson value was 1.6346 indicating that there is no autocorrelation problem. The value of R-squared was 0.8574 showing that capital adequacy explain 85.74 % variance in performance indicator return on assets. From the table capital adequacy (DCA) had coefficient of 0.8877 that shows that the relation was positive and the p value was 0.000 thus significant at 1% level. Pariyada (2013) agrees with the findings of this research where capital adequacy was a major component in sensitivity of bank stock returns thus the relationship was positive and significant for Thai commercial bank. It can be concluded that based on the results above capital adequacy (DCA) and return on assets (ROA) proxy for financial performance, this research to rejects the fifth null hypothesis that Capital Adequacy has no significant influence on financial performance of commercial banks in Kenya. The regression equation for the model then becomes;

$$Y_{DROA} = -0.1408 + 0.8877\ DCA$$

4.3.7 Optimal Regression for Return on Assets

Table 4.8: Optimal Regression of DROA Using Random Effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DROA(-1)	-0.011054	0.016257	-0.679935	0.4973
DCR3	-0.103563	0.047755	-2.168663	0.0313
DIR2	0.113755	0.026426	4.304642	0.0000
DLQ1	0.014209	0.018387	0.772759	0.4406
DCA	0.942691	0.017895	52.68007	0.0000
C	-0.144898	0.008930	-16.22596	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.114689	1.0000
Weighted Statistics				
R-squared	0.934368	Mean dependent var	0.009106	
Adjusted R-squared	0.932711	S.D. dependent var	0.462815	
S.E. of regression	0.120055	Sum squared resid	2.853809	
F-statistic	563.7677	Durbin-Watson stat	1.517124	
Prob(F-statistic)	0.000000			
Unweighted statistics				
R-squared	0.934368	Mean dependent var	0.009106	
			1.517124	

Regression of return on assets DROA using random effects

Dependent Variable: DROA

Method: Panel EGLS (Cross-section random effects)

The table 4.8 above show the regression model of return on assets and various financial policies. In this section the following variables were included in the optimal regression model as they were significant in the previous analysis, they include Interest income to total loans ratio (DIR2), Gross non-performing loans ratio (DCR3), DCA Capital Adequacy and Liquid assets to total assets ratio DLQ1.The model was significant at 1% level of significance p value < 0.01 thus feasible model that is the model fitness showed strong relationship between the stated financial risks and

performance of the commercial bank hence the model is stable. The Durbin-Watson statistic was 1.517 but due to using lagged ROA this thesis had to use Durbin Watson h which is suitable when lagged independent variable is used.

Using two a two sided test at 5% significance which has the critical value of 1.96 since the test value 1.9910 is smaller than the critical value it can be inferred that the error terms are not serially correlated (Garson, 2012; Alsaeed, 2005). The value of R square was 0.9344 which means credit risk policy, capital adequacy, lagged return on assets explain 93.44% of variance in performance measure return on assets.

Interest income to total loans ratio (DIR2) a measure of Interest rate policy had a coefficient of 0.1138 with a p value 0.0000 (p value < 0.01) this was significant at 1% level thus Interest income to total loans ratio had a positive relationship with return on assets as a measure of performance for commercial banks in Kenya. Zairy and Salina (2010) agrees with the findings of this research where they found a strong positive correlation between rate of return risk and performance. Zagonov, Kiswani and Mash (2009) findings do not agree with the findings of this research where performance was negatively correlated to interest rate risk this could be explained by the fact that management failed to hedge the risk.

Gross non-performing loans ratio (DCR3) as a measure of credit risk had a coefficient of -0.1036 with a probability 0.0313 it was significant at 5% level (p value < 0.05) this shows that gross non-performing loans ratio had a negative relationship with return on assets as a measure of performance for commercial banks in Kenya. Several researchers agree with the findings of this research where they found a negative and significant relationship between non-performing loans ratio as a measure of credit risk and performance (Asad, Syed, Wasim & Rana, 2014; Abdelrahim, 2013; Boahene, Dasah & Agyei, 2012). Research by other authors found contradicting results where non-performing loans ratio had a positive and significant relationship to measures of performance (Li & Zou, 2014; Harison & Joseph, 2012).

DCA Capital Adequacy had a coefficient of 0.9427 with a p value of 0.0000 (p value <0.01) this shows that it is significant at 1% level thus market risk had a positive relationship with return on assets as a measure of performance and it's significant. According to Pariyada (2013) in a similar research on sensitivity of stock returns for Thai commercial banks, the results were that capital adequacy was a major component in sensitivity of bank stock returns hence agreeing with the finding of this research as large banks were found to be more sensitive to changes in market conditions than medium and small banks.

Liquid assets to total assets ratio DLQ1 had a coefficient of 0.0142 with a p value of 0.4406 (p value > 0.05). This shows that liquid assets to total assets ratio was not significant to performance. This could be due to the fact that statutory requirement for liquidity set by the CBK was 20% while the average liquidity ratio stood at 38.1% and 37.7% respectively for 2015 and 2014 respectively This could be due to effects of Basel III Capital requirements aimed at providing banks with sufficient reserves so as to with stand future crises. The regression equation for the model used in this thesis becomes;

$$Y_{DROA} = -0.1449 - 0.1105\ DROA\ (-1) - 0.1036DCR3 - 0.1138\ DIR2 + 0.0142DLQ1 + 0.9427DCA.$$

From the equation, it shows that if all variables were zero return on Assets would be -0.1213. The partial regression coefficient for Gross non-performing loans ratio DCR3 was -0.1036 show assuming other explanatory variables are constant increase in one percent in Gross non-performing loans ratio DCR3 makes Return on Assets DROA todecrease by 0.1036 per cent.

The partial regression coefficient for Capital adequacy DCA was 0.9427 show assuming other explanatory variables are constant increase in one percent in capital DCA makes Return on Assets DROA to increase by 0.9427 per cent. The partial regression coefficient for Liquid assets to total assets ratio DLQ1 as proxy for liquidity policy was 0.0142 show assuming other explanatory variables are constant increase in one percent in Liquidity policy makes Return on Assets DROA to increase by 0.0142 per cent. The partial regression coefficient for Interest rate income to total loans DIR2 as a proxy of interest rate risk was -0.1138 show assuming other explanatory variables are constant increase in one percent in Interest rate income to total loans DIR2 makes Return on Assets DROA to decrease by 0.1138 per cent.

While the partial regression coefficient for lagged return on Assets DROA (-1) was -0.0664 show assuming other explanatory variables are constant increase in one percent in lagged return on equity DROE (-1) makes Return on assets DROA to decrease by 0.0664 per cent.

4.4 Primary Data Analysis

This section presents the findings and discussion in the order of the five specific objectives of the study. Frequencies and descriptive statistics are presented first followed by inferential statistics. The questionnaire responses were based on a likert scale which was coded, the values assigned to the likert were SD=strongly disagree, D=disagree, N=neutral, A=agree and SA=strongly agree.

4.4.1Performance of Commercial Banks in Kenya-(Dependent variable)

The study sought to investigate performance of commercial banks in Kenya (independent variable) performance was assessed by four measures namely Return on Equity, Return on Assets, Retained Earnings and Return on Investment.

4.4.2 Descriptive Results of Financial Performance of Commercial Banks in Kenya

In this study, commercial bank performance represents the financial performance of the banks measured by Return on Equity and Return on Assets. Bank performance also can be seen in comparison with the related industry as a benchmark. Table 4.5 shows five item questions that represent bank performance.

Table 4.9: Descriptive Results of Financial Performance of Commercial Banks in Kenya

Statements	Mean	SD
1. The return on equity in the last five years has been on an increasing trend	4.27	0.537
2. The bank has an increasing return on assets in the last five years	4.37	0.577
3. The bank has better return on equity than industry average (benchmarks)	4.37	0.611
4. The bank has better return on assets than industry average (benchmarks)	4.29	0.611
5. The overall risk threshold in the bank has been lower than the industry average	4.28	0.574
Average	4.015	.706

The responses were tabulated in table 4.5 and analyzed using mean and standard deviation on a likert scale. In the likert scale where SA represented strongly agree and SD represented strongly disagree (Likert, 1932). The questions concern managers' judgment on return on equity and its benchmarks and return on assets and its benchmarks. The result indicates55% of the respondents agreed that the bank had an increasing rate of return on equity in the last five years. Fifty-eight percent (58%) noted that the bank had an increasing rate of return on assets in the last five years. As concerns the industry, 57.5% of the respondents indicated that the bank had average return on

equity just like the industry average while 47% agreed that the bank had lowerreturn on assets than industry average. Hence, the researcher deduced that the banks had average to below average performance on both return on equity and assets in the industry.

4.4.3 Sample Adequacy Results on Performance of Commercial Banks

Prior to the extraction of the factors, several tests were used to assess the suitability of the respondent data for factor analysis. These tests include Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO index, in particular, is recommended when the cases to variable ratio are less than 1:5. The KMO index ranges from 0 to 1, with 0.50 considered suitable for factor analysis. The Bartlett's Test of Sphericity should be significant ($p<.05$) for factor analysis to be suitable (Costello & Osborne, 2015).

Table 4.10: Performance of Commercial Banks KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.731
Bartlett's Test of Sphericity	Approx. Chi-Square	100.958
	Df	10
	Sig.	.000

The KMO test of 0.731 showed that factor analysis could be carried out because KMO lied between 0 and 1. Bartlett’s test of sphericity was (Chi-square 100.958, $p<0.0001$) which was within the acceptable level to test for significance and validity of the data collected to the research problem.

4.4.4 Factor Analysis Results of Performance of Commercial Banks

Factor analysis was done on bank performance measures. Factor analysis is a branch of multivariate analysis procedure that attempts to identify any underlying 'factors' that are responsible for co variation among group independent variables. The goals of factor analysis are typically to reduce the number of variables used to explain a relationship or to determine which variables show a relationship. The constructs were subjected to a variance tests through the principal component analysis test. This test was meant to identify a group of components or factors, which were able to explain most of the information carried by other variables. The aim is to make it easy to interpret the results or to come up with generalizations, which could be applied to the general constructs. The four measures of performance were subjected to factor analysis and the results showed that there were two critical factors driving the use of derivatives in listed companies, which accumulated to 83.828% of the total variance in this construct. Factor 1 had the highest variance of 41.692% while factor two had 39.895%. These two factors had the greatest influence on corporate hedging. This is because they all had Eigen values of more than 1.

Table 4.11: Performance of Commercial Bank Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.085	41.692	41.692	1.854	46.342	46.342	1.757	41.692	41.692
2	.934	18.684	60.375	1.499	37.486	83.828	1.596	39.895	83.828
3	.763	15.257	75.633						
4	.617	12.340	87.973						

Extraction Method: Principal Component Analysis

4.3.5 Performance of Commercial Bank Rotation Component Matrix Results

Table 4.11 depicts the rotated component factor loadings for performance of bank measures. The components were return on equity and return on assets been identified in Table 4.12

Table 4.12: Descriptive Results of Financial Performance of Commercial Banks in Kenya

StatementsComponent	1	2
1. The return on equity in the last five years has been on an increasing trend		0.957
2. The bank has an increasing return on assets in the last five		0.996
3. The bank has better return on equity than industry average (benchmarks)	0.475	
4. The bank has better return on assets than industry average (benchmarks)	0.354	
5. The overall risk threshold in the bank has been lower than the industry average	0.652	
Average	4.015	.706

Extraction Method: Principal component analysis

Rotation method: Varimax with Kaiser Normalization

All variables of ROE (Return on equity) and ROA(Return on assets) had a factor loading of more than 0.4 which is indicates, the component values indicate that they are highly interrelated with each other

Table 4.13: Performance Descriptive Results

Variable	Mean	Std. Deviation	Cronbach's Alpha
Return on Equity	4.015	.49033	.965
Return on Assets	4.4649	.60057	.963

Cronbach's alpha was used to test the reliability of the proposed constructs. The findings indicated that return on equity had a coefficient of 0.965 while return on assets had a coefficient of 0.963. Financial performance measure depicted Cronbach's alpha of 0.941 which is above the suggested value of 0.7 hence the study was reliable.

Table 4.13 presents the average financial performance of commercial banks as expressed by ROA and ROE for the year 2010 to 2017.The study found that the mean value of the average ROA was 4.0 with minimum and maximum values of 2.6 and 4.7 respectively. In terms of standard deviations, the ROAhad 42.7%, which shows high dispersion of ROA from its mean for the commercial banks in Kenya. This result was higher than the result Muiruri and Memba (2015) and of Ongore and Kusa (2013) study. These findings were consistent with the findings of Flamini et al. (2009). The results revealed that the mean value of ROE was 28.66 with minimum and maximum values of 25 and 30.9 respectively. In terms of standard deviations, the ROE had 25%, which shows low dispersion of ROE from its mean for the commercial banks in Kenya.

The study result was almost twice that of Ongore and Kusa (2013) study that found14.8%for the year 2001 to 2010.From the results above it can be concluded that on average the financial performance of commercial banks in Kenya has continued to improvefrom 2010-2017 to the financial performance of banks in other developing countries, hence the overall financial performance of commercial banks in the country is good. This is consistent with the findings of Flamini et al. (2009). According to Flamini et al. (2009), the average ROA in Sub-Saharan Africa, (SSA) was about 2%. Thus, the

average ROA of Kenyan banks is double average of the SSA. This could have resulted in improved bank financial performance which was observed by the average ROA and ROE for the sector as a whole as 4.0 and 28.66 respectively in the year 2009 to 2013 from the one reported by Ongore and Kusa (2013) study results that had revealed that ROA, and ROE was 1.95 and 14.8 respectively for the year 2001 to 2010. Casu et al. (2011) who argued securitization reduces cost of funds; achieves reliable and constant funding source, credit exposure, enhance liquidity, diversifies and brings about favourable regulatory/accounting treatment, which lead to increased profit, supported this.

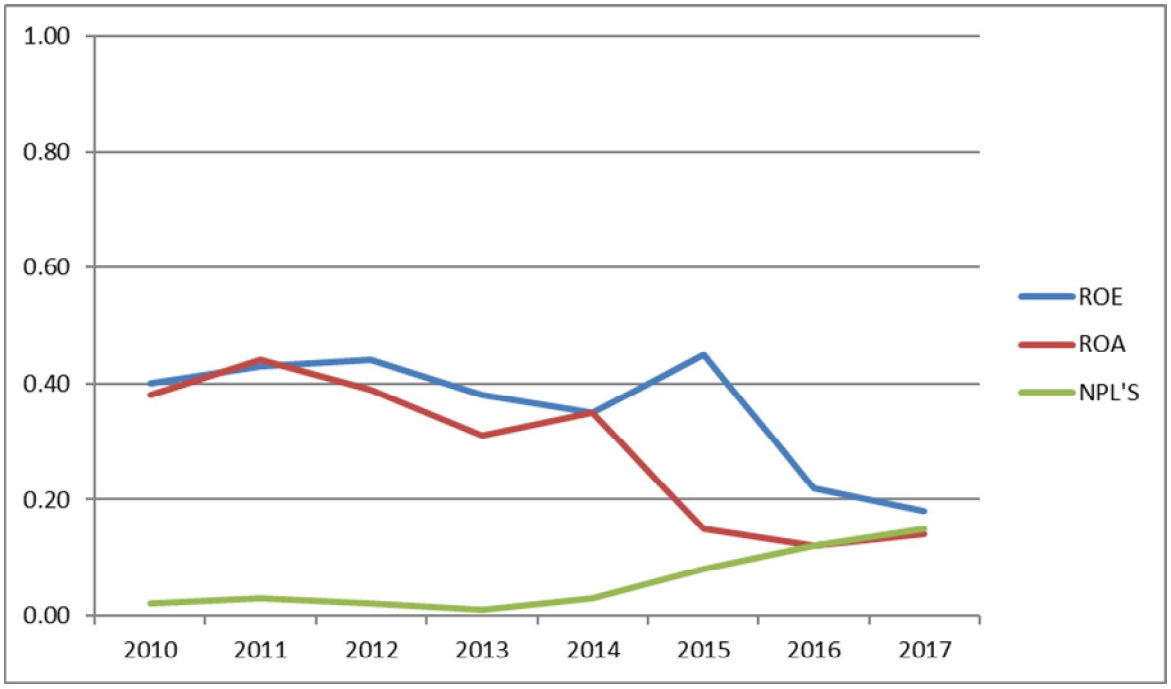

Figure 4.1: Commercial Bank Performance for the 7-year period

The results illustrated in figure 4.1 shows the trend in commercial shows trend analysis of commercial bank performance measured by ROE (Return on Equity), ROA (Return on Assets) and NPL's (Non-Performing Loans).It can be seen that the ROE and ROA from 2010-2015 was on an average of 0.4 and thereafter from 2015-2017 a sharp

decrease of the performance indicators was realised on performing loans had a low constant figure from 210-2013 which averaged to 3% of the total loan book for the period but from 2014-2017 a sharp increase of the non-performing loans was realised. These findingsare consistent with Monyi and Namusonge (2017) and Mwongela (2016) who found the commercial bank performance in Kenya from 2010-2015 was above the east African average. The above findings can be attributed to the growth of microfinance sector due to a vibrant small-scale business growth in the period between 2010-2015 but the growth in the banking sector was later slowed down by interest rate capping which stifled credit market hence increase in NPLs and lower levels of profitability.

4.5 Liquidity Management Policy on Commercial Bank Performance

This section presents results for the first objective which analyses the effect liquidity management has on commercial bank performance.

4.5.1 Descriptive Results of Liquidity Management Policy

The first objective of the study was to establish if liquidity management affects performance of commercial banks in Kenya. The respondents were asked to indicate the extent of their agreement with given statements on and table 4.15 shows questions that represent issues on liquidity management policy. The responses were tabulated in table 4.15 and analyzed using mean and standard deviation on a likert scale, In the likert scale SA represented strongly agree and SD represented strongly disagree (Likert, 1932). The questions concern managers' judgment on liquidity management how it affects the bank's financial performance.

Table 4.14: Effect of liquidity management policies on commercial bank performance

Statements	Mean	SD
1. The bank has an adequate information system for reporting liquidity requirements.	4.54	0.516
2. The system is integrated in the overall management information systems of the bank.	4.58	0.519
3. The bank has a process of assessing cash inflows against its outflows to identify the potential for any shortfall.	4.47	0.571
4. The bank has maintained a statutory minimum of twenty per cent (20%) of all its deposit liabilities, matured and short term liabilities in liquid asset.	4.51	0.509
5. There are regular, independent reviews and evaluations of the effectiveness of the system.	4.45	0.499

Table 4.14 indicates statements on Liquidity management policies. The first statement on the adequacy of liquidity reporting system had a mean of 4.54 and standard deviation of 0.516. Integration of the system to the management information system of the bank had a mean of 4.58 and standard deviation of 0.519. The bank has adequate system to monitor both cash inflows and outflows and had a mean of 4.47 and standard deviation of 0.571. As to whether the bank maintains a statutory deposit of 20% on liabilities and assets, the mean of was 4.51 and standard deviation of 0.509. Lastly as to whether there are independent reviews on the monitoring system of liquidity, the mean was 4.45 and standard deviation of 0.499.The mean score of the responses was 4.51, which show that liquidity management policies positively influenced the growth of bank performance. The average standard deviation of 0.5228 indicates that 58% of the responses were spread within one standard deviation from the mean score. These findings are consistent with those of Muiruri (2015) and Ngumi (2013).

4.5.2 Sample Adequacy Results on Liquidity Management Policy

Bartlett's Test of Sphericity was used at significant level of $p < .05$) to confirm that liquidity has patterned relationships.

Table 4.15: KMO and Bartlett's Test Table

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.669
Bartlett's Test of Sphericity	Approx. Chi-Square	150.872
	Df	10
	Sig.	.000

Indeed, these tests show patterned relationships amongst the variables ($p<.001$).Firm liquidity was determined whether it was suitable for exploratory factor analysis by looking at the Kaiser-Meyer- Olkin Measure (KMO) of Sampling Adequacy (cut- off above. 50).

4.5.3 Factor Analysis Results on Liquidity Management Policy

The objective sought to investigate the effect of level of liquidity management policy on commercial bank's performance in Kenya. Liquidity management was assessed by four measures namely, current assets, current liabilities, customer deposits, and loans granted. The factors were identified after carrying out factor analysis, the two factors which had the biggest influence on liquidity. Factor one was called current assets which had the first three constructs. Factor two was current liabilities with one construct whose means have been identified in table 4.16.

The broad purpose of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood. It is normally used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts (Yong and Pearce, 2013). Barth et al (2013) argued that factor

analysis operates on the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality.

Table 4.16: Liquidity Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.016	40.326	40.326	2.016	59.460	40.326	40.326	1.743	59.372
2	1.037	20.743	61.070	1.037	16.804	20.743	61.070	1.310	76.264
3	.829	16.580	77.649						
4	.650	12.993	90.643						
5	.468	9.357	100.000						

Extraction Method: Principal Component Analysis

The above table shows that two factors (called ‘components’ in this analysis) have been entered into the rotated solution. These two factors account for about 76.264% of the total variance amongst the five items. This table shows actual factors extracted. In section labelled “Rotation Sums of Squared Loadings,” it shows only those factors that met cut-off criterion (extraction method). In this case, there were two factors with eigen values greater than one. The “% of variance” column shows how much of the total variability (in all of the variables together) can be accounted for by each of these summary scales or factors. Factor one account for 40.32% of the variability in all six variables and factor two accounts for 20.74 %.

4.5.4 Liquidity Management Rotation Component Matrix Results

Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Yong and Pearce, 2013). Ultimately, simple structure attempts to have each factor define a distinct cluster of interrelated variables so that interpretation is easier (Cohen *et al.,* 2011). One criterion that can be used to determine the number of factors to retain is Kaiser's criterion, which is a rule of thumb.

This criterion suggests retaining all factors that are above the eigen value of 1 (Kaiser, 1960). Another criterion is based on Jolliffe's criterion, which recommends retaining factors above .70 (Jolliffe, 1986).

Table 4.17: Liquidity Management Rotation Component Matrix Results

Components	1	2
1. The bank has an adequate information system for reporting liquidity requirements.		0.716
2. The system is integrated in the overall management information systems of the bank.		0.619
3. The bank has a process of assessing cash inflows against its outflows to identify the potential for any shortfall.	0.956	
4. The bank has maintained a statutory minimum of twenty per cent (20%) of all its deposit liabilities, matured and short term liabilities in liquid asset.	0.912	
5. There are regular, independent reviews and evaluations of the effectiveness of the system.	0.651	

Extraction Method: Principal component analysis

Rotation method: Varimax with Kaiser Normalization

All the variables of liquidity had a factor loading of higher than 0.4. Rusuli et al. (2013), showed that each individual variable must have value of 0.4 and above. Therefore, thecomponent values indicate that they are highly interrelated with each other (rotatedcomponent analysis). The descriptive statistics for summated final measurement scale for liquidity management policy is shown in Table 4.18.

Table 4.18: Liquidity Descriptive Results

Variable	Mean	Std. Deviation	Cronbach's Alpha
Cash reserve ratio	4.4675	.39639	.799
Current assets/current liabilities	4.2306	.42833	.826

Cronbach's alpha was used to test the reliability of the proposed constructs (Ali et al., 2016). The findings indicated that cash reserve ratio had a coefficient of 0.799 while current assets and liability had a coefficient of 0.826. Liquidity measures depicted Cronbach's alpha of 0.918, which is above the suggested value of 0.7, hence the study was reliable.

It has been argued that both criteria may result in overestimation in the number of factors extracted (Field, 2009).This study adopted Kaiser Criterion. The above table shows that two 'components' in this analysis have been entered into the rotated solution. Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Cohen et al., 2011).

4.5.5 Liquidity Management Policy and Commercial Bank Performance Correlation Results

In order to establish the relationship between liquidity management and commercial bank performance in Kenya, a correlation matrix was used. Table 4.19 shows the correlationmatrix. It shows a varied degree of interrelationships between liquidity and commercial bank performance in Kenya. The Pearson correlation coefficient was generated at a significant level of five percent (2-tailed). The output indicates a positive relationship between liquidity and commercial bank performance in Kenya. Liquidity had positive coefficient, which indicated that commercial bank performance increased with increase in liquidity and vice versa. Liquidity management and commercial bank performance were found to have moderate correlation (r=0.558) in commercial bank performance since they were statistically significant at 5% level. This result was similar to Muiruri (2015), who found that liquidity is positive and significant to bank performance. Liquidity is positive and significant to commercial bank performance because liquidityassists term deposits, especially when they fall. Overall, these results can be interpreted as evidence that liquidity management is a key variable in averting financial distress (Monyi, 2017).

Table 4.19: Liquidity Correlations Results

Variables		Commercial bank Performance	Liquidity
Commercial bank performance	Pearson Correlation	1	.558**
	Sig. (2-tailed)		.000
	N	385	385
Liquidity	Pearson Correlation	.558**	1
	Sig. (2-tailed)	.60	
	N	0	385

**. Correlation is significant at the 0.05 level (2-tailed).

The PPMC results revealed that transaction cost factors, that is, brokerage costs and agency costs had significant and positive relationships with bear market performance with correlation parameters of r=.588 (ρ = .000; n = 490) and r = .721(ρ=.000; n=490) respectively. These findings implied that retail investors who perceived brokerage costs as being determinants of bear market performance were more likely to report a bear market performance at the NSE. Similarly, retail investors who perceived agency costs as a determinant of bear market performance were more likely to report a bear market performance on the NSE. The factor scores were used to run multivariate regression analyses with the two factors of transaction cost as pred.

4.5.6 Liquidity Management ANOVA Results

Analysis of variance (ANOVA) was used to test whether the regression analysis model used is fit or the relationship of the variables just occurred by chance. Significance of F ratio is used to determine whether model used was fit or not. If the F ratio is statistically significant, the model used is considered fit and vice versa. The F statistics tends to be greater when the null hypothesis of independence is not true. P values of less than 0.05 indicates that the F statistic is high and that the null hypothesis of independence needs to be rejected since it is not true. In this case the F ratio (F=1.33, p=0.000) was found to be statistically significant hence the model used for analysis was fit. These results are presented in Table 4.20.

Table 4.20: Liquidity Management ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	77.604	5	15.521	1.333	.320[a]
	Residual	128.081	11	11.644		
	Total	205.684	16			

a. Dependent Variable: Commercial Bank Performance

b. Predictors: (Constant), Liquidity

4.5.7 Liquidity Management Goodness-of-fit Model Results

The results of liquidity indicated that the explanatory power of liquidity on commercial bank performance was slightly low as it accounted for 12.8 percent of the variability of change in the commercial bank performance (R square = 0.128).

Table 4.21: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.358[a]	.128	.122	.533

a. Predictors: (Constant), Liquidity

Liu and Rodriguez (2014) studied relation between liquidity and commercial bank performance. Their findings concur with those of this study that there is weak evidence to support that liquidity reduce costs of bankruptcy and financial distress in corporate hedging.

4.5.8 Regression results of Liquidity Management and Commercial Bank Performance

The aggregate mean scores of firm liquidity measures (independent variable) were regressed on the aggregate mean scores of corporate hedging measures (dependent variable). The research findings were outlined in Table 4.21.To assess the influence of firm liquidity on corporate hedging of listed companies in Kenya, the study had set the following hypothesis;

1. Hypothesis One

H_{01}: There is no statistical significant effect of liquidity Management Policy on commercial bank performance in Kenya.

Table 4.22: Regression Coefficients of Liquidity Management Policy

		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	0.549	20.015		1.215	.250
	Liquidity	6.614	2.794	.487	2.367	.037

The individual regression results in Table 4.22 reveal statistically significant positive linear relationship between liquidity and commercial bank performance ($\beta = 0.549$, P-value = 0.000). The firm liquidity coefficients are presented in table4.19 show that firm liquidity contributes significantly to the model since the p-value for the constant and gradient is less than 0.05. The fitted equation is

$$Y= 6.614 + 0.549X_{2.}$$

Hence, H_{oA} is accepted since $\beta \neq 0$ and P-value>0.05. It can be concluded that there is statistically significance effect of liquidity Management Policy on commercial bank performance in Kenya. These findings collate with the study of Muiruri (2015) who found out that liquidity is positive and significant since majority of the respondents indicated that the organization had experienced liquidity problems in the last five years and that liquidity ratio affected the performance of the bank largely.

4.6 Capital Adequacy Management Policy on Commercial Bank's Performance

This section presents results for the second objective which analyses the effect capital adequacy management has on commercial bank performance in Kenya.

4.6.1 Descriptive Results of Capital Adequacy Management Policy

The second objective of the study was to establish whether capital adequacy affects financial performance of commercial banks in Kenya. The respondents were asked to indicate the extent of their agreement with given statements. Table 4.23 shows questions that represent issues on capital adequacy management policy. The responses were tabulated and analyzed using mean and standard deviation on a likert scale. In the likert scale SA represented strongly agree and SD represented strongly disagree (Likert, 1932). The questions concerned managers' judgment on liquidity management and how it affects the bank's financial performance.

Table 4.24 shows that the average mean and standard deviation was 4.40 and 0.511 respectively, hence 86% agreed with the assertion that they maintain a minimum risk based capital while 10% disagreed and 4% were indifferent. Also 77% agreed that the bank maintains a risk based approach to capital adequacy with 6% disagreeing. The mean score of the responses is 4.40, which show that capital adequacy influences positively to the performance of commercial banks in Kenya. The average standard deviation of 0.511 indicates that 68% of the responses were spread within one standard

deviation from the mean score. These findings are consistent with those ones of Muiruri (2015) which found that capital requirement did not improve commercial bank performance.

Table 4.23: Effect of Capital Adequacy Policies on Commercial Bank Performance

Statements	Mean	SD
1. The bank maintains a core capital of not less than eight per cent of total risk weighted assets and risk weighted off-balance sheet items.	4.41	0.501
2. The bank maintains a core capital of not less than eight per cent of its total deposit liabilities.	4.51	0.501
3. The bank maintains a risk-based approach to capital adequacy measurement applies to both on and off - balance sheet items. The bank assesses and provides for these risks in the evaluation of their respective capital adequacy levels.	4.42	0.501
4. The bank submits to Central Bank of Kenya the return on Capital to Risk Weighted Assets, Form CBK/PR3, at the end of every month, received by the 10th day of the following month.	4.41	0.509

4.6.2 Sample Adequacy Results on Capital Adequacy Management Policy

Bartlett's Test of Sphericity was used at significant level of $p < .05$) to confirm that capital adequacy has patterned relationships as shown in table 4.24.

Table 4.24: KMO and Bartlett's Test Table

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.569
Bartlett's Test of Sphericity	Approx. Chi-Square	108.085
	Df	10
	Sig.	.000

Indeed, these tests show patterned relationships amongst the variables ($p < .001$).Capital Adequacy was determined whether it was suitable for exploratory factor analysis by looking at the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy (cut-off above. 50).

4.6.3 Factor Analysis Results on Capital Adequacy Management Policy

The objective sought to investigate the effect of capital adequacy management policy on commercial bank's performance in Kenya. Capital adequacy management was assessed by four measures namely, total capital, core capital, risk based capital, and regulatory capital. The factors were identified after carrying out factor analysis. The two factors which had the biggest influence on capital adequacy. Factor one was core capital which had the first three constructs. Factor two was risk based capital with one construct whose means have been identified in table 4.26.

The broad purpose of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood. It is normally used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts (Yong & Pearce, 2013). Bartholomew, Knott and Moustaki (2011) argued that factor analysis operates on the notion measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality.

Table 4.25: Capital Adequacy Total Variance Explained

	Initial Eigen values			Extraction Sums of Square Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.792	35.831	35.831	1.792	35.831	35.831	1.469	1.743	35.831
2	1.128	22.558	58.389	1.128	22.558	58.389	1.451	1.310	57.265
3	.892	17.834	76.222						
4	.663	13.261	89.483						
5	.526	10.517	100.000						

Extraction Method: Principal Component Analysis

Table 4.25 shows that two factors (called 'components' in this analysis) have been entered into the rotated solution. These two factors account for about 57.265% of the total variance amongst the five items. This table shows actual factors extracted. In section labeled "Rotation Sums of Squared Loadings", it shows only those factors that met cut-off criterion (extraction method). In this case, there were two factors with eigen values greater than one. The "% of variance" column shows how much of the total variability (in all of the variables together) can be accounted for by each of these summary scales or factors. Factor one account for 35.83% of the variability in all five variables and factor two accounts for 22.55 %.

4.6.4Capital Adequacy Management Rotation Component Matrix Results

Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Yong and Pearce, 2013). Ultimately, simple structure attempts to have each factor define a distinct cluster of interrelated variables so that interpretation is

easier (Cohen et al., 2011). One criterion that can be used to determine the number of factors to retain is Kaiser's criterion, which is a rule of thumb. This criterion suggests retaining all factors that are above the Eigen value of 1 (Kaiser, 1960). Another criterion is based on Jolliffe's criterion, which recommends retaining factors above .70 (Jolliffe, 1986).

Table 4.26: Effect of Capital Adequacy Policies on Commercial Bank Performance

Components	1	2
1. The bank maintains a core capital of not less than eight per cent of total risk weighted assets and risk weighted off-balance sheet items.	0.754	
2. The bank maintains a core capital of not less than eight per cent of its total deposit liabilities.	0.654	
3. The bank maintains a risk-based approach to capital adequacy measurement applies to both on and off - balance sheet items. The bank assesses and provides for these risks in the evaluation of their respective capital adequacy levels.		0.501
4. The bank submits to Central Bank of Kenya the return on Capital to Risk Weighted Assets, Form CBK/PR3, at the end of every month, received by the 10th day of the following month.		0.844

Extraction Method: Principal component analysis

Rotation method: Varimax with Kaiser Normalization

All the variables of capital adequacy had a factor loading of higher than 0.4. Rusuli et al. (2013),showed that each individual variable must have value of 0.4 and above. Therefore, the component values indicate that they are highly interrelated with each other (rotated component analysis)

Table4.27: Capital Adequacy Descriptive

Variable	Mean	Std. Deviation	Cronbach's Alpha
Risk based Capital	4.1845	.40636	.957
Regulatory Capital	4.4684	.57088	.946

Cronbach's alpha was used to test the reliability of the proposed constructs (Ali et al., 2016). The findings indicated that risk based capital and had a coefficient of 0.957 while regulatory capital had a coefficient of 0.946. Capital adequacy measures depicted Cronbach's alpha of 0.818 which is above the suggested value of 0.7, hence the study was reliable.

It has been argued that both criteria may result in overestimation in the number of factors extracted (Field, 2009).This study adopted Kaiser Criterion. The above table shows that two 'components' in this analysis have been entered into the rotated solution. Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Cohen et al., 2011).

4.6.5 Capital Adequacy Management Policy and Commercial Bank Performance Correlation Results

In order to establish the relationship between capital adequacy Management and commercial bank performance in Kenya a correlation matrix was used. Table 4.28 shows the correlation matrix it shows a varied degree of interrelationships between capital adequacy and commercial bank performance in Kenya. The Pearson correlation coefficient was generated at a significant level of five percent (2-tailed). The output indicates a negative relationship between capital adequacy and commercial bank performance in Kenya. Capital adequacy had a negative coefficient, which indicated that

commercial bank performance reduced with increase in capital and vice versa.Capital adequacy management and commercial bank performance were found to have moderate correlation (r=-2.97) in commercial bank performance since they were statistically significant at 5% level. This result was similar to Muiruri (2015), who found that capital is negative and significant to bank performance.

Table 4.28: Capital Adequacy Correlations Results

Variables		Commercial bank performance	Liquidity
Commercial bank	Pearson Correlation	1	-2.97**
Performance	Sig. (2-tailed)		.000
	N	202	202
Capital Adequacy	Pearson Correlation	-2.97**	1
	Sig. (2-tailed)	.60	
	N	202	202

4.6.6 Capital Adequacy Management ANOVA Results

Analysis of variance (ANOVA) was used to test whether the regression analysis model used is fit or the relationship of the variables just occurred by chance. Significance of F ratio is used to determine whether model used was fit or not. If the F ratio is statistically significant, the model used is considered fit and vice versa. The F statistics tends to be greater when the null hypothesis of independence is not true. P values of less than 0.05 indicates that the F statistic is high and that the null hypothesis of independence needs to be rejected since it is not true. In this case the F ratio (F=0.822, p=0.000) was found to be statistically significant hence the model used for analysis was fit. These results are presented in Table 4.29.

Table 4.29: Capital Adequacy Management ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.094	5	.019	.822	.559[a]
	Residual	.251	11	.023		
	Total	.344	16			

a. Dependent Variable: Commercial Bank Performance

b. Predictors: (Constant), Capital Adequacy

4.6.7 Capital Adequacy Management Goodness-of-fit Model Results

The results of capital adequacy indicated that the explanatory power of capital on commercial bank performance was slightly low as it accounted for 12.8 percent of the variability of change in the commercial bank performance (R square = 0.272).

Table4.30: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521[a]	.272	-.059	.15098

a. Predictors: (Constant), Capital Adequacy

4.6.8 Regression results of Capital Adequacy Management and Commercial Bank Performance

The aggregate mean scores of Capital Adequacy measures (independent variable) were regressed on the aggregate mean scores of commercial bank performance measures (dependent variable) and the research findings were outlined in Table 4.30.To assess the effect of capital adequacy on commercial bank performance in Kenya, the study had set the following hypothesis.

Hypothesis Two

H_{01}: There is no statistically significance effect of capital adequacy management policy on commercial bank performance in Kenya.

Table 4.31: Regression Coefficients of Capital Adequacy Management Policy

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	2.342	1.866		1.255	.236
	Capital Adequacy	-.297	.232	-.359	-1.283	.226

The individual regression results in Table 4.32 reveal statistically significant negative linear relationship between capital adequacy and commercial bank performance (β = -0.359, P- value = 0.000). The capital adequacy coefficients are presented in Table 4.32.

The results show that capital adequacy contributes significantly to the model since the p-value for the constant and gradient is less than 0.05. The fitted equation is

$$Y= -0.297 + -0.359X_{2.}$$

Hence, H_{oA} is accepted since $\beta \neq 0$ and P-value>0.05. It can be concluded that there is statistically significance effect of capital adequacy management policy on commercial bank performance in Kenya. These findings collate with the study of Muiruri (2015) who found out that capital requirement is negative and significant since majority of the respondents indicated that the organization had experienced problems in the last five years and increase in capital requirement ratio affected the performance of the bank largely.

4.7 Deposit Insurance Management Policy on Commercial Bank's Performance

This section presents results for the third objective which analyses the effect Deposit Insurance management has on commercial bank performance in Kenya.

4.7.1 Descriptive Results of Deposit Insurance Management Policy

The third objective of the study was to establish whether deposit insurance affects financial performance of commercial banks in Kenya. The respondents were asked to indicate the extent of their agreement with given statements. Table 4.33 shows questions that represent issues on deposit insurance management policy. The responses were tabulated in table 4.32 and analyzed using mean and standard deviation on a likert scale. In the likert scale SA represented strongly agree and SD represented strongly disagree (Likert, 1932). The questions concern managers' judgment on deposit insurance management how it affects the bank's financial performance.

Table 4.32: Effect of Deposit Insurance Policies on Commercial Bank Performance

Statements	Mean	SD
1. Deposit insurer has a formal mandate, consistent with public policy objectives, which specify its role, responsibilities and specific powers, its extend, its functionality to include supervision of banks, preventive action and risk/loss-minimization.	4.24	0.508
2. Deposit insurance has governance features to ensure that it is operationally independent and insulated from undue influence from the government, industry and regulatory/supervisory authority.	4.05	0.860
3. Deposit insurance coverage includes the domestic operations of foreign banks and the foreign operations of domestic banks.	4.32	0.557
4. Deposit insurance introduces a moral hazard issue, encouraging both depositors and banks to take on excessive risks.	2.66	0.595
5. Deposit insurance premiums risk-adjusted and has systems for assessing risks and calculating risk-adjusted premiums as well as the range of premiums applied to the assessed base.	4.17	0.754
6. The financial system safety net provides a framework for the early detection and timely intervention and resolution of troubled banks.	4.30	0.496
7. The current deposit coverage limit is sufficient and it effectively covers over 80% deposits in the bank.	4.07	0.875

Table 4.32 shows that the average mean and standard deviation was 4.12 and 0.605 respectively which shows that deposit insurance influences positively to the performance of commercial banks in Kenya. The average standard deviation of 0.605 indicates that 70% of the responses were spread within one standard deviation from the mean, hence, it is significant and therefore we fail to reject the null hypothesis which states that deposit insurance has an effect in performance of commercial banks in Kenya. Hence 77% of the respondents agreed with the assertion that deposit insurance does not introduce moral hazard in the system and lives up to its mandate. 7% disagreed and16%

were indifferent. Also 65% agreed that the deposit insurance premiums are risk based. 5% disagreed and 30% were indifferent. This implies the Kenyan deposit insurance should be risk based to capture the systematic risk.

These findings are consistent with those ones of a study in Nigeria which was about risk management and bank performance in Nigeria, which found that deposit insurance had a risk reducing effect but also increased moral hazardhence affected commercial bank performance.

4.7.2 Sample Adequacy Results on Deposit Insurance Management Policy

Bartlett's Test of Sphericity was used at significant level of $p < .05$) to confirm that liquidity has patterned relationships.

Table4.33: KMO and Bartlett's Test Table

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	199.579
	Df	21
	Sig.	.000

Indeed, these tests show patterned relationships amongst the variables ($p < .001$).Capital Adequacy was determined whether it was suitable for exploratory factor analysis by looking at the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy (cut- off above. 50).

4.7.3 Factor Analysis Results on Deposit Insurance Management Policy

The objective sought to investigate the effect of deposit insurance management policy on commercial bank's performance in Kenya. Deposit Insurance Management was assessed by four measures namely, moral hazard, bank run, deposits, and loan ratio. The

factors were identified after carrying out factor analysis, the one factor, which had the biggest influence on deposit insurance was deposit to loan ratio. The broad purpose of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood. It is normally used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts (Yong and Pearce, 2013). Bartholomew, Knott and Moustaki (2011) argued that factor analysis operates on the notion measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality.

Table 4.34: Deposit Insurance Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.441	34.868	34.868	2.441	34.868	34.868	1.469	1.743	34.868
2	.969	13.839	48.706						
3	.865	12.351	61.057						
4	.800	11.430	72.487						
5	.770	10.998	83.485						

Extraction Method: Principal Component Analysis.

The above table shows that one factors (called ‘components’ in this analysis) have been entered into the rotated solution. These one factor accounted for about 83.485% of the total variance amongst the five items. This table shows actual factors extracted. In section labeled “Rotation Sums of Squared Loadings,” it shows only those factors that met cut-off criterion (extraction method). In this case, there were two factors with eigen values greater than one. The “% of variance” column shows how much of the total variability (in all of the variables together) can be accounted for by each of these summary scales or factors.

4.7.4Deposit Insurance Management Rotation Component Matrix Results

Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Yong & Pearce, 2013). Ultimately, simple structure attempts to have each factor define a distinct cluster of interrelated variables so that interpretation is easier (Cohen et al., 2011). One criterion that can be used to determine the number of factors to retain is Kaiser's criterion which is a rule of thumb. This criterion suggests retaining all factors that are above the eigenvalue of 1 (Kaiser, 1960). Another criterion is based on Jolliffe's criterion which recommends retaining factors above .70 (Jolliffe, 1986).

Table 4.35: Effect of Deposit Insurance Policies on Commercial Bank Performance

Component	1
Deposit insurer has a formal mandate, consistent with public policy objectives, which specify its role, responsibilities and specific powers it extend its functionality to include supervision of banks, preventive action and risk/loss-minimization.	0.508
Deposit insurance has governance features to ensure that it is operationally independent and insulated from undue influence from the government, industry and regulatory/supervisory authority.	0.860
Deposit insurance coverage includes the domestic operations of foreign banks and the foreign operations of domestic banks.	0.557
Deposit insurance introduces a moral hazard issue, encouraging both depositors and banks to take on excessive risks.	0.595
Deposit insurance premiums risk-adjusted and has systems for assessing risks and calculating risk-adjusted premiums as well as the range of premiums applied to the assessed base.	0.754
The financial system safety net provides a framework for the early detection and timely intervention and resolution of troubled banks.	0.496
The current deposit coverage limit is sufficient and it effectively covers over 80% deposits in the bank.	0.875

Therefore, the component of deposit insurance indicate that they are highly interrelated with each other and affect the commercial bank performance in a uniform manner.

Deposit insurance was assessed by three measures namely; loan ratio, moral hazard and deposit level.

Table 4.36: Deposit Insurance Descriptive Results

Variable	N	Mean	Std. Deviation	Cronbach's Alpha
Deposit level	309	4.3042	.59901	.836
Loan ratio	309	4.4962	.47187	.888
Moral hazard	309	4.4296	.55327	.838

Descriptive data shown on Table 4.36 presents the relevant results on a scale of 1 to 5 (where 5 = Strongly Agree and 1 = Strongly Disagree).

Cronbach's alpha was used to test the reliability of the proposed constructs (Ali et al., 2016). The findings indicated that deposit level measures had a coefficient of 0.836, loan ratio measures had a coefficient of 0.888, while moral hazard measures had a coefficient of 0.838. Deposit insurance depicted Cronbach's alpha of 0.937 which was above the suggested value of 0.7 hence the study was reliable. It has been argued that both criteria may result in overestimation in the number of factors extracted (Field, 2009).This study adopted Kaiser Criterion. The above table shows that two 'components' in this analysis have been entered into the rotated solution. Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Cohen et al., 2011).

4.7.5 Deposit Adequacy Management Policy and Commercial Bank Performance Correlation Results

In order to establish the relationship between deposit insurance management and commercial bank performance in Kenya, a correlation matrix was used. Table 4.37 shows the correlation matrix with a varied degree of interrelationships between deposit insurance and commercial bank performance in Kenya. The Pearson correlation coefficient was generated at a significant level of five percent (2-tailed). The output indicates a negative relationship between capital adequacy and commercial bank performance in Kenya.

Deposit Insurance had a negative coefficient, which indicated that commercial bank performance reduced with increase in Deposit Insurance and vice versa.Deposit Insurance management and commercial bank performance were found to have moderate correlation (r=-2.97) in commercial bank performance since they were statistically significant at 5% level. This result was similar to Kale et al. (2015) who found that capital is positive and significant to bank performance.

Table 4.37: Deposit Insurance Correlations Results

Variables		Commercial bank performance	Deposit Insurance
Commercial bank performance	Pearson Correlation	1	2.552**
	Sig. (2-tailed)		.000
	N	202	202
Deposit Insurance	Pearson Correlation	2.552**	1
	Sig. (2-tailed)	.543	
	N	202	202

**. Correlation is significant at the 0.05 level (2-tailed).

4.7.6 Deposit Insurance Management ANOVA Results

Analysis of variance (ANOVA) was used to test whether the regression analysis model used is fit or the relationship of the variables just occurred by chance. Significance of F ratio is used to determine whether model used was fit or not. If the F ratio is statistically significant, the model used is considered fit and vice versa. The F statistics tends to be greater when the null hypothesis of independence is not true. P values of less than 0.05 indicates that the F statistic is high and that the null hypothesis of independence needs to be rejected since it is not true. In this case, the F ratio (F=0.652, p=0.000) was found to be statistically significant hence the model used for analysis was fit. These results are presented in Table 4.38.

Table 4.38: Deposit Insurance Management ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.094	5	.019	.652	.559[a]
	Residual	.251	11	.023		
	Total	.344	16			

a. Dependent Variable: Commercial Bank Performance

b. Predictors: (Constant), Deposit Insurance

4.7.7 Deposit Insurance Management Goodness-of-fit Model Results

The results of Deposit Insurance indicated that the explanatory power of deposit on commercial bank performance was slightly low as it accounted for 12.8 percent of the variability of change in the commercial bank performance (R square = 0.272).

Table 4.39: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806[a]	.649	.489	12.84586

a. Predictors: (Constant), Deposit Insurance

4.7.8 Regression results of Deposit Insurance Management and Commercial Bank Performance

The aggregate mean scores of Deposit Insurance measures (independent variable) were regressed on the aggregate mean scores of commercial bank performance measures (dependent variable) and the research findings were outlined in Table 4.39. To assess the effect of Deposit Insurance on commercial bank performance in Kenya, the study had set the following hypothesis;

1. Hypothesis Three

H_{01}: There is no statistical significance on the effect of deposit insurance management policy on commercial bank performance in Kenya.

Table 4.40: Regression Coefficients of Deposit Insurance Management Policy

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.342	1.866		1.255	.236
	Deposit Insurance	2.550	8.598	.194	.297	.772

The individual regression results in Table 4.40 reveals statistically significant positive linear relationship between deposit insurance and commercial bank performance (β = 0.194, P- value = 0.000). The deposit insurance coefficients are presented in Table 4.36. The results show that deposit insurance contributes significantly to the model since the p-value for the constant and gradient is less than 0.05. The fitted equation is $Y= 2.342 + 0.194X_{2.}$

Hence, H_{oA} is accepted since $\beta \neq 0$ and P-value>0.05. It can be concluded that there is statistically significance effect of deposit insurance management policy on commercial bank performance in Kenya. These findings collate with the study of Kale (2015) who found out that deposit insurance is positive and significant in determination of regulations effect on performance.

4.8 Interest Rate Management Policy on Commercial Bank's Performance

This section presents results for the fourth objective which analyses the effect Interest Rate management has on commercial bank performance in Kenya.

4.8.1 Descriptive Results of interest rate Management Policy

The fourth objective of the study was to establish if interest rate management policy affects financial performance of commercial banks in Kenya. The respondents were asked to indicate the extent of their agreement with given statements. Table 4.41shows questions that represent issues on interest rate management policy. The responses were tabulated in and analyzed using mean and standard deviation on a likert scale. In the likert scale SA represented strongly agree and SD represented strongly disagree (Likert, 1932). The questions concern managers' judgment on interest rate management how it affects the bank's financial performance.

Table 4.41: Effect of Interest Rate Policy on Commercial Bank Performance

Statements	Mean	SD
1. The Bank adheres to the Kenya Bankers Reference Rate stipulations	**3.03**	**1.505**
2. The Bank prescribes a rate that is in line with the borrower's credit rating provided by credit bureau.	**2.64**	**1.451**
3. Interest rate changes adversely affect the overall performance of the bank.	**4.38**	**0.557**
4. The interest capping law will affect the performance of the bank.	**4.36**	**0.523**
5. Interest capping law should be reviewed	**4.33**	**0.625**

Table 4.41 shows that the average mean and standard deviation was 3.97 and 0.954 respectively which show that interest rate management policy affects positively the performance of commercial banks in Kenya. The average standard deviation of 0.954 indicates that 95% of the responses were spread within one standard deviation from the mean hence it is significant and therefore we fail to reject the null hypothesis which states that interest rate management has an effect in performance of commercial banks in Kenya. Hence 75% disagreed with the assertion that Kenya bankers reference rate is adopted by the commercial banks in Kenya. 10% agreed and 15% were indifferent. Also,55% agreed that the interest rate capping have negatively influenced the performance of commercial banks in Kenya, 35% disagreed and 10% were indifferent. This implies the Kenyan policy of interest rate capping has affected the performance of commercial banks in Kenya. These findings are consistent with those ones of Maigua and Muoni (2013) study on the influence of interest rate on bank performance in Kenya which found that higher levels of interest rate, and inflation rates positively influence performance of commercial banks.

4.8.2 Sample Adequacy Results on Interest Rate Management Policy

Bartlett's Test of Sphericity was used at significant level of $p < .05$) to confirm that liquidity has patterned relationships.

Table 4.42: KMO and Bartlett's Test Table

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.549
Bartlett's Test of Sphericity	Approx. Chi-Square	128.065
	Df	10
	Sig.	.000

Indeed, these tests show patterned relationships amongst the variables ($p < .001$). Interest Rate Management was determined whether it was suitable for exploratory factor analysis by looking at the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy (cut- off above. 50).

4.8.3 Factor Analysis Results on Interest Rate Management Policy

The objective sought to investigate the effect of interest rate management policy on commercial bank's performance in Kenya. Interest rate management was assessed by four measures namely, treasury bill rate, central bank rate, money market rate, and Kenya bankers' reference rate. The factors were identified after carrying out factor analysis, the two factors which had the biggest influence on interest rate. Factor one was Central Bank rate which had the first three constructs. Factor two was money market rate with one construct whose means have been identified in table 4.43.

The broad purpose of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood. It is normally used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts (Yong & Pearce, 2013). Bartholomew, Knott and Moustaki (2011) argued that factor analysis operates on the notion measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality.

Table 4.42: Interest Rate Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.829	36.576	36.576	1.829	36.576	36.576	1.828	1.743	36.576
2	1.534	30.675	67.251	1.534	30.675	67.251	1.535	1.310	67.251
3	.822	16.444	83.695						
4	.605	12.095	95.790						
5	.211	4.210	100.000						

Extraction Method: Principal Component Analysis.

The above table shows that two factors (called ‘components’ in this analysis) have been entered into the rotated solution. These two factors account for about 67.251% of the total variance amongst the five items. This table shows actual factors extracted. In section labeled “Rotation Sums of Squared Loadings,” it shows only those factors that met cut-off criterion (extraction method). In this case, there were two factors with eigen values greater than one. The “% of variance” column shows how much of the total

variability (in all of the variables together) can be accounted for by each of these summary scales or factors. Factor one account for 67.251% of the variability in all five variables and factor two accounts for 36.576%.

4.8.4 Interest Rate Management Rotation Component Matrix Results

Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Yong & Pearce, 2013). Ultimately, simple structure attempts to have each factor define a distinct cluster of interrelated variables so that interpretation is easier (Cohen *et al.*, 2011). One criterion that can be used to determine the number of factors to retain is Kaiser's criterion which is a rule of thumb. This criterion suggests retaining all factors that are above the eigenvalue of 1 (Kaiser, 1960). Another criterion is based on Jolliffe's criterion that recommends retaining factors above .70 (Jolliffe, 1986).

Table 4.43: Effect of Interest Rate Policy on Commercial Bank Performance

Component	1	2
1. The Bank adheres to the Kenya Bankers Reference Rate stipulations.	**0.854**	
2. The Bank prescribes a rate that is in line with the borrower's credit rating provided by credit bureau.	**0.754**	
3. Interest rate changes adversely affect the overall performance of the bank.		**0.557**
4. The interest capping law will affect the performance of the bank.		**0.523**
5. Interest capping law should be reviewed.		**0.625**

Cash management was assessed by three measures namely cash transactions, cash outflows and liquidity. Descriptive data shown on Table 4.45 presents the relevant results on a scale of 1 to 5 (where 5 = Strongly Agree and 1 = Strongly Disagree).

Table 4.45: Interest rate policy Descriptive

Variable	Mean	Std. Deviation	Cronbach's Alpha
Interbank rate	4.0259	.42983	.775
Central bank rate	4.0728	.54240	.948

Cronbach's alpha was used to test the reliability of the proposed constructs (Ali *et al*., 2016). The findings indicated that interbank rate had a coefficient of 0.775, central bank rate had a coefficient of 0.948, interest rate management measures depicted Cronbach's alpha of 0.937, which is above the suggested value of 0.7, hence the study was reliable.

It has been argued that both criteria may result in overestimation in the number of factors extracted (Field, 2009). This study adopted Kaiser Criterion. The above table shows that two 'components' in this analysis have been entered into the rotated solution. Factors are rotated for better interpretation since unrotated factors are ambiguous. The purpose of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Cohen et al., 2011).

4.8.5 Interest Rate Management Policy and Commercial Bank Performance Correlation Results

In order to establish the relationship between interest rate management and commercial bank performance in Kenya a correlation matrix was used. Table 4.46 shows the correlation matrix with varied degree of interrelationships between interest rate and commercial bank performance in Kenya. The Pearson correlation coefficient was generated at a significant level of five percent (2-tailed). The output indicates a positive relationship between interest rate and commercial bank performance in Kenya. Interest rate had a positive coefficient, which indicated that commercial bank performance increased with increase in interest rate and vice versa.

Interest rate management and commercial bank performance were found to have high correlation (r=0.797) in commercial bank performance since they were statistically significant at 5% level. This result was similar to Kale (2015), who found that capital is positive and significant to bank performance.

Table 4. 44: Interest Rate Correlations Results

Variables		performance	Interest Rate
Commercial bank performance	Pearson Correlation	1	0.797**
	Sig. (2-tailed)		.000
	N	202	202
Interest Rate	Pearson Correlation	0.797**	1
	Sig. (2-tailed)	.543	
	N	202	202

**. Correlation is significant at the 0.05 level (2-tailed).

4.8.6 Interest Rate Management ANOVA Results

Analysis of variance (ANOVA) was used to test whether the regression analysis model used is fit or the relationship of the variables just occurred by chance. Significance of F ratio is used to determine whether model used was fit or not. If the F ratio is statistically significant, the model used is considered fit and vice versa. The F statistics tends to be greater when the null hypothesis of independence is not true. P values of less than 0.05 indicates that the F statistic is high and that the null hypothesis of independence needs to be rejected since it is not true. The F ratio (F = 0.652, p = 0.000) was found to be statistically significant thus the model used for analysis was fit. These results are presented in Table 4.47.

Table 4.45: Interest Rate Management ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.094	5	.019	.652	.559[a]
	Residual	.251	11	.023		
	Total	.344	16			

a. Dependent Variable: Commercial Bank Performance

b. Predictors: (Constant), Interest rate

4.8.7 Interest Rate Management Goodness-of-fit Model Results

The results of Interest Rate indicated that the explanatory power of interest rate on commercial bank performance was high as it accounted for 65.8 percent of the variability of change in the commercial bank performance (R square = 0.272).

Table 4.46: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806[a]	.649	.489	65.84586

a. Predictors: (Constant), Interest Rate

4.8.8 Regression Results of Interest Rate Management and Commercial Bank Performance

The aggregate mean scores of Interest Rate measures (independent variable) were regressed on the aggregate mean scores of commercial bank performance measures (dependent variable) and the research findings were outlined in Table 4.49. To assess the effect of interest rate on commercial bank performance in Kenya, the study had set the following hypothesis;

1. Hypothesis Four

H_{01}: There is no statistical significance on the effect of Interest Rate Management Policy on Commercial Bank Performance in Kenya

Table 4.47: Regression Coefficients of Interest Rate Management Policy

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.342	1.866		1.255	.236
	Deposit Insurance	2.550	8.598	.194	.297	.772

The individual regression results in Table 4.49 reveals statistically significant positive linear relationship between interest rate and commercial bank performance ($\beta = 0.194$, P- value = 0.000). The interest rate coefficients are presented in Table 4.46. The results show that interest rate contributes significantly to the model since the p-value for the constant and gradient is less than 0.05. The fitted equation is $Y= 2.342 + 0.194X_2$.

Hence, H_{oA} is accepted since $\beta \neq 0$ and P-value>0.05. It can be concluded that there is statistical significance effect of interest rate management policy on commercial bank performance in Kenya. These findings collate with the study of Kale (2015) who found out that deposit insurance is positive and significant in determination of regulations effect on performance.

4.9 Credit Risk Management Policy on Commercial Bank's Performance

This section presents results for the fifth objective which analyses the effect credit risk management has on commercial bank performance.

4.9.1 Descriptive Results of Credit Risk Management Policy

The fifth objective of the study was to establish if Credit Risk Management policy affects financial performance of commercial banks in Kenya. The respondents were asked to indicate the extent of their agreement with given statements. Table 4.50 shows questions that represent issues on Credit Risk Management policy. The responses were tabulated and analyzed using mean and standard deviation on a Likert scale. In the likert scale SA represented strongly agree and SD represented strongly disagree (Likert, 1932). The questions concern managers' judgment on Credit Risk Management how it affects the bank's financial performance.

Table 4.50: Effect of Credit Risk Management Policies on Commercial Bank Performance

Credit risk Management		
Statements	**Mean**	**SD**
1. Proper Credit risk Management reduces the rate on non-performing loans.	4.33	0.562
2. Credit risk Management affects financial performance of our bank	3.88	1.022
3. The bank only lends to clients with a positive report from credit reference bureaus.	3.29	1.080
4. Credit reference bureaus has significantly reduced the rate of credit risk in banks.	4.21	0.326
5. The bank uses credit scoring models to measure and control credit risk.	3.74	0.633
6. Increase in capital requirement is used to buffer credit risk in the institution.	3.98	0.772
7. Interest rate capping has positively reduced the amount of nonperforming loans.	4.15	0.551

Table 4.50 shows that the average mean and standard deviation was 3.76 and 0.6844 respectively which show that credit risk management policy affects positively the performance of commercial banks in Kenya. The average standard deviation of 0.684 indicates that 68% of the responses were spread within one standard deviation from the mean hence it is significant and therefore we reject the null hypothesis which states that credit risk management has no effect in performance of commercial banks in Kenya. 80% of respondents agreed with the assertion that credit risk management affects the performance of commercial banks in Kenya, 7% disagreed and 13% were indifferent. Also, 58% agreed that the Credit reference bureaus has significantly reduced the rate of credit risk in commercial banks in Kenya, 40% disagreed and 2% were indifferent. This implies

the Kenyan policy of Credit reference bureaus has not significantly reduced the rate of credit risk in commercial banks in Kenya. Moreover, 45% agreed that the interest rate capping positively influences the amount of nonperforming loans in commercial banks in Kenya, 48% disagreed and 7% were indifferent. This implies that the Kenyan policy of interest rate capping has not significantly reduced the rate of credit risk in commercial banks in Kenya. This can be due to the credit rationing that interest rate capping creates. These findings are consistent with those ones of Muiruri (2015) study on the influence of central bank regulatory requirements on bank performance in Kenya, which found that higher levels of credit risk negatively influence performance of commercial banks in Kenya.

4.9.2 Sample Adequacy Results on Credit Risk Management Policy

Bartlett's Test of Sphericity was used at significant level of $p < .05$) to confirm that liquidity has patterned relationships.

Table 4.51: KMO and Bartlett's Test Table

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.508
Bartlett's Test of Sphericity	Approx. Chi-Square	107.251
	Df	10
	Sig.	.000

Indeed, these tests show patterned relationships amongst the variables ($p < .001$). Interest Rate Management was determined whether it was suitable for exploratory factor analysis by looking at the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy (cut- off above. 50).

4.9.3 Factor Analysis Results on Credit Risk Management Policy

The objective sought to investigate the effect of credit risk management policy on commercial bank's performance in Kenya. Credit risk management was assessed by four measures namely, Non performing loans, asset quality, credit reference bureau, and deposits. The factors were identified after carrying out factor analysis. The two factors which had the biggest influence on credit risk were non performing loans and credit reference bureau.

The broad purpose of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood. It is normally used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts (Yong & Pearce, 2013). Bartholomew, Knott and Moustaki (2011) argued that factor analysis operates on the notion measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality.

Table 4.48:Credit Risk Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.674	33.490	33.490	1.674	33.490	33.490	1.828	1.549	33.490
2	1.161	23.221	56.711	1.161	23.221	56.711	1.535	1.234	56.711
3	1.001	20.020	76.731						
4	.702	14.038	90.769						
5	.462	9.231	100.000						

Extraction Method: Principal Component Analysis.

The above table shows that two factors (called 'components' in this analysis) have been entered into the rotated solution. These two factors account for about 56.711% of the total variance amongst the five items. This table shows actual factors extracted. In section labeled "Rotation Sums of Squared Loadings," it shows only those factors that met cut-off criterion (extraction method). In this case, there were two factors with eigen values greater than one. The "% of variance" column shows how much of the total variability (in all of the variables together) can be accounted for by each of these summary scales or factors. Factor one account for 33.491% of the variability in all five variables and factor two accounts for 23.221%.

4.9.4 Credit Risk Management Rotation Component Matrix Results

Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Yong & Pearce, 2013). Ultimately, simple structure attempts to have each factor define a distinct cluster of interrelated variables so that interpretation is easier (Cohen et al., 2011). One criterion that can be used to determine the number of factors to retain is Kaiser's criterion which is a rule of thumb. This criterion suggests retaining all factors that are above the eigen value of one (Kaiser, 1960). Another criterion is based on Jolliffe's criterion, which recommends retaining factors above .70 (Jolliffe, 1986).

Table 4.49: Effect of Credit Risk Management policies on Commercial bank performance

Credit risk Management		
Component	**1**	**2**
1. Proper credit risk management reduces the rate on non-performing loans.	0.995	
2. Credit risk management affects financial performance of our bank	0.954	
3. The bank only lends to clients with a positive report from credit reference bureaus.	0.901	
4. Credit reference bureaus has significantly reduced the rate of credit risk in banks.		0.826
5. The bank uses credit scoring models to measure and control credit risk.		0.633
6. Increase in capital requirement is used to buffer credit risk in the institution.		0.772
7. Interest rate capping has positively reduced the amount of nonperforming loans.		0.551

Table 4.50: Credit risk Management Descriptive

Variable	Mean	Std. Deviation	Cronbach's Alpha
Non-performing loans	4.0259	.42983	.875
Asset Quality	4.0728	.54240	.748

Cronbach's alpha was used to test the reliability of the proposed constructs (Ali et al., 2016). The findings indicated that nonperforming loans had a coefficient of 0.875, while asset quality had a coefficient of 0.748. Credit risk management measures depicted Cronbach's alpha of 0.937, which is above the suggested value of 0.7, hence the study was reliable.

It has been argued that both criteria may result in overestimation in the number of factors extracted (Field, 2009). This study adopted Kaiser Criterion. The above table shows that two 'components' in this analysis have been entered into the rotated solution. Factors are rotated for better interpretation since unrotated factors are ambiguous. The goal of rotation is to attain an optimal simple structure, which attempts to have each variable load on as few factors as possible, but maximizes the number of high loadings on each variable (Cohen et al., 2011).

4.9.5 Credit Risk Management Policy and Commercial Bank Performance Correlation Results

In order to establish the relationship between credit risk management and commercial bank performance in Kenya, a correlation matrix was used. Table 4.55 shows the correlation matrix with a varied degree of interrelationships between credit risk and commercial bank performance in Kenya. The Pearson correlation coefficient was generated at a significant level of five percent (2-tailed). The output indicates a positive relationship between credit risk and commercial bank performance in Kenya. Credit risk had a negative coefficient, which indicated that commercial bank performance decreased with increase in credit risk and vice versa.

Credit risk management and commercial bank performance were found to have high negative correlation (r=-1.497) in commercial bank performance since they were statistically significant at 5% level. This result was similar to Kale (2015) who found that capital is positive and significant to bank performance.

Table 4.51: Credit Risk Correlations Results

Variables		Commercial bank performance	Credit risk
Commercial bank performance	Pearson Correlation	1	-1.497**
	Sig. (2-tailed)		.000
	N	202	202
Credit risk	Pearson Correlation	-1.497**	1
	Sig. (2-tailed)	.543	
	N	202	202

**. Correlation is significant at the 0.05 level (2-tailed).

4.9.6 Credit Risk Management ANOVA Results

Analysis of variance (ANOVA) was used to test whether the regression analysis model used is fit or the relationship of the variables just occurred by chance. Significance of F ratio is used to determine whether model used was fit or not. If the F ratio is statistically significant, the model used is considered fit and vice versa. The F statistics tends to be greater when the null hypothesis of independence is not true. P values of less than 0.05 indicates that the F statistic is high and that the null hypothesis of independence needs to be rejected since it is not true. In this case the F ratio (F=0.639, p=0.000) was found to be statistically significant hence the model used for analysis was fit. These results are presented in Table 4.56.

Table 4.52: Credit Risk Management ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.094	5	.019	.639	.559[a]
	Residual	.251	11	.023		
	Total	.344	16			

a. Dependent Variable: Commercial Bank Performance

b. Predictors: (Constant), Credit risk

4.9.7 Credit Risk Management Goodness-of-fit Model Results

The results of Credit Risk indicated that the explanatory power of Credit Risk on commercial bank performance was high as it accounted for 65.8 percent of the variability of change in the commercial bank performance (R square = 0.272).

Table 4.53: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806[a]	.649	.489	34.8486

a. Predictors: (Constant), Credit Risk

4.9.8 Regression Results of Credit Risk Management and Commercial Bank Performance

The aggregate mean scores of Credit Risk measures (independent variable) were regressed on the aggregate mean scores of commercial bank performance measures (dependent variable) and the research findings were outlined in Table 4.58. To assess the effect of credit risk on commercial bank performance in Kenya, the study had set the following hypothesis;

1. Hypothesis Five

H_{01}: There is no statistically significance on the effect of credit risk management policy on commercial bank performance in Kenya.

Table 4.54: Regression Coefficients of Credit Risk Management Policies

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.342	1.866		1.255	.236
	Credit Risk	2.550	8.598	.315	.297	.772

The individual regression results in Table 4.58 reveals statistically significant positive linear relationship between Credit Risk and commercial bank performance ($\beta = 0.315$, P-value = 0.000). The Credit Risk coefficients are presented in Table 4.58. The results show that interest rate contributes significantly to the model since the p-value for the constant and gradient is less than 0.05. The fitted equation is $Y= 2.342 + 0.315X_2$.

Hence, H_{oA} is accepted since $\beta \neq 0$ and P-value>0.05. It can be concluded that there is statistical significance effect of credit risk management policy on commercial bank performance in Kenya. These findings collate with the study of Kale (2015) who found out that deposit insurance is positive and significant in determination of regulations effect on commercial bank performance.

4.10 Descriptive Statistics and Discussion of Study Variables

Table 4.55: Variables one-Sample Statistics

One-Sample Statistics						
Variables	N	Minimum	Maximum	Mean	Std. Deviation	Std. Error Mean
Liquidity management policies	172	3.00	5.00	4.5096	.33082	.36124
Capital adequacy management policies	172	3.80	5.00	4.4342	.30394	.04830
Deposit insurance policies	172	2.67	5.00	3.9662	.50070	.07502
Interest rate management policies	172	1.75	5.00	3.6027	.76074	.13791
Credit risk management policies	172	2.33	5.00	4.2161	.50050	.14781

4.11 Statistical Tests of Significance for Dependent Variable

4.11.1 Correlation Analysis between Variables and Performance of Commercial Banks

It gives the Pearson's coefficient value (correlation test) and the significance value (measuring significance of the association). In this study, the Pearson r statistic is used to calculate bivariate correlations. Values between 0 and 0.3 (0 and 0.3) indicate no correlation (variables not associated), 0.3 and 0.5 (-0.3 and -0.5) a weak positive (negative) linear association. Values between 0.5 and 0.7 (-0.5 and -0.7) indicate a

moderate positive linear association and values between 0.7 and 1.0 (-0.7 and -1.0) indicate a strong positive (negative) linear association. The significance of the relationship is tested at 95% level with a 2-tailed test where a statistically significant correlation is indicated by a probability value of less than 0.025. This means that the probability of obtaining such a correlation coefficient by chance is less than 2.5 times out of 100, so the result indicates the presence of an association. Correlation analysis results for the association between effects of financial sector policies and the banks' performance of commercial banks is presented in table 4.60.

Table 4.60: Commercial Banks' Performance and Effects of Financial Sector Policies

		ROE	ROA	CA IR	LM	CRM	DI
ROE	Correlation Coefficient	1.000	.011	.008	.070	-.003	-.054
	Sig. (2-tailed)	.	.871	.905	.309	.960	.435
ROA	Correlation Coefficient		1.000	.023	.048	.035	-.091
	Sig. (2-tailed)		.	.736	.487	.605	.184
CA IR	Correlation Coefficient			1.000	.068	.032	-.192**
	Sig. (2-tailed)				.322	.639	.005
LM	Correlation Coefficient				1.000	-.100	-.203**
	Sig. (2-tailed)				.	.144	.003
CRM	Correlation Coefficient					1.000	-.054
	Sig. (2-tailed)						.435
DI	Correlation Coefficient						1.000
	Sig. (2-tailed)						.
	N	172	172	172	172	172	172

**. Correlation is significant at the 0.01 level (2-tailed).

Return on Equity (ROE), Return on asset (ROA), Capital Adequacy(CA), Liquidity Management(LM), Credit risk management and Deposit Insurance (DI) Interest Rate Management (IR)

This section presents the relationship between the identified Deposit Insurance, Capital Adequacy, Interest Rate Management, Credit Risk Management and Liquidity Management and its relationship with commercial banks' performance as expressed by ROA

4.11.2 Deposit Insurance and Financial performance of Commercial Banks in Kenya

Results in table 4.61 indicate that Deposit Insurance had R of -0.54 with ROE at 95% confidence levels. This correlation coefficient value was between -0.5and-0.7 indicating a moderate negative linear association between Deposit Insurance and ROE. While Deposit Insurance also has a correlation with ROE and ROA at 95% confidence levels had R of-0.091 with ROA at 95% confidence levels is correlation coefficient value was between0and -0.3 indicate no correlation between Deposit Insurance and ROE, hence variables not associated. The results further showed that Deposit Insurance also had P equal 0.435 and P equal to 0.184 with ROE and ROA at 95% confidence levels at respectively. The relationship was tested at 95% level with a 2-tailed test where the probability value was greater than 0.025 indicating that Deposit Insurance relationship with the two bank performance indicators (ROE and ROA) was not significant.

4.11.3 Capital Adequacy and Financial Performance of Commercial Banks in Kenya

From table 4.58, study findings revealed that Capital Adequacy had correlation R values of 0.905with ROE at 95% confidence levels. This correlation coefficient value is between 0.7 and1.0 indicate a strong positive linear association between capital adequacy and ROE. While relating with ROA, the Capital Adequacy had R-values of 0.023 at 95% confidence level. This correlation coefficient value was between 0 and 0.3 indicate no correlation between Capital Adequacy and ROE hence variables not associated. The capital Adequacy had at p equal to 0.905 and p equals to 0.736 with ROE and ROA respectively. The study results relationship was tested at 95% level with

a 2-tailed test results indicated that the probability values were greater than 0.025 indicating that capital requirement relationship with the two bank performance indicators (ROE and ROA) was not significant. This is similar to Muiruri (2015) which found a positive relationship between capital requirement and performance. This finding is contrary to Ongore and Kusa (2013) whose results indicated that capital ratio has a negative relationship with ROE. This study thus concluded that there was a relationship between capital adequacy and financial performance of commercial banks in Kenya.

4.11.4 Credit Risk Management and Financial Performance of Banks in Kenya

From table 4.58 results revealed that that Credit risk management had R of -0.003 at 95% confidence levels with ROE. This correlation coefficient value was between 0 and -0.3 and indicated that no correlation between credit risk management with ROE hence variables not associated. The credit risk management also has R of 0.035 with ROA at 95% confidence levels. This correlation coefficient value was between0.3 and 0.5 indicating a weak positive linear association. Result further indicated that credit risk management had p equal to 0.960 and at p equal to 0.605at 95% confidence levelswith ROE and ROA respectively. The relationship was tested at 95% level with a 2-tailed test and the probability values were greater than 0.025 indicating that Credit risk management relationship with all the two bank performance indicators (ROE and ROA) was not significant. This is similar to Muiruri (2015) which he found a positive relationship between Credit Risk Management and Performance and this finding is contrary to Ongore and Kusa (2013) whose result indicated asset quality (Credit risk management) which is expressed as non-performing loans to total loans is negatively related to the three banks' performance indicators. The study concluded that there was a relationship between Credit risk management and financial performance of commercial banks in Kenya.

4.11.5 Liquidity Management and Financial Performance of Banks in Kenya

From table 4.58 results revealed that Liquidity Management had R of 0.70 and R of 0.035 with ROE and ROA at 95% confidence levels. This correlation coefficient value was between0.5and0.7 indicating a moderate positive linear association between Liquidity Management with ROE. While relating with ROA, the Liquidity Management had R values of 0.048 at 95% confidence levels. This correlation coefficient value was between 0 and 0.3 indicate no correlation between Liquidity Management with and ROA, hence variables not associated

Result further indicated that Liquidity Management had p equal to 0.309 and at p equal to 0.487 at 95% confidence levels with ROE and ROA respectively. The probability values were greater than 0.025 indicating that Liquidity Management relationship with all the two bank performance indicators (ROE and ROA) was not significant. These findings were similar to Ongore and Kusa (2013) and Muiruri (2015) whose results indicated that Liquidity Management was positively related to ROA and ROE. This may be because Liquidity Management is more related with fulfilling depositors' obligation (safeguarding depositors) than investment. The study concluded that there was a relationship between Liquidity Management and financial performance of commercial banks in Kenya even though it is not significant.

4.11.6 Interest Rate Management and Financial Performance of Commercial Banks in Kenya

From table 4.62 study findings revealed that Interest Rate Management had correlation R-values of 0.905 with ROE at 95% confidence levels. This correlation coefficient is value is between 0.7 and1.0 indicate a strong positive linear association of capital Adequacy with ROE. While relating with ROA, the Capital Adequacy had R-values of 0.023 at 95% confidence level. This correlation coefficient value was between0and 0.3 indicate no correlation between Interest Rate Management and ROE hence variables not associated. The Interest Rate had a p equal to 0.905 and p equals to 0.736 with, ROE and

ROA respectively. The study results relationship was tested at 95% level with a 2-tailed test results indicated that the probability values were greater than 0.025 indicating that capital requirement relationship with all the two bank performance indicators (ROE and ROA) was not significant.

4.12 Results of the Regression

Under the following regression outputs the beta coefficient may be negative or positive; beta indicates each variable's level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant. R^2 value indicates the explanatory power of the model and in this study adjusted R^2 value, which takes into account the loss of degrees of freedom, associated with adding extra variables were inferred to see the explanatory powers of the models. According to Mugenda and Mugenda (2003), a correlation coefficient indicates the relationship between variables, it does not imply any causal relationship between variables and hence the need for further statistical analysis such as regression analysis to help establish specific nature of the relationships. In this section, multiple regression analysis is presented for banks' performance each year. In order to establish the effect of Financial Sector Policies and performance of commercial banks in Kenya a regression model had to be built.

The coefficients or beta weights for each variable allowed the researcher to compare the relative importance of each independent variable. In this study the unstandardized coefficients and standardized coefficients are given for the multiple regression equations. However, discussions are based on the standardized coefficients. The general model was subjected to testing using multiple regressions (stepwise method) year by year to establish whether financial sector policies affected banks' performance. The model is presented algebraically as follows:

$$ROA_{it}=\beta 0+\beta DI_{it}+\beta 1CA_{it}+\beta 3CRM_{it}+\beta 2LM_{it}+\beta 3IRM_{it}+\varepsilon \quad \ldots\ldots 3.2$$

$$ROE_{it}=\beta 0+\beta DI_{it}+\beta 1CR_{it}+\beta 3CRM_{it}+\beta 2LM_{it}+\beta 3IRM_{it}+\varepsilon \quad \ldots\ldots 3.3$$

The variables of the study were: Performance of commercial bank expressed by ROA and ROE; CA = Capital Adequacy, LM = Liquidity Management CRM= Credit risk management, DI = Deposit Insurance, IRM= Interest Rate Management and ε= Error term (the residual error of the regression.

Regression Analysis–with ROA

Table 4.61: Regression Coefficients with ROA

Model		Coefficients[a] Unstandardized Coefficients		Standardized Coefficients	T	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	3.429	1.182		2.901	.004
	Deposit Insurance	- .005	.006	-.066	-.935	.351
	Capital Adequacy	-.004	.042	-.007	-.103	.918
	Interest Rate Management					
	Credit Risk Management	.009	.027	.023	.333	.739
	Liquidity Management	.022	.015	.103	1.467	.144

a. Dependent Variable: Return on Asset for Commercial banks

The regression result presented in table 4.62 indicates Deposit Insurance and Capital Adequacy had negative coefficient while Credit Risk Management, Liquidity Management and Interest Rate Management had positive coefficient. The coefficient is used to answer the following regression model which relates the predictors (independent) and dependent variables:

As per the SPSS generated table 4.63, the established regression equation was:

$$ROA_{it}=\beta 0+\beta DI_{it}+\beta 1CA_{it}+\beta 3CRM_{it}+\beta 2LM_{it}+\beta 3IRM_{it}+\varepsilon \ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

became: ROA =3.429– 0.05*Deposit Insurance–0.004*Capital Adequacy +0.009*Credit Risk Management+ 0.022* Liquidity Management+0.015*Interest Rate Management.

The regression equation above has established that taking independent variables to be constant, financial performance will be 3.429. Deposit Insurance and Capital Adequacy had negative coefficients of -0.005 and -0.004 respectively while Liquidity, Credit Risk and Interest Rate Management had a positive coefficient of 0.009, 0.022 and 0.015 respectively.

The findings presented also shows that taking other independent variables at zero, a unit increase in Capital Adequacy will lead to -0.004 decrease in bank financial performance; a unit increase in Liquidity Management will lead to 0.022 increase in bank financial performance; a unit increase in Credit risk management will led to 0.009 decrease in banks' financial performance and finally, a unit increase in Deposit Insurance will lead to -0.005decrease in bank financial performance and ; a unit increase in Interest Rate Management will lead to 0.015 increase in bank financial performance; At 5%, level of significance and 95% level of confidence Deposit Insurance had a 0.351 level of significance. Capital Adequacy had a 0.918 level of significance while Credit risk management had a 0.739 level of significance and Liquidity Management had a 0.144 level of significance and Interest Rate Management had 0.739. All coefficient values not significant because P value (Sig value) were greater than 0.0025 testing at 95% level with 2 tailed thus these values are more than critical values of 5%. The coefficient explains insignificant influence of independent variable to performance of the commercial banks. This result is similar to that of Muiruri (2015) and Ogilo (2013), but contrary to Ongore and Kusa (2013).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study investigated the effect of financial sector policies on financial performance of commercial banks in Kenya. The financial sector policies that were studied are; Deposit Insurance, Capital Adequacy, Liquidity Management, Credit Risk Management and Interest Rate management. Financial performance indicators that were studied are, return on assets and return on equity. This chapter summarizes the findings of the study and makes conclusions upon which recommendations are drawn. Suggestions for further study are also captured as a way of filling the gaps identified in the study. The study pursued five objectives and five hypotheses upon which conclusions are aligned.

5.2 Summary of Findings

Evidence from previous studies on whether financial sector policy influence commercial bank performance showed that there was mixed results based on the operating environment and the structure of regulation. In Kenya, financial deepening is high and makes it a sound environment for this nature of research. Before the actual final data collection, a pilot study was conducted where the content validity and reliability of the questionnaires were tested. The validity was enhanced through discussion of the questionnaire contents with two randomly selected bank managers. The reliability was tested through statistical package for social sciences (SPSS) and Cronbach alpha correlation coefficient was used to satisfy the reliability tests. The study sample had 250 questionnaires distributed and 212 were duly completed and returned for analysis. This represented a response rate of 82% which according to Saundres, Lewis and Thornbill (2007), Sekaran (2003) and Mugenda and Mugenda (2003) is good response rate. The study revealed that there was a strong relationship between the study variables capital adequacy, Liquidity management, credit risk management and deposit insurance and

interest rate management significantly influenced financial performance of commercial banks in Kenya.

5.2.1 Effect of Deposit Insurance on Performance of Commercial Banks in Kenya

The first objective of the study was to establish the effect of deposit insurance on performance of commercial banks in Kenya. The findings revealed that deposit insurance has an inverse relationship with financial performance of commercial banks in Kenya measured by return on equity and return on assets. This finding is supported by the coefficient of determination which shows that the variations in return on equity are explained by changes in premiums charged for insurance of the deposits. The effect of deposit insurance on return on assets is not statistically significant and hence the null hypothesis was accepted. Commercial banks in Kenya have been paying premiums to cover depositors in the event of bank failure.

5.2.2 Effect of Capital Adequacy on Performance of Commercial Banks in Kenya

The second objective of the study sought to establish the effect of Capital Adequacy on commercial bank performance measured by return on equity and return on assets. Results revealed that Capital Adequacy had an inverse relationship on return on assets and return on equity of commercial banks in Kenya. This is supported by the coefficient of determination, which shows that decrease in capital due to indulgence in less risky ventures explains the variations in return on assets of commercial banks in Kenya. The test for significance also showed that the influence was statistically significant and hence the alternative hypothesis was accepted. This means that capital adequacy is good at skimming out incomes and having a good return to their initial outlay. This is necessitated by capital adequacy and determined by the risk the venture is indulging in and the higher the risk the higher the capital requirement and vice versa.

5.2.3 Effect of Liquidity Management on Performance of Commercial Banks in Kenya

The third objective of the study was to establish the effect of Liquidity Management on performance of commercial banks in Kenya. The results showed that Liquidity Management had a moderate influence on profitability of commercial banks in Kenya. The analysis produced a coefficient of determination, which showed the percentage of variations in return on equity, and return on assets is explained by the level of liquidity. The significance test showed that influence of liquidity management on bank performance was statistically significant and hence the alternate hypothesis was accepted. Majority of the respondents agreed that liquidity management had a positive influence on bank performance.

5.2.4 Effect of Credit Risk Management on Performance of Commercial Banks in Kenya

The fourth objective sought to establish the effect of credit risk management on the performance of commercial banks in Kenya. The findings showed that variations in return on equity and return on assets can be explained by the level of nonperforming loans in the loan book which is a measure of credit risk in banks. This finding is further supported by regression results, which showed that credit risk management has a statistically significant influence on the financial performance of commercial banks in Kenya and therefore the alternate hypothesis was accepted. This meant that credit risk management has a positive effect on financial performance of commercial banks in Kenya. Commercial banks in Kenya use various methods to check their credit risk. The methods include screening and profiling the quality of lenders using credit reference bureaus and insisting on collateralized facilities only.

5.2.5 Effect of Interest Rate Management on Performance of Commercial Banks in Kenya

The fifth objective sought to establish the effect of interest rate management on the performance of commercial banks in Kenya. Findings on the effect of interest rate management on performance of commercial banks showed that variations in return on equity and return on assets can be explained by the level of interest rate charged in the banks. This finding is further supported by regression results that showed that interest rate management has a statistically significant effect on the financial performance of commercial banks in Kenya and therefore the alternate hypothesis was accepted. This meant that interest rate management has a positive effect on financial performance of commercial banks in Kenya. In the first to the third year of the study, commercial banks in Kenya used to charge varied interest rates depending on the quality and risk associated with the lender. This resulted to the higher rate rendered. The performance of the banks and vice versa. In the fourth and fifth years of the study, interest rate capping had taken effect and this resulted to lower interest rate hence a lower performance of banks, though the effect needs further studies to determine whether banks applied credit rationing hence reduced the total loans rendered thereby affecting performance.

5.3 Conclusions

Based on the findings of the study, it can be concluded that Financial Sector policies affect financial performance of commercial banks in Kenya positively; the study revealed that there was great variation on the financial performance of commercial banks due to changes in Deposit Insurance, Capital Adequacy, Credit Risk Management, Liquidity Management and Interest Rate Management. Credit risk management, liquidity management and interest rate management were found to have a high prediction power in terms of performance of commercial banks. It is therefore important for the Central bank of Kenya to give priority to these policies and in order to improve the performance of the industry. This finding is similar to that of Flamini et al. (2009);

Kamau (2009); Kiruri (2013); and Muiruri (2015) who concluded that credit risk management is a major indicator of performance of commercial banks in Kenya.

5.3.1 Effect of Deposit Insurance on Performance of Commercial Banks in Kenya

The individual regression results reveal a weak positive linear relationship between deposit insurance and commercial bank performance in Kenya. The study found out that deposit insurance is critical to the performance of any commercial bank. As an essential part of commercial bank performance is planning to avert crisis and having a protective cover in the event of failure, the study established that flat rate deposit insurance does not fully take into account the systemic risk brought about by diverse products in the banking industry. Hence or otherwise, a risk based deposit insurance system was found to be more preferred. The study concluded that there is a significant relationship between commercial bank performance and deposit insurance.

5.3.2 Effect of Capital Adequacy on Performance of Commercial Banks in Kenya

The results indicated that the explanatory power of capital adequacy on commercial bank performance as it accounted significantly for the change in the commercial bank performance. From the findings of the study it was concluded that those banks that had invested in higher capital requirement and allocated capital for every risk class had better performance than the banks that did not. It was also revealed from the findings that the banks that observed proper risk identification, assessment and continuous monitoring and evaluation of risks associated with certain products and apportion commensurate capital therein significantly recorded higher levels of performance than those that do not. Hence, the effect of capital adequacy on commercial bank performance was statistically significant

5.3.3 Effect of Liquidity Management on Performance of Commercial Banks in Kenya

The individual regression results reveal statistically significant strong positive linear relationship between liquidity management policy and commercial bank performance. The study concluded that effective liquidity management system, an efficient interbank market is paramount to provision of liquidity to the banks, and banks with proper liquidity management systems ended up performing better than the ones without. These results support the efficient market hypothesis theory by indicating that banks with more liquidity have better overall performance than otherwise. The study concluded that there is a statistically significant effect of liquidity management policy on commercial bank performance in Kenya.

5.3.4 Effect of Credit Risk Management on Performance of Commercial Banks in Kenya

The study concluded that there is a significant effect of credit risk management on commercial bank performance. The regression results showed a negative relationship between credit risk management and commercial bank performance. The study concluded that despite the fact that CRB's are in place, non-performing loans still are on the rise. This implies the effectiveness of CRB's in screening out bad lenders should be reanalyzed.

5.3.5 Effect of Interest Rate Management on Performance of Commercial Banks in Kenya

The study results show that there was statistically significant positive linear relationship between interest rate management and commercial bank performance in Kenya. The significant results showed that interest rate management is statistically significant and the alternative hypothesis was accepted. The study found out that interest rates have a

direct effect on banks income and since it was realized that this is the main source of income for the banks. Interest rate capping was found to have a profound effect on bank income since the interest charged had been capped. It was recommended that the interest capping law should be reviewed for bank performance to be enhanced.

5.4 Recommendations

From the findings of the study and its implications on effect of financial sector policies on commercial bank performance in Kenya, the following recommendations are made. The recommendations include managerial and policy dimensions.

5.4.1 Managerial Recommendations

Managers of financial institutions should take it upon themselves to ensure commercial banks maintain a proper liquidity ratio to enhance performance of commercial banks, since the paper has found out liquidity to be a major factor in overall bank performance. Managers should also maintain control of the amount of nonperforming loans that enter into their portfolios. This is a key measure of reducing the level of credit risk in the financial institution since the research has shown how higher levels of credit risk is associated with much lower performance. It was also recommended that managers of deposit insurance systems Kenya should establish a sound working environment with bank supervisors in order to have an early warning system to detect failure and corrective measures to be applied in due course.

This research provides insight into the state of credit risk management and its implications for commercial bank managers and regulators. Based on its analysis of the responses and subsequent discussions, the following recommendations for consideration by managers were made. Supervisors should be cautious against over-reliance on internal models for credit risk management and regulatory capital. Where appropriate, simple measures could be evaluated in conjunction with sophisticated modelling to

provide a more complete picture. Supervisors and commercial bank supervisors should be aware of the growing need for high-quality liquid collateral to meet margin requirements. Supervisors should consider whether firms are accurately capturing central counterparty exposures as part of their credit risk management.

5.4.2 Policy Recommendations

This research provides insight into the state of Deposit Insurance management and its implications for commercial banks in Kenya and regulators. Based on its analysis of the responses, it was found that the flat rate deposit insurance encourages risk taking since the system does not capture the actual risk the banks indulgences and this creates a moral hazard to the entire system. A policy of risk-based premiums were advocated due to its abilities to capture the risk taking behaviors of commercial banks. As concerns capital constraints, commercial banks in Kenya should establish economic capital concept and fully realize that any business produce risk will take up the capital resources. Short-term profit level and long-term profitability, quality, scale, profit and risk should be combined. A stable earnings system is better than a simply expand the scale of capital constraints management system. Second is to adjust the business development structure; low proportion of middle business income currently restricted bank profitability improves. Commercial banks in Kenya should diversify the earnings structure that they don't mainly rely on interest income.

For banks to maintain a proper threshold of liquidity the study found that liquidity management should encompass improving cash forecasting to enhance liquidity management, offering balance and information reporting to view aggregate balances across banks: providing real-time, multi-bank liquidity information to support liquidity optimization. Liquidity optimization solutions will provide banks with the capability to deliver intra-day liquidity information to their corporate customers in real-time, enabling them to manage cash flows, credit facilities and working capital quickly and

responsively across multiple accounts and subsidiaries. At root, effective and efficient management of liquidity and working capital has become a core capability of all-corporate, and now, more than ever, banks need to adapt by prioritizing best practice liquidity management.

This research provides insights into the nature of interest rates and the impact of interest capping in credit creation in Kenya. Based on its analysis of responses, it is recommended that the benefits of interest capping should be reviewed in a manner that will prevent credit rationing and high non performing loans are blamed due to the high interest rate regime, so an efficient system of making interest rates be determined by market forces be looked into and also the interbank market should be enhanced and made efficient to prevent cartel like behavior since it was clearly established that there effect of interbank market in interest rate transmission.

5.5 Areas for Further Research

Since the study variables account for 92.1% of the changes in the commercial bank performance, 7.9%of the banks' financial performance is determined by other factors. Therefore, a study should be done using different variables to determine their effect on performance. Some of the factors can be Board of Directors composition, skills and qualifications of the staff, values of collateral used and automations of the operations. Secondly, a study should be carried out to determine the effect of risk based deposit insurance on performance of banks since the study concentrated on flat rate deposit insurance system. Lastly, a comprehensive study should be carried out on the effect of interest rate capping on credit risk management, which this study did not cover.

REFERENCES

Acharya, V. V. (2003). Is the international convergence of capital adequacy regulation desirable? *The Journal of Finance*, *58*(6), 2745-2782.

Aikaeli, J. (2008). Commercial banks efficiency in Tanzania. Bank of Tanzania Monetary and Financial Affairs Department: A Paper Presented in a CSAE Conference on Economic Development in Africa at St. Catherine's College.

Akerlof, G. A. (1978). The market for "lemons": Quality uncertainty and the market mechanism. In *Uncertainty in Economics*, 235-251.

Allen, F., & Carletti, E. (2010). An overview of the crisis: Causes, consequences, and solutions. *International Review of Finance*, *10*(1), 1-26.

Altunbas, Y., Gambacorta, L., & Marques-Ibanez, D. (2009). Securitisation and the bank lending channel. *European Economic Review*, *53*(8), 996-1009.

Beckmann, R. (2007). Profitability of Western European banking systems: panel evidence on structural and cyclical determinants. Retrieved from: https://ssrn.com/abstract=1090570 or http://dx.doi.org/10.2139/ssrn.109057

Biggar, D., & Heimler, A. (2005). An increasing role for competition in the regulation of banks. *Antitrust Enforcement in Regulated sectors–Subgroup*, *1*.

Bowling, A. (1997). Research methods in health. Buckingham. *Open University Press. Buttle F (1996) SERVQUAL: review, critique, research agenda. European Journal of Marketing*, *30*(1), 8-32.

Bris, A., & Cantale, S. (2004). Bank capital requirements and managerial self-interest. *The Quarterly Review of Economics and Finance*, *44*(1), 77-101.

Broll, U., & Welzel, P. (2002). *Credit risk and credit derivatives in banking* (No. 228). Volkswirtschaftliche Diskussionsreihe, Institut für Volkswirtschaftslehre der Universität Augsburg.

Brooks, C. (2008). *RATS Handbook to accompany introductory econometrics for finance*. Cambridge: Cambridge Books.

Brown, M., & Zehnder, C. (2007). Credit reporting, relationship banking, and loan repayment. *Journal of Money, Credit and Banking*, *39*(8), 1883-1918.

Casu, B., Clare, A., Sarkisyan, A., & Thomas, S. (2011). Does securitization reduce credit risk taking? Empirical evidence from US bank holding companies. *The European Journal of Finance*, *17*(9-10), 769-788.

Chant, J., Dean, J., Galbraith, J. A., Peters, D. D., Popkin, J. W., Reuber, G. L., ... & Toten, J. E. (1976). [The 1977 Bank Act: Emerging Issues and Policy Choices]: Comments/Commentaires. *Canadian Public Policy/Analyse de Politiques*, *2*(3), 380-410.

Chen, N. F., Roll, R., & Ross, S. A. (1986). Economic forces and the stock market. *Journal of business*, 383-403.

Chiang, L. C., & Kee, H. T. (2009, June). Macro-Economic and Non-Macroeconomic Variables Link to Singapore Hotel Stock Returns. In *Proceedings of the Oxford Business and Economics Conference Program* (pp. 1-12).

Chonde, P. (2003). *A study of determinants of capital structures of public sector enterprises in Kenya*. Unpublished MBA Project, Nairobi: University of Nairobi.

Cicea, C., & Hincu, D. (2009). Performance evaluation methods in commercial banks and associated risks for managing assets and liabilities. *Communications of the IBIMA, 7,* 97-101.

Cooper, R. D., & Schindler, P. S. (2003). *Business Research Methods*. New Delhi: Tata McrGraw-Hill Edition..

Dardac, N., & Barbu, T. (2005). *Monedă, bănci şi politici monetare*. Editura Didactică şi Pedagogică.

De Kool, D. (2004, September). Monitoring and utilization: surveillance, struggle, symbol or source of inspiration. In *Conference of the European Group of Public Administration* (pp. 1-4).

De Long, J. B., Shleifer, A., Summers, L. H., & Waldmann, R. J. (1990). Noise trader risk in financial markets. *Journal of political Economy, 98*(4), 703-738.

Demirguc-Kunt, A., & Detragiache, E. (1997). The determinants of banking crises: Evidence from developed and developing countries. *World Bank, mimeo July*.

Demirgüç-Kunt, A., & Kane, E. J. (2002). Cross-country evidence on deposit-insurance. *The Quarterly Review of Economics and Finance, 42*(4), 695-699.

Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of political economy, 91*(3), 401-419.

Diamond, D. W., & Rajan, R. G. (2001). Liquidity risk, liquidity creation, and financial fragility: A theory of banking. *Journal of political Economy, 109*(2), 287-327.

Dickey, D. A., & Fuller, W. A. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica: Journal of the Econometric Society*, 1057-1072.

Ekpung, G. E., Udude, C. C., & Uwalaka, H. I. (2015). The impact of monetary policy on the banking sector in Nigeria. *International Journal of Economics, Commerce and Management*, *3*(5), 1015-1031.

Flamini, V., Schumacher, M. L., & McDonald, M. C. A. (2009). *The determinants of commercial bank profitability in Sub-Saharan Africa* (No. 9-15). International Monetary Fund.

Fredrick, O. (2013). The impact of credit risk management on financial performance of commercial banks in Kenya. *DBA Africa Management Review, 3*(1).

Gaitho, N. W. (2013). Role of credit reference bureaus on credit access in Kenya: A survey of commercial banks in Kenya. *European Scientific Journal, ESJ*, *9*(13).

Gilbert, R. A., & Wheelock, D. C. (2007). Measuring commercial bank profitability: proceed with caution.

Glyn, A. H. (2013). *Value at Risk. Financial Stability*, 63-79.

González, V. M., & González, F. (2008). Influence of bank concentration and institutions on capital structure: New international evidence. *Journal of Corporate Finance*, *14*(4), 363-375.

Gorton, G., & Rosen, R. (1995). Corporate control, portfolio choice, and the decline of banking. *The Journal of Finance*, *50*(5), 1377-1420.

Greenidge, K., & McClean, W. (2000). The impact of regulatory measures on commercial bank interest rates: a micro analysis of the Barbados case. *International Advances in Economic Research*, *6*(3), 544-556.

Gudmundsson, R., Ngoka-Kisinguh, K., & Odongo, M. T. (2013). The role of capital requirements on bank competition and stability: The case of the Kenyan banking industry. *Kenya Bankers Association-KBA Centre for Research on Financial Markets and Policy Working Paper Series*.

Hall, S. G., Henry, S. G. B., & Wilcox, J. B. (1989). *The long-run determination of the UK monetary aggregates* England: Bank of England.

Hardouvelis, G. A. (2010). Actions for a less procyclical financial system. *Economy & Markets, Eurobank Research*, *5*(5), 1-33.

Hardy, D. C., & Di Patti, E. B. (2001). *Bank reform and bank efficiency in Pakistan* (No. 2001-2138). Geneva: International Monetary Fund.

Hassan, M. R., & Nath, B. (2005, September). Stock market forecasting using hidden Markov model: a new approach. In *Intelligent Systems Design and Applications, 2005. ISDA'05. Proceedings. 5th International Conference on* (pp. 192-196). IEEE.

Haubrich, J. G., & Wachtel, P. (1993). *Capital requirements and shifts in commercial bank portfolios*. New York: University Salomon Center, Leonard N. Stern School of Business.

Heffernan, S. (1996). Modern banking in theory and practice,(pp 97-106). *John Wile and Sons, Chichester institute for Research in Economic History, Stockholm Economies, Stockholm*.

Hoelscher, D. S., Taylor, M. W., & Klueh, U. H. (2006). *The design and implementation of deposit insurance systems* (No. 251). In Geneva: ternational Monetary Fund.

Huizinga, H. (1998). *Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence*(Vol. 1900). Geneva: World Bank Publications.

Iftekhar, H., Schmiedel, H., & Song, L. (2009). *Return to retail banking and payments* (Vol. 1135). Working Paper Series.

Ilhomovich, S. E. (2009). *Factors Affecting the Performance of Foreign Bank in Malaysia* Unpublished Phd dissertation, Malaysia: Universiti Utara Malaysia.

Ingraham, P. W. (2005). Performance: Promises to keep and miles to go. *Public Administration Review, 65*(4), 390-395.

Ithai, J. K. (2013). Factors leading to slow adoption of derivatives use in Kenya: A case study of commercial banks in Kenya. *International Journal of Social Sciences and Entrepreneurship*, *1*(3), 454-468.

Jappelli, T., & Pagano, M. (1999). The welfare effects of liquidity constraints. *Oxford Economic Papers*, *51*(3), 410-430.

Jefferis, K. R., & Okeahalam, C. C. (2000). The impact of economic fundamentals on stock markets in southern Africa. *Development Southern Africa*, *17*(1), 23-51.

Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. *Econometrica: Journal of the Econometric Society,* 1551-1580.

Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. *Econometrica: Journal of the Econometric Society*, 1551-1580.

Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration—with applications to the demand for money. *Oxford Bulletin of Economics and statistics*, *52*(2), 169-210.

Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration—with applications to the demand for money. *Oxford Bulletin of Economics and statistics*, *52*(2), 169-210.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and psychological measurement*, *20*(1), 141-151.

Kale, Ö., Akkar, S., Ansari, A., & Hamzehloo, H. (2015). A ground-motion predictive model for Iran and Turkey for horizontal PGA, PGV, and 5% damped response spectrum: Investigation of possible regional effects. *Bulletin of the Seismological Society of America*, *105*(2A), 963-980.

Kamau, A. W. (2009). *Efficiency in the banking sector: An empirical investigation of commercial banks in Kenya*. Published PhD Thesis, Nairobi: University of Nairobi.

Kapstein, E. B. (1989). Resolving the regulator's dilemma: international coordination of banking regulations. *International Organization*, *43*(2), 323-347.

Kashyap, A. K., Rajan, R., & Stein, J. C. (2002). Banks as liquidity providers: An explanation for the coexistence of lending and deposit-taking. *The Journal of Finance*, *57*(1), 33-73.

Katrodia, A. (2012). Corporate Governance Practices in the Banking Sector. *ABHIN AV Journal of Research in Commerce & Management*, *1*, 37-44.

Keeley, M. C. (1990). Deposit insurance, risk, and market power in banking. *The American economic review*, 1183-1200.

Kenya Bankers association (2017). *Growth of the bank sector in Kenya*. Nairobi: government Press.

Kiilu, M. R., & Ngugi, K. (2014). Effect of Public Financial Management.

Kilungu, M. (2015). *Determinants of Organizational Commitment of Part-Time Academic Staff in Institutions of Higher Education in Nairobi and Mombasa Counties in Kenya,* Unpublished MBA thesis, Nairobi: University of Nairobi.

Kimeu, J. (2008). *Credit risk management techniques of unsecured banks loans of commercial banks in Kenya.* Unpublished MBA thesis, Nairobi: University of Nairobi.

Kiruri, R. M. (2013). The effects of ownership structure on bank profitability in Kenya. *European Journal of Management Sciences and Economics*, *1*(2), 116-127.

Koch, T.W. (1995). *Bank Management. (3*rd edn.). London: The Dryden Press

Kombo, K. (2014). *Effects of Basel III Framework on Capital Adequacy of Commercial Banks in Kenya,* Unpublished PhD dissertation, Nairobi: United States International University-Africa.

Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance*, *34*(3), 146-159.

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Delhi: New Age International.

Kotter, J. P. (1995). Leading change: Why transformation efforts fail.

Kuria, R. W. (2010). *Determinants of Capital Structure of Companies Quoted in the Nairobi Securities Exchange.* Unpublished MBA research project, Nairobi: University of Nairobi.

Kwambai, K. D., & Wandera, M. (2013). Effects of credit information sharing on nonperforming loans: the case of Kenya commercial bank Kenya. *European Scientific Journal, ESJ*, *9*(13).

Lavrakas, P. J. (2008). *Encyclopedia of survey research methods*. London: Sage Publications.

Levine, R., Caprio, G., & Barth, J. (1999). *Banking systems around the globe: do regulation and ownership affect performance and stability?*. Geneva: The World Bank.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology*.

Llewellyn, (1999). *The profitability of banks in Japan: the road to recovery?,* Working paper

Loutskina, (2005). Government ownership of banks. *The Journal of Finance*, 57(1), 265-301

Lwekoramu, A. (2016). *Customer Perceptions on Service Quality in Tanzanian Banking Industry* Unpublished PhD thesis, Nairobi: University of Nairobi.

Macharia, E. W. (2013). The effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. *International Journal of Social Sciences and Entrepreneurship*, *1*(2), 688-701.

Maigua, C., & Mouni, G. (2016). Influence of interest rates determinants on the performance of commercial banks in Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *6*(2), 121-133.

Marshall, A. (2009). *Principles of economics: unabridged eighth edition*. Cosimo, Inc..

Mathuva, D. M. (2009). Capital adequacy, cost income ratio and the performance of commercial banks: The Kenyan Scenario. *The International journal of applied economics and Finance*, *3*(2), 35-47.

Mbui, C. K. (2016). *Effect of strategic management practices on export value addition in the tea subsector in Kenya,* Unpublished PhD dissertation, Juja: JKUAT.

Mishkin, F. S. (1999). Global financial instability: framework, events, issues. *Journal of economic perspectives*, *13*(4), 3-20.

Mohanty, S. K. (2008). Basel II: Challenges and risks. *Academy of Banking Studies Journal*, *7*(1/2), 109.Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, *48*(3), 261-297.

Monyi, J. N. (2017). *Determinants of Financial Performance of Deposit Taking Microfinance Institutions in Kenya*, Unpublished PhD dissertation, Juja: JKUAT.

Morekwa Nyamongo, E., & Temesgen, K. (2013). The effect of governance on performance of commercial banks in Kenya: a panel study. *Corporate Governance: The international journal of business in society*, *13*(3), 236-248.

Mugenda, O. M., & Mugenda, A. G. (2003). Research methods. *Quantitative and qualitative approaches*. Nairobi: Actress Press.

MUIRURI, P. M. (2015). *Effects of Central Bank Regulatory Requirements on Financial Performance of Commercial Banks in Kenya*, Unpublished PhD dissertation, Juja: JKUAT.

Muiruri, P. M., Memba, F. S., & Njeru, A. (2015). Moderating effects of bank ownership on the relationship between securitization uptake and financial performance of commercial banks in Kenya. *Academic journal of economic studies*, *1*(2), 24-43.

Mwania, M. & Muganda, N. (2011). *An Investigation on the Relationship Between Information*

Mwega, F. M. (2011). *Global Financial Crisis: Kenya: Discussion series*. Paper 7. [Online]. May

MWONGELA, D. (2016). The Effects of Tax Reforms on Customs Tax Productivity in Kenya (Doctoral dissertation, School of Economics, University of Nairobi).Myers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, *39*, 575- ’92.

Nayyar, P. R. (1990). Information asymmetries: A source of competitive advantage for diversified service firms. *Strategic Management Journal*, *11*(7), 513-519.

Ndung'u, N., & Ngugi, R. (2000). *Banking sector interest rate spread in Kenya* (No. 5). Nairobi: Kenya Institute for Public Policy Research and Analysis.

Ngugi, R. W., & Kabubo, J. W. (1998). *Financial sector reforms and interest rate liberalization: The Kenya experience*. AERC, Nairobi: KE.

Ngumi, F. N. (2013). *Inventory management practices and productivity of large manufacturing*

Nguyen, N. T. (2007). *Advanced methods for inconsistent knowledge management*. New York: Springer Science & Business Media.

Njeule, A. M. (2013). *Effects of Central Bank of Kenya prudential regulations on financial*

Nwanko, R. N., & Onwumechili, C. (1991). Communication and social values in cross-cultural adjustment. *Howard Journal of Communications, 3*(1-2), 99-111.

Nyanga, O.V. (2012). *Determinates of Financial Performance of Commercial Banks in Kenya*,

Nzioki, S. J. (2011). *The impact of capital adequacy on the financial performance of commercial banks quoted at the Nairobi Stock Exchange.* Unpublished Phd thesis, Nairobi: University of Nairobi.

Obwogi, J., Kosimbei, G., & Nasieku, T. (2013). Intermediation Efficiency and Productivity of Commercial Banks in Kenya; A data envelopment and malmquist productivity index analysis.

Odunga, R. M., Nyangweso, P. M., Carter, D. A., & Mwarumba, M. (2013). Credit Risk,"Capital Adequacy and Operating Efficiency Of Commercial Banks in Kenya". *International Journal of Business and Management Invention*, *2*(9), 6-12.

Olweny, T., & Chiluwe, M. (2012). The effect of monetary policy on private sector investment in Kenya. *Journal of Applied Finance and Banking*, *2*(2), 239.

Olweny, T., & Shipho, T. M. (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya. *Economics and Finance Review*, *1*(5), 1-30.

Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, *3*(1), 237-252.

Orodho, A. J. (2003). *Essentials of educational and social science research methods.* Nairobi: Masola Publishers.

Pareto, V. (1974). Walras. *Travaux de Sciences Sociales*, 176-178.

Pather, S., Erwin, G., & Remenyi, D. (2003, September). Measuring e-Commerce effectiveness: a conceptual model. In *Proceedings of the 2003 annual research conference of the South African institute of computer scientists and information technologists on Enablement through technology* (pp. 143-152). South African Institute for Computer Scientists and Information Technologists.

Patton, M. Q. (2002). Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative social work*, *1*(3), 261-283.

performance of Commercial banks in Kenya. Unpublished MBA project. Nairobi: University of Nairobi.

Phillips, P. C., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, *75*(2), 335-346.

Polit, D. F., Beck, C. T., & Hungler, B. P. (1997). *Study guide to accompany essentials of nursing research: Methods, appraisal, and utilization*. Lippincott: Williams & Wilkins.

Rapach, D. E., Wohar, M. E., & Rangvid, J. (2005). Macro variables and international stock return predictability. *International journal of forecasting*, *21*(1), 137-166.

Rawlings, J. O., Pantula, S. G., & Dickey, D. A. (2001). *Applied regression analysis: a research tool*. Springer Science & Business Media.

Robinson, J., & Eatwell, J. (1973). *An introduction to moderns economics* (No. 330.1/R66i).

Rusuli, C., Tasmin, R., Takala, J., & Norazlin, H. (2013). Factor retention decisions in exploratory factor analysis results: A study type of knowledge management process at Malaysian university libraries. *Asian Social Science*, *9*(15), 227.

Said, R. M., & Tumin, M. H. (2011). Performance and financial ratios of commercial banks in Malaysia and China. *International Review of Business Research Papers*, *7*(2), 157-169.

Sakyi, P. A., Ofoeda, I., Kyereboah-Coleman, A., & Abor, J. Y. (2014). Risk and performance of non-bank financial institutions. *International Journal of Financial Services Management*, *7*(1), 19-35.

Samad, A. (2004). Bahrain commercial bank's performance during 1994-2001. *Credit and Financial Management Review*, *10*(1), 33-40.

Saunders, A., & Cornett, M. (2003). Financial Institutions and Markets.

Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods for business studies. *Second Impression, Dorling Kindersley (India) Pvt Ltd*.

Sekaran, U., & Bougie, R. (2003). Research methodology for business. series, Cass Business School, November 2010

Shisia, A., Marangu, W. N., & Omwario, B. (2014). Assessment of the contribution of Credit Reference Bureau Regulation Towards Mitigating Credit Risks in the Kenya's Banking Industry. *European Journal of Business and Management*, *6*(14), 1-8..

Simon, H. A. (1997). *Models of bounded rationality: Empirically grounded economic reason* (Vol. 3). New York: MIT press.

Stiglitz, J. E. (2001). Principles of financial regulation: a dynamic portfolio approach. *The World Bank Research Observer*, *16*(1), 1-18.

Technology (IT) Conceptualization and Bank Performance. School of Computer Science & Information Technology, Kimathi University College of Technology, Kenya, AIBUMA Conference paper, 2011

Tregenna, F. (2009). The fat years: the structure and profitability of the US banking sector in the pre-crisis period. *Cambridge Journal of Economics*, *33*(4), 609-632.

Turan, G., & Koskija, A. (2014). Nonperforming loans in Albania. *Academic Journal of Interdisciplinary Studies*, *3*(3), 491.

Van Greuning, H., & Bratanovic, S. B. (2003). Analyzing and managing banking risk: A framework for assessing corporate governance and financial risk. Washington, DC: The World Bank. Van, Greuning, H., & Iqbal, Z., 2008. *Risk Analysis for Islamic Banks*.

Wheelock, D. C., & Wilson, P. W. (2000). Why do banks disappear? The determinants of US bank failures and acquisitions. *Review of Economics and Statistics*, *82*(1), 127-138.

Williams, D. W. (2003). Measuring government in the early twentieth century. *Public Administration Review*, *63*(6), 643-659.

Williams, K. (1948). The Classical Theory of risk—a statistical approach. *Journal of the Staple Inn Actuarial Society*, *7*(3), 126-143.

Wongbangpo, P., & Sharma, S. C. (2002). Stock market and macroeconomic fundamental dynamic interactions: ASEAN-5 countries. *Journal of Asian Economics*, *13*(1), 27-51.

Yang, K., & Miller, G. J. (2008). *Handbook of research methods in public administration.* New York: MIT Press.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in quantitative methods for psychology*, *9*(2), 79-94.

Zikmund, W. G. babin, BJ, Carr, JC, & Griffin, M.(2010). *Business research methods*.

Zinbarg, M. (2005). Research methods. *Pearson Publisherswww. ijcbss. org ISSN*, *2312*, 59861.

APPENDICES

Appendix I: Letter of introduction

Date: 14th May 2017

Mr. Julius Oketch,

Jomo Kenyatta University Agriculture and Technology,

Dear respondent,

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I am a post graduate student at JKUAT undertaking a Doctor of Philosophy degree. As part of academic requirements for the award of the degree; I am expected to carry out research. The study is on: ***Effect of financial sector policies on performance of commercial Banks in Kenya.***

You have been selected to participate in the study because of the position you hold in your bank. Your responses are voluntary and will be confidential. Responses will not be identified bythe individual. All responses will be compiled together and analysed as a group.

If you have any questions or concerns, please contact the undersigned. If you have any questions about your rights as a research subject, you may contact my supervisors**Prof. Gregory Namusonge** on gsnamusonge@yahoo.co.ukor **Prof Maurice Sakwa**onsakwa98@yahoo.comto discuss them.

Your consideration is highly appreciated.

Yours faithfully,

Julius Oketch

Appendix II: Questionnaire

SECTION A: GENERAL INFORMATION

1. **What is your current job title**?

   Finance Manager [ ] Chief Operating Officer [ ]

   Other (*specify*)……

2. **What is the name of your bank**…….(*optional*)
3. **How long have you been employed by this commercial Bank**?_____

   Less than 5 Years [ ] 5-10 Years[ ] 10-15 Years [ ] Over 15 Years [ ]

4. **Please tick your age bracket**

   20 years or below [ ] 21-30 years [ ] 31-40 years [ ]

   Above 40 years [ ]

5. **Please indicate your level of education (***please tick your appropriate level***)**

   Diploma [ ] Undergraduate Degree [ ] Postgraduate Degree [ ]

   Others (*please specify*)

   _____

SECTION B: LIQUIDITY MANAGEMENT POLICIES

The following are some of the liquidity management policies implemented by the Financial Sector. To what level do you agree with the following statements concerning your commercial bank, Please tick (√) the appropriate opinion based on the following attributes: *SD= strongly disagree; D= disagree; N= neutral; A= agree; SA= strongly agree*

No.	STATEMENT	SD	D	N	A	SA
1.	The bank has an adequate information system for reporting liquidity requirements.					
2.	The system is integrated into the overall management information systems of the bank.					
3.	The bank has a process of assessing cash inflows against its outflows to identify the potential for any shortfall.					
4.	There are regular, independent reviews and evaluations of the effectiveness of the system.					
5.	The bank has maintained a statutory minimum of twenty per cent (20%) of all its deposit liabilities, matured and short term liabilities in liquid assets.					

Which other effect does Liquidity Management have on performance of the bank?

……

……

……

SECTION C: CAPITAL ADEQUACY MANAGEMENT POLICIES

The following are some of the Capital Adequacy policies implemented by commercial banks. To what level do you agree with the following statements concerning your corporation? Please tick (√) the appropriate opinion based on the following attributes: *SD = strongly disagree D = disagree; N = neutral; A = agree; SA = strongly agree*

No.	STATEMENT	SD	D	N	A	SA
1.	The bank maintains a core capital of not less than eight per cent of total risk weighted assets plus risk weighted off-balance sheet items					
2.	The bank maintains a core capital of not less than eight per cent of its total deposit liabilities					
3.	The bank maintains a total capital of not less than twelve per cent of its total risk weighted assets plus risk weighted off-balance sheet items					
4.	The bank maintains a risk-based approach to capital adequacy measurement applies to both on and off - balance sheet items. The bank assesses and provides for these risks in the evaluation of their respective capital adequacy levels					
5.	The bank submits to Central Bank of Kenya the return on Capital to Risk Weighted Assets, Form CBK/PR3, at the end of every month, received by the 10thday of the following month.					

Which other effect does Capital Adequacy Management have on performance of the bank?

……

……

……..

SECTION D: DEPOSIT INSURANCE POLICIES

The following are some of the depositinsurance policies implemented by commercial banks. To what level do you agree with the following statements concerning your corporation? Please tick (√) the appropriate opinion based on the scale given*SD = strongly disagree; D = disagree; N = neutral; A = agree; SA = strongly agree*

No.	STATEMENT	SD	D	N	A	SA
1.	Deposit insurer has a formal mandate, consistent with public policy objectives, that specifies its role, responsibilities and specific powers it extends its function to include supervision of banks, preventative action and risk/loss-minimization.					
2.	The Deposit insurance hasgovernance features to ensure that itis operationally independent and insulated from undue influence from the government, industry and regulatory/supervisory authorities					
3.	Deposit insurance coverage includes the domestic operations of foreign banks (whether in the form of subsidiaries or branches) and the foreign operations of domestic banks (whether in the form of subsidiaries or branches)					
4.	Deposit insurance introduces a moral hazard issue, encouraging both depositors and banks to take on excessive risks.					
5.	Deposit insurance premiums risk-adjusted and has systems for assessing risks and calculating risk-adjusted premiums, as well as the range of premiums applied to the assessed base.					
6.	The financial system safety net provides a framework for the early detection and timely intervention and resolution of troubled banks					
7.	The current deposit coverage limit is sufficient and it effectively covers over 80% of deposits in the bank.					

Are deposit insurance premiums risk-adjusted or flat rate? Please describe the system for assessing risks and calculating premiums?

……...……B

riefly describe how deposit insurance system can be enhanced to address the actual issues in the banking industry.

…….……

……...……

SECTION E: INTEREST RATE MANAGEMENT POLICIES

The following are some of Interest Rate policies implemented by commercial banks in Kenya. To what level do you agree with the following statements concerning your corporation? Please tick (√) the appropriate opinion based on the scale given: *SD = strongly disagree; D = disagree; N = neutral; A = agree; SA = strongly agree*

NO.	STATEMENT	SD	D	N	A	SA
1.	The Bank adheres to the Kenya Bankers Reference Rate stipulations					
2.	The Bank prescribes a rate that is in line with the borrower's credit rating provided by credit bureau					
3.	Interest rate changes adversely affect the overall performance of the bank					
4.	The interest capping law will affect the performance of the bank					
5.	Interest capping law should be reviewed					

Which other effect does Interest Rate Management have on performance of the bank?

……

……

……..

SECTION F: CREDIT RISK MANAGEMENT POLICIES

The following are some of theCredit Risk Management policies implemented by commercial banks in Kenya. To what level do you agree with the following statements concerning your corporation? Please tick (√) the appropriate opinion based on the scale given: *SD = strongly disagree; D = disagree; N = neutral; A = agree; SA = strongly agree*

No.	STATEMENT	SD	D	N	A	SA
1.	Proper Credit risk Management reduces the rate on non performing loans					
2.	Credit risk Management affects financial performance of our bank					
3.	The bank only lends to clients with a positive report from credit reference bureaus.					
4.	Credit reference bureaus have significantly reduced the rate of credit risk in banks					
5	The bank uses credit scoring models to measure and control credit risk					
6	Increase in capital requirement is used to buffer credit risk in the institution					
7	Interest rate capping has positively reduced the amount of non-performing loans					

Which other effect does Credit Risk Management have on performance of the bank?

……

……

What other factors affect commercial bank performance in Kenya? Explain……

SECTION G: BANK PERFORMANCE

The following are some of theCredit Risk Management policies implemented by commercial banks in Kenya. To what level do you agree with the following statements concerning your corporation? Please tick (√) the appropriate opinion based on the scale given: *SD = strongly disagree; D = disagree; N = neutral; A = agree; SA = strongly agree*

No.	STATEMENT	SD	D	N	A	SA
1	The return on equity in the last eight years has been on an increasing trend					
2	The bank has better return on equity than industry average (benchmarks)					
3	The bank has better return on assets than industry average (benchmarks)					
4	The bank has an increasing return on assets in the last eight years					
5	The overall risk threshold in the bank has been lower than the industry average					

Explain other aspects of performance in the bank that the above statements haven not captured……

……

THANK YOU FOR YOUR TIME

Appendix III: Secondary data collection schedule

s/n		1	2	3	4	5	6	7	8
1	Total loans								
2	Non-performing loans								
3	Total assets								
4	Interest income								
5	Capital adequacy ratio								
7	Total deposit								
8	Total advances								
9	Liquid assets								
10	Liquid liabilities								
11	Net profit after tax								
12	Equity								
13	Deposit Insurance premium								
14	Non-interest income								
15	Interest rate								

Appendix IV: List of Commercial Bank

1.	Kenya commercial bank ltd
2.	Standard charted bank ltd
3.	Barclays bank of Kenya ltd
4.	Co-operative bank of Kenya ltd
5.	CFC Stanbic bank ltd
6.	Equity bank ltd
7.	Bank of India ltd
8.	Bank of Baroda ltd
9.	Commercial Bank of Africa Ltd
10.	Prime bank ltd
11.	National bank of Kenya ltd
12.	Citi bank N.A.
13.	Bank of Africa ltd
14.	NIC bank ltd
15.	Guaranty Trust bank ltd
16.	I & M Bank ltd
17.	Diamond trust ltd
18.	Family bank ltd
19.	Housing finance corporation ltd
20.	Eco bank ltd
21.	Habib bank ltd
22.	Oriental commercial bank ltd
23.	Habib A.G.Ziruch ltd
24.	Middle east bank ltd
25.	Consolidated bank of Kenya ltd
26.	Credit bank ltd
27.	Trans-National bank ltd
28.	African Banking corporation ltd

29. Giro commercial bank ltd
30. Equatorial bank ltd
31. Paramount universal bank ltd
32. Jamii Bora bank ltd
33. Victoria commercial bank ltd
34. Guardian Bank ltd
35. Development bank of Kenya ltd
36. Fidelity commercial bank ltd
37. K-Rep bank ltd
38. Gulf African bank ltd
39. First community bank ltd
40. UBA Kenya bank ltd.
41. Chase bank ltd (under receivership)
42. Imperial bank ltd(under receivership 13th October 2015)
43. Dubai bank ltd (under liquidation)
44. Charterhouse bank ltd (under statutory management)

Source bank supervision report CBK (2017)