

**EFFECTS OF ASSET AND LIABILITY MANAGEMENT ON THE  
FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

**BY**

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## DECLARATION

I, the undersigned, declare that this research is my own work and has never been presented in any other university or college for a degree or any other award.

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This research report has been submitted for examination with my approval as the University Supervisor.

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## **DEDICATION**

With special dedication and admiration, I dedicate this research to my parents Meshack and Doreen.

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## **LIST OF ABBREVIATIONS**

ALCO	-Asset Liability Management Committee
ALM	-Asset Liability Management
CAMEL	-Capital Adequacy, Asset Quality, Management Efficiency, Earnings Performance, Liquidity
CBK	-Central Bank of Kenya
CIR	-Cost Insurance Ratio
FDIC	-Federal Deposit Insurance Corporation
GDP	-Gross Domestic Product
ES	-Efficient Structures
LDCs	-Least Developed Countries
MP	-Market Hypothesis
NII	-Net Interest Income
ROA	-Return on Assets
ROE	-Return in Equity
RMP	-Relative Market Hypothesis
SBI	-State Bank of India
SCP	-Structure Conduct Performance
SSA	-Sub Saharan Africa

## **ABSTRACT**

The objective of this study was to determine the effects of asset liability management on the financial performance of commercial banks in Kenya between the years of 2004-2013. The factors identified under AML that effect financial performance were based on the CAMEL approach which includes capital adequacy, asset quality, management efficiency, liquidity and operational efficiency. ALM deals with the optimal investment of assets in view of meeting current goals and future liabilities. It is related to the management of the risks associated with liquidity mismatch, interest rates and foreign exchange movements. Therefore, ALM is concerned with an attempt to match assets and liabilities in terms of maturity and interest rate sensitivity to minimize interest rate and liquidity risks. Financial Performance on the other hand is a measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. The study adopted a descriptive design in its methodology and the researcher chose to study commercial banks due to availability of needed data and convenience. All the 43 commercial banks in Kenya were targeted for this study. Secondary data was obtained from annual Central bank of Kenya Banks supervision reports. SPSS version 20.0 was used for data analysis. The t-test with a 5% level of significance was used in the study and the correlation coefficient (r), coefficient of determination and analysis of variance (ANOVA) were calculated. The analysis showed that all the CAMEL factors had a statistically significant impact on financial performance. Based on the findings, the study recommended policies that would encourage revenue diversification, reduce operational costs, minimize credit risk and encourage banks to minimize their liquidity holdings. Further research on factors influencing the liquidity of commercials banks in the country could add value to the financial performance of banks and academic literature for further study.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Commercial banks play an important role in the development of a country. A sound, progressive and dynamic banking system is a fundamental requirement for economic development. As an important segment of the tertiary sector of an economy, commercial banks act as the backbone of economic growth and prosperity by acting as a catalyst in the process of development. They inculcate the habit of saving and mobilize funds from numerous small households and business firms spread over a wide geographical area. The funds so mobilized are used for productive purposes in agriculture, industry and trade (Vossen, 2010).

Given the relation between the well-being of the banking sector and the growth of the economy (Rajan and Zingales, 1998; Levine, 1998), knowledge of the underlying factors that influence the financial sector's financial performance is therefore essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities. Knowledge of these factors would be useful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the financial performance of the Kenyan banking sector.

There are many aspects of the performance of commercial banks that can be analyzed. This study focuses on the financial performance of commercial banks in Kenya. Aburime (2008) observed that the importance of bank financial performance can be appraised at the micro and macro levels of the economy. At the micro level, profit is the essential prerequisite of a competitive banking institution and the cheapest source of funds. It is not

merely a result, but also a necessity for successful banking in a period of growing competition on financial markets. Hence the basic aim of every bank management is to maximize profit, as an essential requirement for conducting business.

At the macro level, a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Bank profits provide an important source of equity especially if re-invested into the business. This should lead to safe banks, and as such high profits could promote financial stability (Flamini et al, 2009). However, too high profitability is not necessarily good. Uzhegova(2010) observed that too high profitability could be indicative of market power, especially by large banks. This may hamper financial intermediation because banks exercising strong market power may offer lower returns on deposit but charge high interest rates on loans. Too low profitability, in turn, might discourage private agents (depositors and shareholders) from conducting banking activities thus resulting in banks failing to attract enough capital to operate. Furthermore, this could imply that only poorly capitalized banks intermediate savings with the corresponding costs for sustainable economic growth.

According to Memmel and Scherteler (2010), traditional perception on such financial intermediaries show a simple logic that a bank accept deposits with short term maturities from a large number of individuals and grants loans with long term maturities to a small number of borrowers. These transformation activities expose a bank to credit, interest rate, and liquidity risks.

The profitability and overall financial performance of commercial banks is therefore very vital for the smooth operation of the financial system of a country (Tektaş et al, 2005). The financial sector has been regulated as all of other countries financial sector and it contributes to a lion share for the healthiness of the country's financial system (Francis, 2007). Therefore, the sector's performance is of the major concern for those who are responsible for policy making and operating day to day with it. Among the possible factors that have effect on commercial banks financial performance, asset liability management (ALM) is the major one (Kosmidou, 2004).

### **1.1.1 Asset Liability Management**

Asset liability management, ALM, is defined by different scholars like Gup and Brooks (1993), Zawalinska (1999), and Charumathi (2008). Charumathi (2008) defined ALM as a dynamic process of planning, organizing, coordinating, and controlling the assets and liabilities; their mixes, volume, maturities, yield, and costs in order to achieve a specified net interest income (NII). In other words, it deals with the optimal investment of assets in view of meeting current goals and future liabilities. It is related to the management of the risks associated with liquidity mismatch, interest rates and foreign exchange movements. Therefore, ALM is concerned with an attempt to match assets and liabilities in terms of maturity and interest rate sensitivity to minimize interest rate and liquidity risks (Zawalinska, 1999).

It is therefore appropriate for institutions (banks, finance companies, leasing companies, insurance companies, and others) to focus on asset-liability management when they face financial risks of different types. Asset liability management includes not only a formalization of this understanding, but also a way to quantify and manage these risks.

Further, even in the absence of a formal asset liability management program, the understanding of these concepts is of value to an institution as it provides a truer picture of the risk/reward trade-off in which the institution is engaged (Fabozzi and Kanishi, 1991).

### **1.1.2 Financial Performance**

This is a measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are many different ways to measure financial performance, but all measures should be taken in aggregation. Aburime (2009) observed that the importance of bank profitability can be appraised at the micro and macro levels of the economy.

At the micro level, profit is the essential prerequisite of a competitive banking institution and the cheapest source of funds. It is not merely a result, but also a necessity for successful banking in a period of growing competition on financial markets. Hence the basic aim of every bank management is to maximize profit, as an essential requirement for conducting business. At the macro level, a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Bank profits provide an important source of equity especially if re-invested into the business. This should lead to safe banks, and as such high profits could promote financial stability (Flamini et al, 2009).

### **1.1.3 Effects of Asset Liability Management on Financial Performance**

In the banking area, different authors try to study the determinants of commercial banks financial performance. Most recently, Ramlall (2009) and Alper and Anbar (2011) found that bank financial performance can be hindered by both internal and external factors. Internal factors are related to bank management which encompasses the ALM culture of the bank and external determinants are factors which reflect the economic and legal environment that affect the operation and performance of commercial banks. The common macroeconomic factors that determine the financial performance of banks in general and commercial banks in particular are GDP, inflation rate, market interest rates, and ownership.

With regard to the microeconomic determinants of commercial banks financial performance, ALM plays a dynamic role. According to Hester and Zoellner (1966), there is statistically significant relationship between ALM and financial performance and they disregard the null hypothesis that there is no relationship between them. On the contrary, Kosmidou et al,(2004) found that liability management plays its own pivotal role in contributing profitability difference among commercial banks. However, before this study Vasiliou (1996) suggested that asset management rather than liability management play the key role in explaining the differences in banks profitability.

This study identified several AML factors which have a direct influence on the financial performance of commercial banks. The variables chosen, which are the explanatory variables in this study was sourced from the balance sheet of commercial banks. A relationship of how well a bank is doing by assessing the returns on equity (ROE), which is an indicator of financial performance vis-à-vis other variables in the form of

performance ratios. Progressive ALM policies ensures that banks financial performance is at its peak

Financial performance can therefore be pegged on how well the ALM process within an institution is efficient. A robust ALM process ensures that risks associated with failures caused in mismatch of firms assets and liabilities are well minimized if not eliminated. There seems to be a positive correlation between how well firms ALM processes are and their financial performance.

#### **1.1.4 Commercial Banks in Kenya**

The banking industry in Kenya is governed by the Companies Act, the Banking Act, the Commercial Bank of Kenya Act, and the various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalized in 1995 and exchange control lifted. The CBK which falls under the Ministry of Finance is responsible for formulating and implementing monetary policies and fostering the liquidity, solvency and proper functioning of the financial system. CBK publishes information on Kenya's commercial banks and non-banking financial institutions, interest rates and other publications and guidelines (CBK, 2009).

Commercial banks in Kenya are going through massive transformation efforts to cope with the constantly changing business environment. Increasing domestic and global competition, economic downturn, rapidly changing market trends, and volatile financial markets have all added to the pressure on organizations to come up with effective responses to survive and succeed. The role of banks in an economy is paramount because

they execute monetary policies and provide means for facilitating payments for goods and services in the domestic and international trade (Kamau, 2009).

All banks in Kenya have an asset and liability management committee (ALCO). The ALCO is a decision making unit responsible for balance sheet planning from a risk - return perspective including the strategic management of interest rate and liquidity risks. Each bank will have to decide on the role of its ALCO, its responsibility and also the decisions to be taken by it. The business and risk management strategy of the bank should ensure that the bank operates within the limits / parameters set by the Board (Kamau, 2009).

The business issues that an ALCO would consider will include product pricing for both deposits and advances, desired maturity profile of the incremental assets and liabilities, etc. In addition to monitoring the risk levels of the bank, the ALCO should review the results of and progress in implementation of the decisions made in the previous meetings. The ALCO would also articulate the current interest rate view of the bank and base its decisions for future business strategy on this view (Kamau, 2009).

In respect to the funding policy, for instance, its responsibility would be to decide on source and mix of liabilities or sale of assets. Towards this end, it will have to develop a view on future direction of interest rate movements and decide on a funding mix between fixed verses floating rate funds, wholesale verses retail deposits, money market verses capital market funding, domestic verses foreign currency funding, etc. Individual banks will have to decide the frequency for holding their ALCO meetings (Kamau, 2009).

Taking one step ahead, the banks now focus on integrated balance-sheet management where all the relevant factors which affect an appropriate balance sheet composition deserve consideration. Therefore various components of balance sheet are analyzed keeping in view the strengths of a bank. The main focus is on value addition, analysis of different scenarios, comprehensive risk and dynamic approach of balance sheet evaluation in the present ALM system.

## **1.2 Research Problem**

The objective of ALM is not to eliminate risk. Rather, it is to manage risks within a framework that includes self-imposed limits. In setting limits for particular types of risk, a bank should consider its solvency position and its risk tolerance. Limits should be set after careful consideration of corporate objectives and circumstances, and should take into account the projected outcomes of scenarios run using a range of plausible future business assumptions. Within these limits, risks can be reduced if this is cost effective, or increased, if justified by the expectation of enhanced returns and the availability of additional capital, without endangering the capacity of the bank to meet its commitments to stakeholders (Mahail, 2009).

The result of the simultaneous unstable financial markets and changes in interest rates make asset and liability essential in prudent portfolio management (Mahail, 2009). The preceding development therefore put operators in the industry under considerable pressure to improve upon their profit margin by finding effective strategies for managing their asset and liability portfolios which if not done will lead to a sharp reduction in profits. The rewards from such process improvements in the sector would spread across

firm, industry and economic levels. Therefore, better ALM processes would have a positive impact on the financial performance of banks.

Since ALM has a direct effect on the financial performance of banks, it is prudent to have an effective AML process within banks that closely monitor and equalize both the assets and liabilities management. The sheer size and complexity of the economy increases the importance of this topic and this is all the more reason it needs to be considered (Vossen 2010).

In Kenya, studies that have been so far carried out have been on ALM and its effect on liquidity. Research done by Citi Research (2012) on Kenyan Banks highlighted the impact of ALM on banks liquidity. It found out that there was a widening gap in liquidity due to duration mismatch between their funding and asset risks. Another study carried out by Muchangi (2013), established the existence of a positive relationship between liquidity risks of commercial banks and asset liability management policies since most banks have asset liability management committee who undertake regular and systematic appraisal of asset liability management policies across the banks operational areas.

Previous studies have focused on the effect of ALM on liquidity. This study goes further to include not only liquidity but also other variables which have been sighted as influencing financial performance with relation to ALM. This leaves a wide knowledge gap that this study seeks to fill in. This study builds upon the initial literature and studies by explicitly examining the effect of ALM on the financial performance of banks in Kenya.

### **1.3 Objective of the Study**

This research study sought to find out the effect of asset liability management on financial performance of commercial banks in Kenya.

### **1.4 Value of the Study**

This research study was significant because it dealt with issues Kenyan banks are facing and will continue to confront in the future. In the present scenario, asset liability management is important for the banking industry due to increased importance of managing the asset liability mix. It will help to assess the risks and manage the risks by taking appropriate actions. So, to understand the asset liability management process and various strategies that are helpful for the banks to manage the risks, this topic was selected. Therefore, it was beneficial for me to develop my knowledge regarding the asset liability management process, functions and its effect in the financial performance of commercial banks.

The research study might contribute and form the basis for further research into the application of innovative asset liability management strategies in liquidity risks by similar industry players. This can go a long way in coming up with even better and more efficient strategies that are specific to different bank sizes, markets in which they operate and balancing of the different risk appetites that may be present within the different banks.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter highlights the literature relating to the research topic. This section deals with the review of theories relating to asset liability management and financial performance; general literature review; review of empirical studies and finally gave a conclusion from the literature review indicating the gaps the research is addressing and the original contribution it will make to the field in general.

### **2.2 Theories and Models of Bank Financial Performance**

Studies on the performance of banks started in the late 1980s/early 1990s with the application of two industrial organizations models: the Market Power (MP) and Efficiency Structure (ES) theories (Athanasoglou et al, 2006). The balanced portfolio theory has also added greater insight in to the study of bank financial performance (Nzongang and Atemnkeng, 2006).

Numerous studies have found a positive relationship between market structure and firm financial performance. While there is general acceptance of the empirical relationship there is no consensus as to the causation. The relationship between market structure and performance is viewed from two competing hypothesis: The Market Power Hypotheses in the form of Structure-Conduct-Performance (SCP) and Relative-Market-Power(RMP), and the Efficient-Structure (ES) hypotheses in the form of X-efficiency or Scaleefficiency

#### **2.2.1 Market Power Hypothesis**

Applied in banking the MP hypothesis posits that the performance of bank is influenced by the market structure of the industry. There are two distinct approaches within the MP

theory; the Structure-Conduct-Performance (SCP) and the Relative Market Power hypothesis (RMP) (Tregenna, 2009).

The Structure-Conduct-Performance (SCP) hypothesis of Bain (1951) may be summed up as markets characterised by a structure with relatively few firms and high barriers to entry will conduct pricing aimed at achieving joint profit maximisation through collusion, price leadership, or other tacit pricing arrangements. This type of price conduct should in turn yield profits and prices that are greater than the competitive norm.

According to the SCP approach, 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 deposits 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 SCP, the RMP hypothesis 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).

### **2.2.2 Efficiency Structure**

An alternative hypothesis is the efficiency-structure (ES)hypothesis that emerges from criticism of the SCP hypothesis (Athanasoglou et al, 2006). The efficiency hypothesis postulates that the relationship between market structure and performance of any firm is

defined by the efficiency of the firm. Firms with superior management or production technologies have lower costs and therefore higher profits.

There are also two distinct approaches within the ES; the X-efficiency and Scale-efficiency hypothesis (Athanasoglou et al, 2006). According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou et al, 2006). The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and higher profits through economies of scale. This enables large firms to acquire market shares, which may manifest in higher concentration and then profitability (Athanasoglou et al, 2006).

### **2.2.3 The Portfolio Theory**

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

the management and the unit costs incurred by the bank for producing each component of assets (Nzongang and Atemnkeng, 2006).

### **2.3 Factors Influencing Bank Financial Performance**

In accordance with the above theories and models, many studies have introduced some useful variables in the financial performance function of commercial banks to shed light on key factors that make a difference in bank financial performance. Such studies are not without ambiguity especially with regard to the measurement of the variables and the results reported thereafter. However there is general agreement that bank financial performance is a function of internal and external factors. Koch (1995) observed that the performance differences between banks indicate differences in management philosophy as well as differences in the market served.

Athanasoglou et al, (2006) concurred and argued that financial performance is a function of internal factors that are mainly influenced by a bank's management decisions and policy objectives such as the level of liquidity, provisioning policy, capital adequacy, expense management and bank size, and the external factors related to industrial structural factors such as ownership, market concentration and stock market development and other macroeconomic factors. Though most of the studies on bank financial performance are based on developed countries especially the USA and Europe, a couple of studies focusing on developing countries Flamini et al (2009), Sufian and Chong (2009)) have also used more or less the same variables to study the determinants of bank profitability.

To identify the relevant factors influencing commercial bank financial performance in Kenya, this study concentrated on bank-specific factors based on the CAMEL framework. CAMEL is a widely used framework for evaluating bank performance in relation to ALM. The Central Bank of Kenya also uses the same to evaluate the performance of commercial banks in Kenya.

Several studies (Elyor (2009), Uzhegova (2010)) have used CAMEL to examine factors affecting bank financial performance with relation to ALM with success. CAMEL stands for capital adequacy, asset quality, management efficiency, earnings performance and liquidity. The system was developed by the US Federal Deposit Insurance Corporation (FDIC) for early identification of problems in banks “operations” (Uzhegova, 2010). Though some alternative bank performance evaluation models have been proposed, the CAMEL framework is the most widely used model and it is recommended by Basle Committee on Bank Supervision and IMF (Baral, 2005).

### **2.3.1 Capital Adequacy and its Effect on Financial Performance**

Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience (Kosmidou, 2009). 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). Beckmann (2007) argue that high capital leads to low profits since banks with a high capital ratio are risk-averse, they ignore potential (risky) investment opportunities and, as a result, investors demand a lower return on their capital in exchange for lower risk.

However Gavila et al (2009) argues that, although capital is expensive in terms of expected return, highly capitalized banks face lower cost of bankruptcy, lower need for external funding especially in emerging economies where external borrowing is difficult. Thus well capitalized banks should be profitable than lowly capitalized banks. Gavila (2009) using a sample of 10 Tunisian banks from 1980 to 2000 and a panel linear regression model, reported a strong positive impact of capitalization to ROA. Sufian and Chong (2008) also reported the same results after examining the impact of capital to the performance of banks in Philippines from 1990 to 2005. The banking sector in Kenya provides an interesting case to examine the impact of capital because the minimum statutory requirement has been upgraded to Ksh, 1 billion in 2012. Capital adequacy is divided into Tier I and Tier II. Tier I capital is primary capital and Tier II capital is supplementary capital, but this study will focus on total equity of the banks as opposed to the minimum requirements.

### **2.3.2 Assets Quality and its Effect on Financial Performance**

Credit risk is one of the factors that affect the health of an individual bank. The extent of the credit risk depends on the quality of assets held by an individual bank. The quality of assets held by a bank depends on exposure to specific risks, trends in non-performing

loans, and the health and profitability of bank borrowers (Baral, 2005). Aburime (2008) asserts that the financial performance of a bank depends on its ability to foresee, avoid and monitor risks, possibly to cover losses brought about by risks arisen. Hence, in making decisions on the allocation of resources to asset deals, a bank must take into account the level of risk to the assets.

Poor asset quality and low levels of liquidity are the two major causes of bank failures. Poor asset quality led to many bank failures in Kenya in the early 1980s. During that period 37 banks collapsed following the banking crises of 1986-1989, 1993-1994 and 1998 (Mwega, 2009). According to Waweru and Kalani (2009) many of the financial institutions that collapse in 1986 failed due to non-performing loans (NPLs) and that most of the larger bank-failures, involved extensive insider lending, often to politicians. The CBK measures asset quality by the ratio of net non-performing loans to gross loans. However Koch (1995) argues that a good measure of credit risk or asset quality is the ratio of loan loss reserve to gross loans because it captures the expectation of management with regard to the performance of loans. Hempel et al (1994) observed that banks with high loan growth often assume more risk as credit analysis and review procedures are less rigorous, however returns are high in such loans indicating a risk and return trade-off.

Kosmidou (2008) applied a linear regression model on Greece 23 commercial banks data for 1990 to 2002, using ROA and the ratio of loan loss reserve to gross loans to proxy profitability and asset quality respectively. The results showed a negative significant impact of asset quality to bank profitability. This was in line with the theory that increased exposure to credit risk is normally associated with decreased firm profitability.

Indicating that banks would improve profitability by improving screening and monitoring of credit risk.

### **2.3.3 Liquidity Management and its Effect on Financial Performance**

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 trade-offs that generally exist between return and liquidity risk are demonstrated by observing that a shift from short term securities to long term securities or loans raises a bank's return but also increases its liquidity risks and the inverse is true. Thus a high liquidity ratio indicates a less risky and less profitable bank (Hempel et al, 1994). Thus management is faced with the dilemma of liquidity and profitability. Levine (1998) emphasized the adverse effect of increased liquidity for financial Institutions stating that, "although more liquid assets increase the ability to raise cash on short-notice, they also reduce management's ability to commit credibly to an investment strategy that protects investors" which, finally, can result in reduction of the "firm's capacity to raise external finance" in some cases (Uzhegova, 2010).

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 could banks 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, while Ndung'u and Ngugi (2000) as cited by 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 above foregoing analysis, the given Kenyan banking sector provides an interesting case to assess the effects of liquidity on profitability.

#### **2.3.4 Management Efficiency and its Effect on Financial Performance**

Poor expenses management is the main contributors to poor profitability (Sufian and Chong 2009). In the literature on bank performance, operational expense efficiency is usually used to assess managerial efficiency in banks. Mathuva (2009) observed that the CIR of local banks is high when compared to other countries and thus there is need for local banks to reduce their operational costs to be competitive globally. Beck and Fuchs (2004) examined the various factors that contribute to high interests spread in Kenyan banks. Overheads were found to be one of the most important components of the high interests rate spreads. An analysis of the overheads showed that they were driven by staff wage costs which were comparatively higher than other banks in the SSA countries.

Although the relationship between expenditure and profits appears straightforward implying that higher expenses mean lower profits and the opposite, this may not always be the case. The reason is that higher amounts of expenses may be associated with higher volume of banking activities and therefore higher revenues. In relatively uncompetitive markets where banks enjoy market power, costs are passed on to customers; hence there

would be a positive correlation between overheads costs and profitability (Flamini et al, 2009). Neceur (2003) found a positive and significant impact of overheads costs to profitability indicating that such cost are passed on to depositors and lenders in terms of lower deposits rates/ or higher lending rates.

### **2.3.5 Diversification of Income and its Effect on Financial Performance**

Financial institutions in recent years have increasingly been generating income from “off-balance sheet” business and fee income. Albertazzi and Gambacorta (2006) as cited by Uzhegova (2010) noted that the decline in interest margins, has forced banks to explore alternative sources of revenues, leading to diversification into trading activities, other services and non-traditional financial operations. The concept of revenue diversifications follows the concept of portfolio theory which states that individuals can reduce firm-specific risk by diversifying their portfolios. However there is a long history of debates about the benefits and costs of diversification in banking literature. The proponents of activity diversification or product mix argue that diversification provides a stable and less volatile income, economies of scope and scale, and the ability to leverage managerial efficiency across products (Choi and Kotrozo, 2006).

Chiorazzo et al(2008) noted that as a result of activity diversification, the economies of scale and scope caused through the joint production of financial activities leads to increase in the efficiency of banking organizations. They further argued that product mix reduces total risks because income from non-interest activities is not correlated or at least perfectly correlated with income from fee based activities and as such diversification should stabilize operating income and give rise to a more stable stream of profits (Uzhegova, 2010).

The opposite argument to activity diversification is that it leads to increased agency costs, increased organizational complexity, and the potential for riskier behavior by bank managers. Mihail (2009) mentioned that activity diversification results in more complex organizations which “makes it more difficult for top management to monitor the behavior of the other divisions/branches. They further argued that the benefits of economies of scale/scope exist only to a point. The costs associated with a firm’s increased complexity may overshadow the benefits of diversification. As such, the benefits of diversification and performance would resemble an inverted-U in which there would be an optimal level of diversification beyond which benefits would begin to decline and may ultimately become negative

Using annual bank level data of all Philippines commercial banks Sufian and Chong (2008) found a positive relationship between total non-interest income divided by total assets, a proxy for income diversification and bank profitability. Uzhegova (2010) using a HH index of interest income, commissions, fee income, trading income, non-interest income and other operating income found empirical support of the idea that banks involved in diversification activities expect some benefits. While Kotrozo and Choi 2006, using a similar index found that activity diversification tends to reduce performance compared to banks more focused in their activities.

#### **2.4 Review of Empirical Studies**

Ashok (2009) in his study examined how the financial performance of State Bank Of India (SBI) group, nationalized banks group, private banks group and foreign banks group in India had been affected by the financial deregulation of the economy. The main objective of the empirical study was to assess the financial performance of scheduled

commercial banks through CAMEL analysis. CAMEL stands for capital adequacy, asset quality, management efficiency, earnings performance and liquidity. The objectives of his study were to identify the optimal mix of assets and liabilities for the profitability of banks and to offer suitable suggestions to strengthen the funds position of commercial banks. The study was carried out over a periods of 2000-2001 to 2009-2010. He concluded that banking sector has to take greatest care on the variables which relate to asset liability management and that all the banking groups have to take necessary steps to improve the overall performance of the banking sector.

Mihail (2009) did a study on how asset liability management affect profitability of Banks. The main goal of this paper was to analyze the asset-liability management in banks for the 2004-2011 periods, using a panel of over 30 banks across Europe. The analysis was carried using the canonical correlations where she tested for a linear dependency between two variables, i.e.(the structure of assets and liabilities.) The study concluded that in order to be effective in banks, the management of assets and liabilities must take into consideration the risk level, earnings, liquidity, profit, solvency, the level of loans and deposits.

Haslem et al (1999) used canonical analysis and the interpretive framework of asset/liability management in order to identify and interpret the foreign and domestic balance sheet strategies of large U.S. banks in the context of the “crisis in lending to LDCs.” In their study it was revealed that the least profitable very large banks have the largest proportion of foreign loans, but they focus on asset/liability matching strategies.

Gyekyi (2011) used the goal programming method to study the effects of asset liability management on profitability of National Investment Bank in the New Juabeng Municipality in Ghana. His the major findings of the study were; the value of assets and liabilities of the bank had a direct effect on the profitability of the bank, decrease in assets value leads to increase in banking profitability. Increased or decreased in liability had direct effect on company's profitability, inflation rate has the direct effect on profitability, Increase in inflation leads to increase in profitability and decreased in inflation, decreases the profit margin of the firm, Bank of Ghana base rate affects the strategic decisions of the banks, changes in the base rate have direct effect on the banking profitability and Bank of Ghana policies normally affect the decisions of the bankers.

Analyzing the behaviour of U.S. commercial banks on the 1990-2005 periods, DeYoung and Yom (2008) in a study in US commercial banks observed the evolution of correlation degree between assets versus liabilities. They concluded that the degree of correlation is higher in large banks, with the observation that over time it improves for the small and medium-sized banks also

Kamau (2009) did a study on the commercial banks in Kenya and set to establish the how capital adequacy effects profitability in the banking sector. He found out that the capital structure of banks is highly regulated. This is because capital played 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. To this extent, he concluded that banks with enough capital were more profitable than banks which were struggling to maintain the statutory capital adequacy requirement, Odhiambo (2006) did a survey of liability management

practices in commercial banks in Kenya and found that regular and systematic appraisal of asset liability management policies was a common practice among most banks. Most banks also indicated that their asset liability management systems were governed by guidelines set by the management board which is a cross functional outfit covering all the major functions in the bank this showed that asset liability management is a highly strategic issue in most banks, regardless of their size, extensively utilized most of the conventional hedging instruments.

Muhammed (2007) did a study of liquidity management approaches and their effect on profitability of commercial banks in Kenya. The researcher findings reveal that the most popular theory with bankers is commercial loan theory; the next is asset liability management theory. The evidence of use of shiftability and anticipated income theory is weak. However, there was one bank that employed a hybrid strategy i.e. anticipated and commercial loan theory.

## **2.5 Summary of Literature Review**

From the literature review a research gap was identified in the empirical studies. The importance of this research study was attempting to answer the research question; “What is the effect of asset liability management on the financial performance of commercial banks in Kenya.” The landscape of the financial services industry has become increasingly competitive, coupled with rising costs of intermediation. Since ALM has a direct effect on the financial performance of banks, it is prudent to have an effective AML process within banks that closely monitor and equalize both the assets and liabilities management. The studies highlighted above tried to link how asset liability management

using some variables affected profitability. This study on the other hand used more variables which are used for banks financial performance in totality.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter of the research outlined the overall research methodology that was used in the study. This included the research design, population, data collection, data validity and reliability and data analysis.

### **3.2 Research Design**

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. A descriptive design was used in the study. Descriptive research design is a type of research method that is used when a researcher wants to get information on the current status of a person or an object. It is used to describe what is in existence in respect to conditions or variables that are found in a given situation. In this research, descriptive research was used to determine the statistical association between the relationship of ALM variables and financial performance of commercial banks.

### **3.3 Population**

The population of a research applies to the collection of all possible individuals, objects or measurements of interest (Mason et al, 1999). The identification of the population of the research question helps in narrowing down to the specific objective that is the subject matter of the research. For the purpose of this research, the study population comprised all the 43 commercial banks in Kenya as at 31/12/2013 .Therefore, a census was used. The justification of this population is because this is a regulatory requirement by banks and bank institutions are easily accessible.

### **3.4 Data Collection**

The study employed secondary data. The data was collected from the Central Bank of Kenya, published financial statement of banks and Banking Survey from 2004-2013. The banking Survey is an annual publication that publishes annual financial statement of all banks in Kenya covering a period 10 years, while the Central Bank of Kenya publishes annually. The study covered a ten year period from the years 2004 to 2013.

### **3.5 Data Validity and Reliability**

To ensure validity and reliability of the data collected, only published data in the form of financial statements which is a requirement by law was used. The board of directors of each bank before publishing of any information have to attest to the validity and reliability and ensure that the statements show a true and fair view of the banks financial position. The CBK supervisory reports were also used which are published by the regulator itself therefore ensuring correct data.

### **3.6 Data Analysis**

The data collected was analysed using the computer software known as Statistical Package for Service Solution (SPSS) version 20.0. Descriptive, correlations and regression analysis was applied to study and compare the effect of independent variables on the dependent variable. In order to get a picture of the performance of the banks, the researcher employed ROE which is a measure of profitability. ROE reflects the ability of a bank's management to generate profits from the bank's assets and was calculated as net profit after tax divided by stakeholders' equity.

Financial performance was the dependent variable while asset liability management components were the independent variables of the research study. The researcher used a two tailed t-test since the sample size was greater than 30 with a 5% statistic test of significance. The researcher computed correlation coefficient (r), coefficient of determination (r<sup>2</sup>) and analysis of variance (ANOVA) using the regression model below. The study hypothesis that asset liability management has a positive relationship to financial performance of banks.

$$\text{Financial Performance}_{ROE} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Where;

Y denotes the dependent variable (Financial Performance) measured as Return on Equity

$\alpha$  is the value of the intercept.

$\beta$  is the coefficient of the explanatory X variable.

e is the error term assumed to have zero mean and independent across time period.

$X_1$ (Capital Adequacy)	Ratio of total equity to total risk weighted assets
$X_2$ (Asset Quality)	Ratio of Non-performing loans to total loans
$X_3$ (Liquidity)	Ratio of Term liquid assets to total liability deposits
$X_4$ (Operational Efficiency)	Ratio of operating cost to net operating income
$X_5$ (Income Diversification)	Ratio of non-interest income to total income

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents the analysis of study findings of the investigation on the effect of asset liability management on financial performance of commercial banks between the years 2004 to 2013. In the study variables which were included are; capital adequacy, asset quality, liquidity, operational efficiency, income diversification and return on equity as the measure of financial performance. This chapter analyses the variables involved in the study and estimates of the model presented in the previous chapter.

### **4.2 Research Findings**

This section of the study aimed at establishing the general trend of financial performance and the five factors under the CAMEL approach in the Kenyan banking sector from 2004 to 2013.

#### **4.2.1 Descriptive Analysis**

Table 4.10 reports the mean scores of ROE from 2004 to 2013. The mean score of ROE for the whole sector was 22.86% in 2004 and rose to 29.20% in 2013 showing an increase of 27.73%.

The financial performance of the sector increased from 2004 to 2013. In the banking industry, ROE of more than 20.00% indicates good performance (CBK, 2013). Therefore, this means the performance of the sector was comparable to international standards. This is very important for the development of the country as banks play a very important role of financial intermediation.

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The mean value of asset quality for the sector from 2004 to 2013 was 12.37%. The mean score of Capital Adequacy for the sector was 19.65%. The average mean value of liquidity was 40.93%. Operational Efficiency mean was 69.65% and lastly the mean score of Income Diversification, which measures the ability of banks to generate revenue from different sources, was 30.26.

Table 4.11 Aggregate Mean Scores of ALM factors between 2004 and 2013

	Mean	Std. Deviation	Maximum	Minimum
Return on Equity	26.54	3.54625	30.89	22.86
Asset Quality	12.37	9.18036	29.00	4.40
Capital Adequacy	19.65	2.42544	23.00	16.00
Liquidity	40.93	2.79486	44.80	37.00
Operational Efficiency	69.65	3.91235	75.76	64.90
Income Diversification	30.26	6.07569	41.34	21.02

Source: Research Findings 2014

The capital adequacy results suggest that about 19% of the total assets of the bank sector were financed by shareholders' funds while the remaining 81% was financed by deposit liabilities. The high leverage is not surprising because the business of banking is to mobilize more deposits from customers. The CBK stipulates that banks must keep core capital of not less than 8% of total deposit. This implies that Kenyan banks on average operated above minimum statutory levels.

The mean ratio of assets quality of 12.37% implies that stringent credit risk management practices are adopted before lending as it has substantially decreased from a high of 29.50% in 2004 to a low of about 5.00% in 2013. The mean score of liquidity shows that the sector was very liquid, two times more than the minimum statutory liquidity ratio of 20% set by CBK. The higher liquidity ratio indicates that banks in the country prefer to

invest in safe, short-term investments than credit loans. The average ratio of operational efficiency was 69.65%, an indicator that overheads are high in the local banking sector. Lastly the income diversification index indicates that the revenue income of local banks was well diversified as the average was 30.26%.

#### 4.2.2 Correlation Analysis of Asset Liability Management and Financial Performance of Commercial Banks

Table 4.12 Correlation Table on ALM factors

		Return on Equity	Asset Quality	Capital Adequacy	Liquidity	Operational Efficiency	Income Diversification
Pearson Correlation	Return on Equity	1.000					
	Asset Quality	-.370	1.000				
	Capital Adequacy	.246	-.920	1.000			
	Liquidity	-.100	.487	-.363	1.000		
	Operational Efficiency	-.615	.863	-.819	.171	1.000	
	Income Diversification	.392	-.131	.055	-.181	-.059	1.000

Source: Research Findings 2014

Results on table 4.11 shows the correlations between asset liability management factors and financial performance of commercial banks, while holding the correlation coefficient (r) value at between plus and minus one (-1.00 and +1.0). The study used the significance level of alpha = .05 (95%), Degrees of freedom (df) of 5, and two-tailed test.

### 4.2.3 Regression of Asset Liability Management and Financial Performance

The  $R^2$  is a measure of the goodness of fit of the asset liability management factors variables in explaining the variations in bank financial performance. Based on the study, correlation coefficient ( $r$ ) was .869 and the coefficient of determination ( $r^2$ ) was .756 indicating that 75% of the financial performance of commercial banks can be predicted by the CAMEL factors identified in the study. Since the correlation of .756 is positive it can be concluded that the correlation is statistically significant, hence there is a positive relationship between asset liability management and financial performance of commercial banks.

Table 4.13 ALM Model Summary

R	R Square	Adjusted R	df	Sig
.869 <sup>a</sup>	0.756	0.451	5	0.2

Source: Research Findings 2014

Table 4.14 ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	36,792.95	5	7,358.59	2.478	.200 <sup>b</sup>
Residual	11,876.60	424	47.6790		
Total	48,669.55	429			

a. Dependent Variable: Return on Equity

b. Predictors: (Constant), Income Diversification, Capital Adequacy, Liquidity, Operational Efficiency, Asset Quality

Source: Research Findings 2014

Table 4.15 Coefficient and t-statistic Table

Model	Unstandardized Coefficients		Standardized Coefficients	t-statistic and p-values	Correlations	
	B	Std. Error	Beta		Zero-order	Part
(Constant)	147.347	50.329		1.93(2.928)		
Asset Quality	.259	.361	.670	0.03(1.717)	-.370	.177
Capital Adequacy	-.809	.959	-.553	0.02(-1.844)	.246	-.208
Liquidity	.370	.446	-.291	0.09(1.830)	.100	.205
Operational Efficiency	-1.427	.537	-1.575	0.60(3.656)	-.615	-.656
Income Diversification	.213	.148	.364	0.03(2.433)	.392	.3540

Source: Research Findings 2014

The findings of the analysis is based on the significance level (alpha) of 0.05 (95%), degrees of freedom (df) of 5, and two-tailed test indicated: Asset Quality ( $R^2=.043$ ;  $t= -1.844$ ); capital adequacy ( $R^2=.031$ ;  $t=1.717$ ); liquidity ( $R^2=.042$ ;  $t=1.830$ ); operational efficiency ( $R^2=.430$ ;  $t= -3.656$ ) and income diversification ( $R^2=.125$ ;  $t=2.433$ ).

The result show a positive coefficient of determination ( $R^2$ ) indicating that: return on equity is influenced by capital adequacy, asset quality, liquidity, operational efficiency and income diversification. In addition, the computed t-values: capital adequacy ( $t=1.717$ ); asset quality ( $t=-1.844$ ); liquidity ( $t=1.830$ ); operational efficiency ( $t=-3.656$ ); income diversification ( $t=2.433$ ) are higher than the significance threshold of 1.96 (0.05). This then indicate that there is a significant relationship between financial performance

and capital adequacy, asset quality, liquidity, operational efficiency and income diversification.

#### **4.2.4 Discussion of Research Findings**

The results indicate that capital adequacy is positively related to return on equity (ROE), the financial performance measure. The coefficient of determination is 0.031 which indicates that the relationship may not be very strong. These results provide reasonable evidence to the consistent view that, the higher the capital levels, the better the financial performance. Generally a bank that depends more on leverage will experience more volatile earnings and this also affects the credit creation and liquidity function of the bank. The beta of capital adequacy is 0.259 with a t-statistic of 1.717. The positive coefficients mean a 1% increase in capital leads to a .259% increase in financial performance and the high t-statistic value indicates that the impact is statistically significant at 5 % test level.

There is a negative relationship between poor asset quality and financial performance as the coefficient of correlation is -0.208 and a correlation of determination of 0.043. This means banks which fail to monitor their credit loans tend to be less profitable than those which pay particular attention to assets quality. This is in line with the theory that increased exposure to credit risk is normally associated with decreased bank profitability (Kosmidou, 2008). Asset quality has a negative beta of -0.809 with a t-statistic of -1.844. This means poor asset quality leads to lower financial performance to banks. This negative impact is significant at 5% test level.

The results indicate that liquidity is positively related to return on equity (ROE), the financial performance measure. The coefficient of correlation is 0.205 which indicates that the relationship may not be very strong. These results provide reasonable evidence to the consistent view that, the higher the liquidity, the better the financial performance. This supports the claim that banks which are illiquid are forced to borrow from the market expensive funds or to prematurely liquidate their long term investments at unfavourable bargains to cover immediate cash needs thus reducing financial performance.

Liquidity has a positive beta of 0.370 with a t-statistic of 1.830. This means high liquidity levels leads to an increase in financial performance to banks. This positive impact is significant at 5% test level. This means an increase in liquidity by 1% leads to an increase in financial performance by 0.370%. This impact is significant at least, at 5% test level.

The coefficient of correlation of -0.656, suggests a strong negative correlation between financial performance and Operational Efficiency. Operational efficiency has a negative beta of -1.427 with a t-statistic of -3.656. This means operational inefficiencies leads to lower financial performance to banks. This negative impact is significant at 5% test level. This means increase in operational inefficiency by 1% leads to a decrease in financial performance by 3.656%. This impact is significant at least, at 5% test level.

Revenue diversification in the sector is average. The relationship between financial performance and diversification of income and the coefficient of correlation is 0.354 indicating that the more banks generate their revenue from different activities, the more their financial performance becomes better. The impact of income diversification is 0.213 with a t-statistic of 2.433. This means income diversification or product mix leads

to increased financial performance. This impact is statistically significant at least, at 5% test level.

Clearly the results indicated that all the CAMEL factors had a significant impact on the financial performance of banks during the period understudy at least, at 5% test level.

This means that asset liability management affect the financial performance of commercial banks significantly.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter introduces the summary of findings; conclusion and recommendations. It also highlights limitations of the study and finally gives suggestions for future research studies.

### **5.2 Summary of Findings**

Multiple regression analysis has shown that asset liability management is not only related to the financial performance of banks, but they also influence the financial performance of commercial banks in Kenya significantly with a correlation of 0.756. The analysis revealed that operational efficiency is the most robust and important factor influencing financial performance in the sector. The results showed that a 1% increase in operational inefficiency could result in 3.656% decrease in financial performance. This was statistically significant at 5% (3.656) confidence level. Flamini et al (2009) and Necer (2003) also found the same results for SSA and Tunisian banks respectively. The descriptive analysis showed that total expenses are as high as 69.65% of total income. It is therefore obvious that a lot needs to be done to expenses in the banking sector to improve financial performance. The strong negative impact of operational efficiency indicates that banks are not able to pass all their operating cost to customers which may be an indicator of the competitiveness.

The analysis revealed that capital adequacy is also an important factor influencing financial performance in banks. The results showed that a 1% increase in capital adequacy could result in 0.259% increase in financial performance. This was statistically

significant at 5% confidence level with a t-statistic of 1.717. This result means banks should focus on improving their capital levels in order to improve their financial performance. This will enable the banks, not only to be cushioned against exogenous shocks, but also to take full advantage of business opportunities as they come and increase their financial performance in the process.

Asset quality showed a negative effect of -0.809, statistically significant 5% level, meaning a 1% increase in the asset quality ratio (indicating deteriorating asset quality), could lead to 0.809 % reduction in financial performance. These results are consistent with previous findings by Kosmidou (2008) and Flemini et al (2009). Thus banks need to improve their processes of screening credit customers and monitoring of credit risk .This is an important indicator because banks have had serious problem with non-performing loans in the past which led to collapse of many banks.

Another important finding after assets quality is income diversification. This variable had a positive effect of 0.213 with a t-statistic of 2.433 and statistically significant at 5% confidence level. Investigating the relative importance of asset liability management on the financial performance of banks and also found that income diversification leads to increased financial performance. This means banks that diversify their source of revenue between, interest income, fees and commissions, foreign exchange activities and other, are more profitable than those that largely depend on a single source of income.

Finally the effect of liquidity was 0.370 and a t-statistic of 1.830 statistically significant at 5% significance level, indicating that liquidity positively influences profitability. The

implication of this finding is that investing in short-term, less risky securities like government bonds leads to increased profitability.

### **5.3 Conclusion**

The main objective of this study was to determine and evaluate the effects of asset liability management on the financial performance of commercial banks in Kenya within the CAMEL framework. Data from 2004 to 2013 of 43 commercial banks was analyzed using multiple linear regressions method. From the discussion of the findings above, it was concluded that the asset liability management is the most significant factor influencing the financial performance of commercial banks in Kenya. The analysis showed that all the ALM had a statistically significant impact on financial performance.

Operational efficiency being the most robust and important factor influencing financial performance. A slight decrease in operational efficiency could lead to very high reduction in profits. This is unproportional as compared to the other factors. Income diversification leads to increased financial performance. Capital adequacy was also a significant factor influencing performance. However, not as significant as operational inefficiencies in terms of the impact on financial performance.

Banks which had diversified their income sources tend to perform better than those which had limited or fewer income streams in their portfolios. However, in terms of overall impact on financial performance of banks in the industry as a whole, this factor was not as strong as compared to operational inefficiency and capital adequacy. Banks which were more liquid had better financial performance as compared to less liquid banks. Although all banks in the industry had maintained the minimum level of liquidity, some were barely beyond the threshold and so there was negative impact on their financial performance

#### **5.4 Recommendations**

On the basis of the findings of the study the researcher recommends that superior financial performance in commercial banks can be achieved by; improving their capital bases, reducing operational costs, improving assets quality by reducing the rate of non-performing loans, employing revenue diversification strategies as opposed to focused strategies and keep the right amount of liquid assets. Thus it can be concluded that financial performance in the Kenyan banking sector is largely driven by asset liability management

In terms of operational efficiency, it is obvious that a lot needs to be done to expenses in the banking sector to improve financial performance. The strong negative impact of operational efficiency indicates that banks are not able to pass all their operating cost to customers which may be an indicator of the competitiveness. More ways of reducing inefficiencies should be adopted but not at the expense of service delivery.

For asset quality banks need to improve their processes of screening credit customers and monitoring of credit risk .This is an important indicator because banks have had serious problem with non-performing loans in the past which led to collapse of many banks. On the other hand banks should focus on improving their capital levels in order to improve their financial performance. This will enable the banks, not only to be cushioned against exogenous shocks, but also to take full advantage of business opportunities as they come and increase their financial performance in the process. Income diversification can be

achieved by increasing interest income, fees and commissions and foreign exchange activities

#### **5.4 Limitations of the Study**

Due to finance and time constraints, the research was limited to only commercial banks in Kenya. Therefore, to generalize the results for a larger group, the study should have involved a larger area of study, may be in other sectors of the economy or in other areas of the country. There was the challenge of accessing past bank record due to poor record keeping hence there was scant information that could be accessed in terms of published financial statements, however the researcher used other relevant documentation to collect the required information despite the fact that it took longer than anticipated. The research was also difficult to carry as the researcher had work and family commitments to attend to. This proved to be very destructing during the course of the research.

#### **5.5 Suggestions for Future Research**

The study sought to investigate factors that influence financial performance of commercial banks in Kenya. However the variables used in the study were not exhaustive. Future research could incorporate macroeconomic variables such as GDP, inflation and exchange rates. Also a study on the factors influencing the liquidity position of commercial bank in the country could add great value to the performance of local banks and academic literature.

The scope of this research was to discuss and provide the CAMEL system in evaluating the bank's performance in Kenya. However, this framework's process and objectives may vary among countries, among companies, and among banks. A all Kenyan banks were

selected to describe how the CAMEL. Other researchers may want to go further on whether the CAMEL model is capable to be used as a banking supervisory tool in Kenya or not. Therefore, in the further research one might want to consider this research as a reference to expand the scope and improve results of the research.

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## APPENDIX I

### List of Banks in Kenya

1	ABC Bank (Kenya)
2	Bank of Africa
3	Bank of India
4	Bank of Baroda
5	Barclays Bank
6	CFCStanbic Bank
7	Chase Bank (Kenya)
8	Charterhouse Bank Ltd
9	Citibank N.A.
10	Commercial Bank of Africa
11	Consolidated Bank of Kenya
12	Cooperative Bank of Kenya
13	Credit Bank
14	Development Bank of Kenya
15	Diamond Trust Bank
16	Dubai Bank Kenya
17	Eco Bank
18	Equatorial Commercial Bank
19	Equity Bank
20	Family Bank
21	Fidelity Bank
22	Fina Bank (Kenya)
23	First Community Bank
24	Giro Commercial Bank
25	Guardian Bank
26	Gulf African Bank
27	Habib Bank AG Zurich
28	Habib Bank
29	Imperial Bank Kenya
30	Investment & Mortgages Bank
31	Jamii Bora Bank
32	Kenya Commercial Bank
33	K-Rep Bank
34	Middle East Bank Kenya
35	National Bank of Kenya
36	National Industrial Credit Bank
37	Oriental Commercial Bank
38	Paramount Universal Bank
39	Prime Bank (Kenya)
40	Standard Chartered Bank
41	Trans National Bank Kenya
42	United Bank for Africa
43	Victoria Commercial Bank

## APPENDIX II

### Average Return on Equity 2004-2013

No.	Name of the Bank	Return on Equity (ROE) Average 2004-2013
1	Kenya Commercial Bank Ltd	29.80%
2	Equity Bank Ltd	37.60%
3	Cooperative Bank of Kenya Ltd	33.10%
4	Barclays Bank of Kenya Ltd	44.00%
5	Standard Chartered Bank (K) Ltd.	37.60%
6	CFC Stanbic Bank Ltd	26.00%
7	Citibank N.A.	41.70%
8	NIC Bank Ltd	28.60%
9	Diamond Trust Bank Ltd	31.40%
10	I&M Bank Ltd	28.50%
11	Commercial Bank of Africa Ltd	34.30%
12	National Bank of Kenya Ltd	11.00%
13	Bank of Baroda Ltd	28.90%
14	Chase Bank Ltd	25.80%
15	Family Bank Ltd	17.40%
16	Ecobank Kenya Ltd	-76.70%
17	Bank of India	14.90%
18	Prime Bank Ltd	27.80%
19	Imperial Bank Ltd	42.00%
20	Bank of Africa (K) Ltd	12.70%
21	Victoria Commercial Bank Ltd	24.10%
22	Trans-National Bank Ltd	17.60%
23	Giro Commercial Bank Ltd	11.70%
24	African Banking Corporation Ltd	26.40%
25	Fina Bank Ltd	13.90%
26	Gulf African Bank (K) Ltd	23.90%
27	Habib AG Zurich	26.90%
28	K-Rep Bank Ltd	20.10%
29	Development Bank of Kenya Ltd	6.30%
30	Jamii Bora Bank Ltd	2.50%
31	Habib Bank Ltd	33.80%
32	Guardian Commercial Bank Ltd	18.30%
33	UBA Bank (K) Ltd	-32.60%
34	Credit Bank Ltd	6.90%
35	Consolidated Bank of Kenya Ltd	11.20%
36	Oriental Commercial Bank	8.20%
37	Fidelity Commercial Bank Ltd	8.60%
38	Paramount Universal Bank Ltd	7.90%
39	Middle East Bank (K) Ltd	4.20%
40	First Community Bank Ltd	27.30%
41	Dubai Bank Ltd	-3.30%
42	Equatorial Commercial Bank Ltd	-90.80%
43	Charterhouse Bank Ltd	0.00%

### APPENDIX III

#### Yearly Aggregate Mean Scores of ALM factors

YEAR	ROE	Asset Quality (%)	Capital Adequacy (%)	Liquidity (%)	Operational Efficiency (%)	Income Diversification (%)
2004	22.86	29.00	16.60	42.40	75.76	31.45
2005	23.97	25.00	16.90	42.30	75.13	21.02
2006	28.31	21.30	16.00	44.80	71.52	32.46
2007	28.04	10.60	19.00	41.00	69.10	32.58
2008	26.50	9.23	20.00	37.00	68.57	32.91
2009	24.90	8.00	21.00	39.80	71.45	41.34
2010	27.94	6.30	22.00	44.50	65.30	24.09
2010	30.89	4.40	21.00	37.00	69.70	22.97
2012	30.00	4.70	23.00	41.90	65.10	29.79
2013	29.20	5.20	21.00	38.60	64.90	34.00

## APPENDIX IV

Table 4.15 Secondary Data Correlation Model

Secondary Data

Correlation Model

Model	R	R <sup>2</sup>	df	t	sig
Asset Quality	0.208	0.043	5	0.446	0.208
Capital Adequacy	0.177	0.031	5	0.513	0.177
Liquidity	0.205	0.042	5	0.453	0.205
Operational Efficiency	0.656	0.43	5	0.057	0.656
Income Diversification	0.354	0.125	5	0.225	0.354

Source: Research Findings 2014

