

**EFFECTS OF LIQUIDITY MANAGEMENT ON THE FINANCIAL PERFORMANCE  
OF THE BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE**

**BY**

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## DECLARATION

I attest that this is my original research project submitted to the University of Nairobi only and no other learning institution locally or globally.

Signed  \_\_\_\_\_

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This project has been submitted for examination with my approval as the university supervisor

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## **DEDICATION**

I humbly dedicate this work to my family. To my adorable, lovely wife Doris for the support throughout the study and courage she instilled in me. To my little angels Dalya and Declan for their presence in my life which gave a reason for hardwork.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

<b>ABSA</b>	Amalgamated Banks of South Africa
<b>CBK</b>	Central Bank of Kenya
<b>CCC</b>	Cash Conversion Cycle
<b>IRA</b>	Insurance Regulatory Authority
<b>ISE</b>	Istanbul Stock Exchange
<b>KBA</b>	Kenya Banking Association
<b>KCB</b>	Kenya Commercial Bank
<b>MFI</b>	Micro finance Institution
<b>NPV</b>	Net Present Value
<b>ROA</b>	Return On Assets
<b>ROE</b>	Return On Equity
<b>SACCO</b>	Savings and Credit Cooperative Organization
<b>SMEs</b>	Small and Medium Enterprise
<b>SPSS</b>	Statistical Package for the Social Sciences

## ABSTRACT

For the past few years, the Kenya banking sector has seen some banks collapse despite posting impressive performances. All pointers have always indicated that they had been experiencing liquidity issues. The objective of this study was to establish the effect of liquidity management on the financial performance of the banks listed at the NSE. A descriptive research design was used in this study. The study targeted all the eleven commercial banks listed in Kenya between 2016 and 2020. Secondary data from commercial banks' annual reports was collected using data collection sheet. Financial ratios were calculated and used for analysis. Cross-sectional and time-series data was used for the study. STATA 13 generated descriptive and inferential analytical statistics. From the descriptive statistics, the listed commercial banks showed an average ROA of 2.1547. Liquidity management as measured by liquidity ratio averaged at 43.9%. Capital adequacy as measured by total capital to total risk weighted assets ratio showed a mean of 17.22%. Core capital to total deposit liabilities had a mean of 17.342% for the period between 2016 and 2020. From the regression analysis, the fixed effect model showed an R squared (within) of 0.3473. The findings exhibited that liquidity management had an adverse significant effect on ROA. On the flip side, capital adequacy and core capital to total deposit liabilities showed a positive but insignificant effect on ROA. This study recommends that listed banks should balance between the levels of liquidity to hold and pursuit opportunities that results in profitability in a manner that does not jeopardize the operations of the banks. The banks should also operate within the minimum statutory required ratios as per the CBK guidelines on liquidity ratios, capital adequacy ratio as well as the core capital to total deposit ratios. From the ratios computed the entire sector on average operated within the required limits.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Liquidity management impacts on profitability of most banking institutions is one of the most controversial topics in the recent past. Some studies have been advanced by different authors to examine this. Acter and Mahmud (2014) asserts that it is paramount that liquidity and profitability are given critical focus as they determine the financial health of the company. Kaur and Skilky (2013) alluded that though profitability ratios would demonstrate a company's overall efficiency and performance, the company would certainly require liquidity to continue their business. The performance of a bank is inversely related with liquidity management (Bassey, 2015). There is danger when certain financial institutions choose to retain less cash in their accounts to gain a higher return on assets at an expense of not caring about their liquidity position.

The study was based on free cashflow model developed by Eisenhardt (1989), cash conversion cycle theory by Gitman (1974) and the liquidity preference theory by John Maynard Keynes (2011). The free cash flow states that the optimal cash holding level causes agency issues that might rise between shareholder and manager concerns. Cash conversion cycle theory states that the larger cash conversion cycle improves profitability while liquidity preference theory states that the need for money is for organizations to remain liquid but not for debt.

Poor liquidity management has led to financial crisis in the Kenyan banking sector (Sahudi, Abdullah & Tukiman, 2012). This was evidenced by the collapse of three banks in the Kenyan economy in the last five years. The CBK in a statement before the closure of Dubai Bank stated that the bank had been experiencing serious liquidity and capital deficiencies which raised the Central Bank of Kenya red flag that the entity was unable to meet its liability needs when

required. Three months after the collapse of Dubai Bank it was followed by Imperial Bank limited. A similar liquidity issue had driven the collapse of Chase Bank limited. The Central Bank of Kenya has been very strict to the banks on ensuring liquidity ratios as well as capital adequacy ratios are not breached. Liquidity and capital adequacy issues has therefore led to several mergers we have seen for the past three years in the Kenyan banking sector.

By understanding the role of Liquidity management in profitability, companies can reduce risk and increase overall performance. (Lamberson, 2015). To a great degree, the profitability of firms depends on several factors like sound cash management practices (Attom, 2014). The significance of liquidity management is to ascertain positive cash flow for smooth operations of the business (Abioro, 2013). The major reason of low profits is poor monetary strategies or managerial policies. The performance of any institution is measured by how well or poorly it achieves its goals. Liquidity management presents tremendous cash opportunities that can be released in a very short period of time while being sustainable. Companies that fail to succeed in their cash strategies or management policies frequently face lower profitability (Loneoux & Fazeeria, 2014).

### **1.1.1 Liquidity Management**

Liquidity management has been explained by different authors. (Shafique, Faheem and Abdullah, 2012) asserts that liquidity is the ability of the entity to convert assets into cash and this is termed as marketability. (Amengor, 2010) defines liquidity in the context of commercial banks as the capacity to meet its obligations by the contractor when it falls due and this includes accrued liabilities, deposits, withdrawals, investment commitments as well lending. J.P Morgan Chase (2000) states that liquidity risks stem from the inability to sell assets with ease without incurring huge losses. From the review of the different authors work, it is evident that liquidity management is critical factor in business operations. To exist the entity ought to have

requisite degree of liquidity. It's clear that it should neither be excessive nor inadequate. A balance of the two should be maintained for efficient operations.

Liquidity management entails the collection and management of the organization's cash flows to maximize the availability of cash. It encompasses procedures and strategies endorsed by the administration of an entity to assist in achieving the management policies. It also aids in the regulations and laws of cash, helps detect and prevent errors and fraud, and promotes efficient and orderly operations (Horme, 2015). Pandey (2018) notes that liquidity management assists with the management of cash flow into and out of the firm, cash flow within the firm, and cash balances lent by the firm at a time of financing deficit surplus cash.

Liquidity management is essential to a business's profitability. Recognizing the role of liquidity management in profitability allows companies to reduce their risk and improve their overall performance (Lamberson, 2015). Sound cash management entails accurate cash flow forecasts, collecting and banking revenue on time, and better timing of expenditure decisions. These assist in reducing the cost of any borrowing that is imperative and promote surplus funds' investment to attain the best return overall (Attom, 2014). The methods of liquidity management and the degree of sophistication in business processes will vary from entity to entity and will be affected by the size of the entity, geographical location, and the nature of the business operations (Ondiek et al., 2013).

### **1.1.2 Profitability**

Profitability, according to Home (2016), is defined as the act of investing idle liquid resources in an investment plan or portfolio, with the amount invested generating returns to the business in the form of interest. The difference between revenue earned and costs expended during accounting periods is also known as profitability (Westerfied, 2000). Profitability is defined by Patel (2004) as the difference between the income generated by enterprises from the sale of

services or products and the expenditure incurred during the same accounting period. He went on to say that the company should strive to reduce operating costs while growing sales revenues.

According to Tariq et al. (2014), profitability is a fundamental factor for smooth operations and significantly affects economic development in today's competitive environment. Profitability is also necessary for banks to continue their day-to-day operations and for shareholders to receive fair returns on their investments (Ponce, 2011). For many businesses, it is one of the most important components of financial reporting (Farah & Nina, 2016). Financial performance is crucial to the company's executive team, as well as shareholders and other parties interested or linked with the organization. This is due to the fact that profitability provides a clear indication of a company's performance.

According to Pandey (2012), corporate firms can quickly determine their profitability level by utilizing the profitability ratios. He further asserts that this determination can be determined after the preparation of the financial reports. Pandey goes on to say that net profit is calculated by removing operating expenses such as rent, taxes, electricity, gross profit, and interest from gross profit. As a result, the net profit margin ratio is arrived at by dividing the taxes before profit by the total sales. Return on assets is another measure of profitability since it indicates the profitability of the investments of the business after the reduction of all the taxes and expenses (Horne, 2015). The return on assets is a frequent metric for calculating managerial profit (Ross et al., 2015). It determines how much money the company makes after taxes for every dollar invested in its assets.

### **1.1.3 Liquidity Management and Profitability**

According to Myers (2003), the liquidity management procedures used by a corporation have an impact on its level of profitability. Subsequently of economies of scale, an organization's growth results in benefits such as monopoly or bargaining strength (Külter & Demirgüne, 2017). A favorable link between profitability and growth is expected in this instance.

Pandey (2015) discovered that the firm may make acceptable profits yet suffer from a liquidity shortfall as a result of its expanding needs. As a result, managers must seek for ways to improve cash flow simultaneously reducing cash outflows by lowering operational costs, and excess funds can then be invested. According to Saleemi (2012), businesses with inadequate cash management are unable to obtain desired profits, and as a result, these businesses will fail to meet their primary goal. It becomes easier to estimate earnings earned by these businesses if cash management is properly handled. The results of the studies on the link between cash management and profitability were contradictory. Cash management and profitability have a positive relationship, according to Külter and Demirgüne (2017). Eljelly (2014) found that cash mismanagement affects profitability negatively.

### **1.1.4 Banks Listed at the NSE**

Kenyan financial institutions engaged in commercial activities are supervised and regulated through the Banking Act, the Central Bank of Kenya Act (CBK), and the Companies Act, coupled with the numerous cost-effective regulations that the bank issued. In 1995, the Kenyan exchange control was lifted and the banking sector was introduced, leading to the liberalization of financial institutions to a great extent. The Central Bank under the finance ministry of the Kenyan government formulates and implements our fiscal policy and nurturing the solvency, the healthy running, and liquidness of the Kenyan financial bodies. Kenya had 41 commercial banks, and one mortgage finance firm by the year 2020. Forty were privately owned, with the

Kenyan government owning a majority stake in two of them (Central Bank of Kenya, 2020). Eleven banks had been listed at the NSE by the end of 2020.

The CBK supervision report of (2020), reports that the commercial banks sector recorded a performance decline in 2020 with pretax profit dropping by 29.5% to Kenya Shillings 112.2 billion for the period ended December 2020 from Kenya Shillings one hundred and fifty-nine point one billion in the previous year. The decrease in financial performance is because of high expenditure (Ksh.77.47 billion) and low income (Ksh.30.54 billion). The financial institutions sector average liquidity ratio for the year ended December 2020 was 54.5% while in December the previous year it stood at against 49.7%. The rise in the ratio is because of the increase in the total liquid disposables against short-term obligations and debts. Total liquid assets rose by 23.7% whereas total short-term liabilities increased by 13.2%. The financial institutions' liquidity ratio of 54.5 as at December 2020 was beyond the required ratio of 20%. The study sought to determine with the two trends indicated by liquidity and performance have any relationship.

## **1.2 Research Problem**

Commercial banks acts as intermediaries between depositors and investors. They have critical implications for economic growth of countries. Poor banking performance can lead to the deterioration of the economic performance of the country. The mediation responsibility of the commercial banks come with risks and problems even as they seek to increase its expected profits on investments. It therefore requires optimum utilization of funds for the banks to meet the ever-growing demands from different stakeholders. The problem arises when the bank wants to grow and is unable to meets its liquidity needs. For the past few years, the Kenya banking sector has seen some banks collapse despite posting impressive performances. All pointers have always indicated that they had been experiencing liquidity issues. It is no wonder that the Kenya deposit Insurance Corporation (KDIC) has been very vocal in ensuring that the customers deposits are well insured by all the banking entities. The emphasis is so much that



KDIC has had to adopt in 2021 a risks-based pricing that ensures that risky banks pay more on insurance to safeguard the customer's deposits.

Studies have been done by different experts in the financial sector to evaluate the impacts of liquidity management on the performance of commercial banks. Findings by Ruozi and Ferrari (2012) concluded that banking institutions fail because of lack of proper liquidity management. Acter and Mahmud (2014) asserts that it is paramount that liquidity and profitability are given critical focus as they determine the financial health of the company. Kaur and Skilky (2013) alluded that though profitability ratios would demonstrate a company's overall efficiency and performance, the company would certainly require liquidity to continue their business.

Cash management practices in small and medium enterprises were studied by Kinyanjui, Kiragu, and Riro (2017) in Nyeri Town, Kenya; Muthama (2016) in Kisii County, Kenya; and Njeru and Trimba (2015) in Nairobi. Liquidity management and banking institution profitability in Kenya are therefore insufficient, which necessitates further study. This research fill this gap by answering the question: Could the financial performance of the commercial banks in Kenya be determined by liquidity management in the institutions? A knowledge gap existed in this area.

### **1.3 Research Objective**

This research objective was to ascertain the effect of liquidity management on the financial performance of the banks listed at the Nairobi Securities Exchange

### **1.4 Value of the study**

The findings adds to knowledge by identifying how financial institutions in Kenya manage their cash and the relationship it has with their profitability. This research will provide a well-

established framework to other researchers and professionals to guide future research and appraise contemporary business practices.

The outcome of this study may bring forth better insights to the management of financial institutions on how to create efficient cash management practices that can maximize a firm's profitability. This study will benefit financial institutions since better cash management may lead to lower operating costs by financial institutions.

The findings of this study may be instrumental also to the policymakers. The study may provide basic guidelines for policymakers in the financial sector in Kenya. They will find it helpful to benchmark with financial institutions and learn how to manage cash for profit maximization.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Theoretical and empirical research on Liquidity management and profitability are reviewed in the chapter. The theories on which the study is anchored are indicated. The empirical studies done locally and globally are reviewed. The chapter also conceptualizes the variables of the research and their relationships.

### **2.2 Theoretical Review**

This segment reviews the theories that underpin this study. These are the free cash flows theory, Liquidity Preference Theory and the cash conversion cycle theory

#### **2.2.1 Free Cash flow Theory**

In 1986, Jensen proposed the agency cost of free cash flows. An organization's corporate managers are shareholders' representatives, agents who represent a principal and act in the principal's best interests. The problem here is that the agent may have different aims and interests than the principal and may act to further those goals and interests at the expense of the primary (Eisenhardt, 1989). The ideal amount of cash holding might sometimes lead to agency issues between shareholder and manager concerns. On examining such conflicts, the free cash flow theory has become a key element of the financial literature. According to Huseyin (2011) managers deliberately keep funds to increase the assets under their control and obtain authority over the investment decisions of the firms. Through the cash on hand, the manager can avoid raising external funds or providing extensive information to financial markets concerning the entity's investment projects. The executive team may, as a result, make investments that harm shareholders' fortunes.

Through the free cashflow theory we draw a line between investment for profit maximization and the need for liquidity for management. The theory does not however indicate how to achieve a balance between current obligations and investing for the benefit of shareholders' wealth maximization yet managing liquidity in the company is essential. Even though growth projects have a negative net present value, the lead teams of organizations with poor investment opportunities will hold more funds (Huseyin, 2011).

### **2.2.2 Cash Conversion Cycle Theory**

Cash conversion cycle theory relates with the time an entity takes to settle its obligations and to receive cash (Gitman, 1974). This is calculated from the average days of collecting receivables combined with the days until the inventory sold then reduce by the number of days the implementation of the payment to the supplier (debt). The larger the cash conversion cycle, according to the theory's creator, Gitman (1974), the better the firm's performance. The cash conversion cycle is crucial in any corporate organization since it allows them to know how much money they need. Every business entity should examine its cash conversion cycle in order to make any necessary modifications, as it affects firm profitability.

The cash conversion theory was ideal as it correlates liquidity management to financial performance of the different entities. The cash conversion cycle theory does not however provide an ideal balance between liquidity management and profitability.

### **2.2.3 Liquidity Preference Theory**

Keynes (2011) came up with the liquidity preference theory that states that the need for money is not for debt but for the need to remain liquid. This is the quantum of funds that the entity is willing to keep given the interest rate. According to Keynes (2011), entities hold liquid assets for three reasons. Firstly, individuals prefer to be liquid for routine expenses which relates to

transactional demand. The amount of cash needed is pegged on the individual's income. The need to spend increase with income. Secondly, people will also desire to have liquid assets for precautionary demands which is the demand. The need for this type of money also rises with the increase in income levels. The third reason people will hold liquid assets is for speculative demand. Speculative demand refer to the demand to monitor and capitalize on the changes in interest rate. According to Keynes, increase in the rate of interest, lowers the speculative demand for money and a decline in interest rate also lowers the speculative demand for money. And the lower the rate of interest, the higher the speculative demand for money.

The theory aided in explaining why entities gave special focus on liquidity management especially knowing well that they could determine when to invest the same for a return to the shareholders whenever the trend of interest rate is favorable.

## **2.3 Determinants of Profitability**

In 2021 the Kenya Deposit Insurance Corporation (KDIC) came up with a new approach of assessing commercial banks risk profile. The risk profile was used as a basis to bill the commercial banks for the insurance of the customers deposits. The assessment centred around the CAMEL rating calculated from the financial reports provided to KDIC by the banks. The elements of CAMEL, being capital adequacy and liquidity are what we focused on. Liquidity is measured by net liquid assets divided by total short-term liabilities. Capital adequacy is measured by core capital divided by total risk weighted assets. We therefore took a focus on analysing the total risk weighted assets, core capital and liquidity

### **2.3.1 Capital Adequacy**

The two aspect of capital adequacy in the banking sector are core capital and total risk weighted assets. A company's equity capital can be viewed in two ways. Per Aburime (2018), it's a payment made by an insurance company's owners in exchange for the right to receive all future earnings. Also, the owners' funds are available to support the business. In addition to reserves, total shareholders' funds are also referred to in this context. The ratio of equity capital to the total asset is used to calculate capital volume (Aburime, 2018). One of the most often utilized predictors of corporate profitability is capital volume. It is a measure of a company's financial strength. Profitability and capital have been shown to have a positive relationship, as expected (Athanasoglou et al., 2015). According to Hifza Malik (2017), volume capital and return on assets have a positive and statistically significant relationship. Al-Shami found a significant and positive correlation between capital volume and profitability in his research.

According to Ongore and Kusa (2013), a firm's production capabilities is defined by the quantity of assets it has. According to Niresh and Velnampy (2014), a large firm has lower production costs, which reduces the likelihood of lower firm profitability. Big companies are more efficient and better at exploiting economies of scale than small companies. The assets, sales, workers, and market share of a corporation are all used to determine its size. Firm size was equated to the assets of the firm in this study. Empirically, firm size affects firm profitability (Abeyrathna & Priyadarshana, 2019; Opeyemi, 2019). Opeyemi (2019) established that capital adequacy had a positive relationship with profitability. However, Ozcan, Unal, and Yener (2017) found that firm size and profitability showed no association. Kumar and Kaur (2016), oppositely, showed a negative relationship. This creates the need to study firm size and its relationship with the profitability of financial institutions.

### **2.3.2 Liquidity Management**

Company liquidity is refers the capability of a firm to settle its debts when they become due, either by using cash on hand or by converting short-term assets into cash (Oladipupo & Okafor, 2017). It is the capacity of a company to settle its commitments with the cash at hand or assets that can easily be converted into cash (Chaharbaghi & Lynch, 2019). Balances of Bank and cash should be kept satisfactory to meet quick liabilities towards claims due for installment payment yet to be settled. As a company's cash balances are managed, it can maximize cash flow and avoid insolvency. Cash management is critical for both new and developing firms, according to Bort (2014). Firms may face cash flow challenges as a result of a lack of margin of safety in the event of unexpected expenses, making it difficult to fund innovation or expansion. It's difficult to hire and keep good personnel when you have a cash flow problem (Beranek, 2020). Cash management tools include the statement of cash flows, accounting records, and the account books. It includes credit control, cash balance and planning, as well as projections of future cash flow (Katz & Green, 2019).

### **2.3.3 Total Deposit Liabilities Levels**

Banks will often offer two types of deposit accounts. This could either be demand deposits such as savings or current account and the second being term deposits such recurring or fixed deposits. In 2020 the customer deposits in the Kenya commercial banks sector grew by 8.9 percent despite the COVID-19 pandemic. The demand for deposits by the commercial banks in Kenya is largely driven by the lending demands by the banks customers. Husni (2011) examined the relationship between the commercial bank's performance in Jordan and the total liability and ascertained that there a significant positive relationship. For purpose of the study, we looked at the deposits in relation to the core capital through the core capital to the total deposit liabilities.

## **2.4 Empirical Review**

The research is referenced to the work of several scholars both globally and locally.

#### **2.4.1 Global Studies**

In Kirtipur Municipality, Nepal, Small and medium manufacturing firms' profitability and management of cash were examined in Maharjan's (2019). This descriptive study used a quantitative research paradigm and a sampling approach to target a sample of more than 50% of registered firms in Kirtipur Municipality. The sample structure was made up of medium and small manufacturing companies in the Kirtipur municipality. The link between cash management and profitability was minimal. What is evident from the work done by the researcher is that the analysis was on the manufacturing sector. It may not be obvious that the relationship between cash and profitability yielded the similar results in both the banking and manufacturing sector.

Yucel and Kurt (2018) carried out an empirical study in Turkey on the cash conversion cycle, cash management, and profitability of ISE-listed companies. The data covers the years 1995 to 2000 and includes one hundred and sixty-seven companies whose stocks are traded on the Istanbul Stock Exchange (ISE). Based on the era, industry, and business size, regression and correlation analyses are used. The data was acquired from ISE's sources and utilized to analyze the balance accounts and income statements of 167 sample companies from 1995 to 2000. The study found that the cash conversion cycle was adversely associated to the return on asset and return on equity profitability ratios. The researcher covered several sectors in the study. It is important however to note that the results could be different from sector to sector hence the need to focus the research on the banking sector for our case.

Nso (2018) investigated the cash management practices used by 500 regulated microfinance institutions, as well as the relationship between liquidity management and financial performances. The study population is MFI staff in Cameroon (both administrative and



management). In this study, a case study was used as the research strategy. In Cameroon, the sample size was 30 employees of MFIs. The study used easy sampling as its sampling technique. Observations, a questionnaire, and a review of MFI annual reports, journals, and other papers were used to gather data. To measure the relationship between profitability and cash management, the data was presented and analyzed using tables, percentages, and a correlation coefficient based on the average scores of the two unique variables. Cash management and MFI profitability have a favorable correlation, according to correlation study. From the work done by the researcher it was evident and also confirmed by the author that this was not a representation of all the parts of the country. It would therefore be difficult to arrive at fully objective conclusion.

Oladele (2014) examined the impact of cash management on the financial performance of manufacturing enterprises in Nigeria. The researchers used correlation and regression analysis in establishing the impact. It was established that CCC and ROE had a robust beneficial association, while CCC was found to have a non-significant obstructive association. It is important to carry out a research about listed commercial banks in Kenya to ascertain whether the same conclusion arrived at by Oladele (2014) would hold.

#### **2.4.2 Local Studies**

In Kenya's Nakuru county, Oteyo (2018) examined the performance of medium businesses in terms of cash management and financial management. The study was based on a survey of SMEs that was done in a cross-sectional manner. Seventy-three SMEs were examined using a quota sampling method. It was determined that 45 medium-sized and 28 small-sized businesses had been investigated in total. As data collection instruments, questionnaires and personal interviews were employed. Owners and managers of SMEs were the target respondents. SPSS software was used to conduct descriptive and regression analysis. Cash management and

financial success had a strong positive association. The research provides a basis for future researchers to ascertain whether the same conclusion could be arrived at in different sectors.

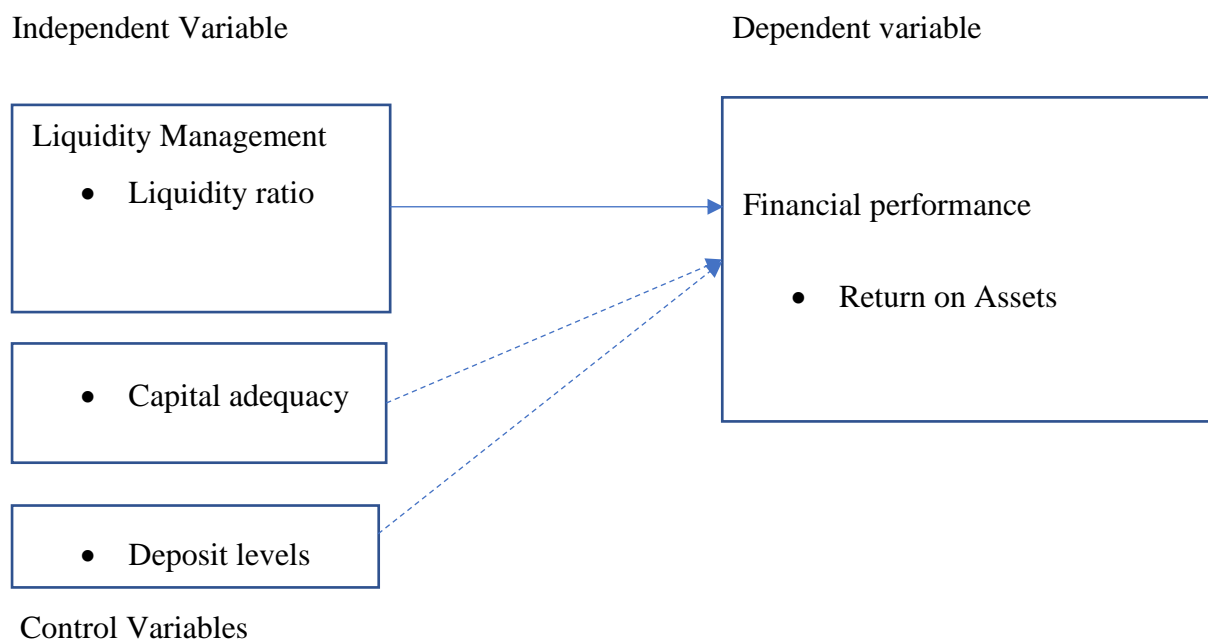
Nyambane and Ouma (2017) investigated the cash management and profitability of cement industry in Kenya. The researchers utilized a descriptive research design. The target population was polled via questionnaires. Employees from Cement Industries in Kenya's management, sales, and accounting divisions made up the study's population. The sample size was 50 employees from Cement Industries at all levels. The research was done through a demographics. The analyst utilized a non-probability sampling method that is called purposive sampling. The questionnaire used for the study was designed by self. The researcher conducted an initial test of the questionnaires by undertaking a pilot study and irregularly sampled five respondents at Kenya fluorspar company Ltd. Descriptive, and correlation analysis was done. Cash management practices showed an insignificant relationship with profitability. The cement industry is fundamentally different from the banking sector, t would therefore be interesting to see if the same results would be arrived at.

Ndirangu (2017) investigated the impact of cash management on the financial performance of NSE-listed enterprises. The study used a descriptive research design, with 15 businesses that are trading on the NSE as the target population. The analysis analyzed secondary data from NSE, CMA, and the companies' respective websites over seven years, from 2010 to 2016. To assess the links between cash management and financial performed, the data was subjected to multiple regression and correlation analysis. Financial performance of NSC listed companies was positively and significantly affected by the CCC. The size of firms listed on the NSE had an adverse effect on their financial performance. It is important to note that Ndirangu (2017) focused on different sectors. This provided a basis for this research to ascertain whether the results are varied or not depending on sectors.

## 2.5 Conceptual Framework

The independent variable is liquidity management, whereas the dependent variable is profitability. This is as exhibited in figure 2.1. The relationship between the two variables was controlled by capital adequacy as derived through the core capital and total risk weighted assets as well as the deposits level analysed through core capital and total deposit liabilities of the commercial banks.

Figure 2.1: Conceptual Framework



## 2.6 Summary of Literature Review

Liquidity management and financial institution profitability are the variables of this study. Literature on profitability and cash management has been reviewed both theoretically and empirically. The literature is based on liquidity management, determinants of profitability. The empirical studies reviewed showed conflicting findings. The local studies used different variables while at the same time focusing on different firms that warrant the need for a survey of how the Kenyan financial institutions' profitability and liquidity management are related.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This section gave the research methodology adopted in this study. Specifically, it provides the research design, target population, techniques of data collection, diagnostic tests, analysis of data, and operationalization of study variables.

### **3.2 Research Design**

This study used descriptive research design. The descriptive design describes the variables and the cause-effect relationship that occur between and among them (Seeram, 2019). This research design was preferred because it enable the researcher to describe liquidity management and profitability of financial institutions while at the same time establishing their relationships.

### **3.3 Population of the Study**

The targeted population is all commercial banks listed in NSE between 2016 and 2020. This is due to the accessibility of published data for the firms, enabling the researcher to calculate the ratios used to measure the variables in the study. According to NSE (2020), there were eleven banks listed at the NS between 2016 and 2020.

### **3.4 Data Collection**

In this research, the data sources were secondary in nature. A data collection sheet was used to collect the data. Commercial banks' annual reports were used to collect the data. Between 2016 and 2020, data was collected from listed financial firms. Financial ratios were calculated and used for analysis. Cross-sectional and time-series data was used for the study.

### 3.5 Data Analysis

The collected data was cleaned before being coded and entered the analysis software. STATA 13 was applied in data analysis. To examine the statistics, descriptive and inferential analytical methods was used. Mean, standard deviation, minimum, and maximum was used in descriptive statistics. Statistics that are used to make inferences include correlation and regression analysis.

#### 3.5.1 Analytical Model

For the regression analysis, the following multiple linear panel regression model was used:

$$Y = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \epsilon_{it}$$

Where:

$Y_{it}$  = profitability as measured by return on assets of firm  $i$  at time  $t$

$X_{1it}$  = Liquidity management as measured by liquidity ratio of firm  $i$  at time  $t$

$X_{2it}$  = Capital adequacy of firm  $i$  at time  $t$

$X_{3it}$  = Deposit levels as measured by core capital to total deposit of firm  $i$  at time  $t$

$\epsilon_{it}$  = Composite error term (other factors)

$\alpha$  = Constant term

$\beta_1$ - $\beta_3$  = Coefficients of the variables

The data was presented in tabular form.

Table 3.1: Operationalization Framework

Variable Type	Variable	Indicators	Measurement
Dependent	Financial performance	Return on assets	<u>Profit after tax</u> Total Assets
Independent	Liquidity management	Liquidity ratio	<u>Net Liquid Assets</u> Total Short-term Liabilities
Control	Capital Adequacy	Capital Adequacy Ratio	<u>Core Capital</u> Total Risk Weighted Assets
Control	Deposit levels	Total deposit liabilities	<u>Core Capital</u> Total Deposit liabilities

### 3.6 Diagnostic Tests

The study carried out diagnostic tests on the models and data. The tests to be carried relate to multicollinearity, normality, heteroskedasticity and specification test.

#### 3.6.1 Multicollinearity Test

According to (Burns & Burns, 2018) multicollinearity exists where two or more independent or predictor variables are highly correlated or intercorrelated. The study used Variance Inflation Factor (VIF) to show depict the degree of multicollinearity in the variables

#### 3.6.2 Test of significance

Analysis of Variance (ANOVA) was applied to examine the significance of the model. The significance of the regression model was determined at 95 percent confidence interval and 5 percent level of significance. Adjusted  $R^2$  was used to examine the variation in the dependent variable due to changes in the independent variables.

#### 3.6.3 Normality Test

The test premises on the assumption that the residual of the responses is normally distributed around the mean. The null hypothesis of the test is such that the population is normally

distributed. If the p-value is less than 0.05 then the null hypothesis is rejected and there is evidence that the data tested are not normally distributed. Where p-value is above 0.05 then the null hypothesis cannot be rejected. The study adopted the Shapiro-wilk test for normality.

#### **3.6.4 Heteroskedasticity Test**

The test describes the probe where the variance of errors or the design is not the same for all observations, while usually one of the primary assumptions in modeling is that the variances are correlative and that the errors of the model are similarly distributed. The test determined whether the error term variance is constant overtime. The null hypothesis is that the error term is constant over time. Breusch Pagan Test was done to check for heteroscedasticity.

# CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

## 4.1 Introduction

The chapter highlights the collected data that is analyzed. The findings for the analysis are also presented. The descriptive statistics is in section 4.2. Diagnostic tests are presented on section 4.3. Regression analysis is presented on section 4.4 while the discussions of findings are on section 4.5.

## 4.2 Descriptive Statistics

The data in this section is described in terms of mean, standard deviation, minimum and maximum. The statistics were examined for a time spell of five years beginning from 2016 to 2020 to establish the impact of liquidity management on the profitability of banks listed at the Nairobi Securities Exchange.

Table 4.2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	55	2.154667	1.325388	-1.7103	4.0202
LR	55	43.90055	13.35865	20.7	73.1
CAR	55	17.21618	3.769859	3.7	22.8
TDL	55	17.34164	4.6075	2.1	24.36

From table 4.1, the banks showed an average profitability (ROA) of 2.1547% with a standard deviation of 1.3254%. This means that the listed commercial banks showed an average ROA of 2.1547% for the period between 2016 and 2020. They showed a standard deviation of 1.3254%. This stipulates that the return on assets varied greatly in the period of study. It ranged from -1.71% and 4.02% in the period. Liquidity management as measured by liquidity ratio averaged at 43.9% with a standard deviation of 13.359% for the period between 2016 and 2020.



It ranged between 20.7% and 73.1%. Capital adequacy as measured by capital adequacy ratio showed a mean of 17.22% for the period between 2016 and 2020. It showed a standard deviation of 3.77%. Within the period, it varied between 3.7 and 22.8%. Core capital to total deposit liabilities showed a mean of 17.342% with a standard deviation of 4.0608% for the period between 2016 and 2020. For the period, it ranged between 2.1% and 24.36%.

### 4.3 Diagnostic Tests

The study followed through on the diagnostic tests on the models and data. The tests carried out related to multicollinearity, normality, heteroskedasticity and specification test.

Table 4.2: Multicollinearity Test

Variable	VIF	1/VIF
LR	1.07	0.933489
CAR	1.04	0.957050
TDL	1.03	0.967602
Mean VIF	1.05	

Multicollinearity was tested for the data using Variance Inflation Factor. Results show that the mean VIF value (1.05) was less than 2 indicating that the variance was inflated at very low levels. The tolerance statistics are less than 1. Hence, we presume that there is no multicollinearity problem within the data.

Table 4.3: Normality Testing

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
ROA	55	0.94075	3.005	2.360	0.00915
LR	55	0.96866	1.589	0.993	0.16027
CAR	55	0.80364	9.958	4.929	0.00000
TDL	55	0.85011	7.601	4.350	0.00001

For normality of data, the researcher used Shapiro-Wilk test. The test assumes that where the p-value is less than 5%, the null hypothesis that the data is normally distributed is rejected. From the results, ROA, capital adequacy ratio and core capital to total deposit liabilities showed significance values less than 5%. Hence, the researcher rejects the null hypothesis that data is normally distributed and assume that the data for ROA, capital adequacy ratio and total deposit liabilities is not normally distributed. Liquidity ratio showed significance value (0.1603) greater than 5%. Hence the researcher did not reject the null hypothesis and assumed that the data for liquidity ratio is normally distributed.

Figure 4.2: Heteroskedasticity Test

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of ROA

chi2(1)      =      0.03
Prob > chi2  =      0.8734
```

From the findings on heteroskedasticity test, the Breusch–Pagan statistics of 0.03 showed a significance value of 0.8734 which is greater than 0.05. This shows that the researcher does not reject the hypothesis that there is homoskedasticity in the data. Hence, we presume that heteroscedasticity is not present in the data and the error term is constant over time.

Table 4.4: Specification Test

	— Coefficients —		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) random	(B) fixed		
LR	-.0503895	-.0255242	-.0248653	.0082638
CAR	-.0101924	-.0126444	.002452	.
TDL	.0669271	.0959468	-.0290198	.

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)' [(V\_b-V\_B)^(-1)] (b-B)  
 = 10.21  
 Prob>chi2 = 0.0169  
 (V\_b-V\_B is not positive definite)

The specification test was done to establish the preferred model between random and fixed effect. This was done using Hausman test. The test assumes that random effect model is the preferred model. From the findings, the significance value of the Hausman test (0.0169) is less than 0.05. Hence the researcher rejected the null hypothesis that the preferred model is random and presumes that the fixed effect model is preferred.

#### 4.4 Regression Analysis

Regression analysis was done to determine the effect of liquidity management on the financial performance of the banks listed at the Nairobi Securities Exchange. The regression analysis was based on a panel regression adopting fixed effects model.

Table 4.5: Regression Analysis

```

Fixed-effects (within) regression      Number of obs   =      55
Group variable: CD                    Number of groups =      11

R-sq:                                  Obs per group:
    within = 0.3431                     min =          5
    between = 0.0279                     avg =         5.0
    overall = 0.0003                     max =          5

corr(u_i, Xb) = -0.5315                 F(3, 41)       =      7.14
                                           Prob > F        =      0.0006
  
```

ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
LR	-.0526336	.0174379	-3.02	0.004	-.0878501	-.017417
CAR	.0141278	.0515713	0.27	0.786	-.0900225	.1182782
TDL	.0527984	.0445726	1.18	0.243	-.0372177	.1428146
_cons	3.306471	1.091777	3.03	0.004	1.101582	5.511359
sigma_u	1.5184256					
sigma_e	.54372634					
rho	.8863478	(fraction of variance due to u_i)				

From regression analysis, the fixed effects model fits the data. This is shown by F-statistics which are significant (F=7.14; p=0.000). The fixed effect model is a within regressor model thus the interpretation is based on the R squared within the variables. The findings exhibited an R squared value (within) of 0.3431. This exhibits that 34.31% of the switch in profitability was because of changes in liquidity management, capital adequacy and deposit liability levels at ninety-five percent confidence interval. The remaining 65.69% switch in ROA as a measure of profitability is accounted by other factors other than liquidity management, capital adequacy and deposit liability levels.

Results also show that holding liquidity management, capital adequacy and core capital to deposit liability levels to a constant zero, ROA of listed financial institutions would stand at 3.3065. The results also show that a unit increase in liquidity ratio as a measure of liquidity management would decrease Profitability (ROA) by 0.0526 (0.004<p<0.050). A unit rise in

capital adequacy ratio would increase ROA by 0.0141 ( $0.786 > p > 0.050$ ). Oppositely, a unit increase in core capital to deposit liabilities would result to an increase in ROA by 0.0528 ( $0.243 > p > 0.050$ ). Only liquidity ratio showed a significant effect on ROA with capital adequacy and core capital to total deposit liabilities showing an insignificant effect on ROA. This shows that liquidity management has a notable impact on profitability of the listed commercial banks.

#### **4.5 Discussion of Findings**

The findings showed that liquidity management had an adverse and notable effect on the financial performance of listed commercial banks. This concurs with the discovery of Yucel and Kurt (2018) who established that liquidity management had an adverse impact on return on assets as a measure of financial performance. They, however, differed with those of Nyambane and Ouma (2017) who found an insignificant relationship with profitability. The findings also differed with those of NSE (2018) who found that liquidity management and profitability had a positive effect. This is also concurring with the findings of Oladele (2014) who found a positive association between the two.

The study also established that capital adequacy had a beneficial effect on profitability of listed commercial firms. However, the effect was insignificant. This indicates that capital adequacy has no effect on profitability of listed firms between 2016 and 2020. The findings concur with those of Opeyemi (2019) established that capital adequacy had a positive relationship with profitability. The findings differ with those of Hifza Malik (2017) who found that volume capital (total deposit liabilities) and return on assets had a positive and statistically significant relationship.

The study also found that total deposit liabilities had an insignificant positive effect on profitability. This shows that total deposit liabilities improved profitability of listed commercial banks in Kenya between 2016 and 2020. The findings differed with those of Husni (2011) who found a significant effect.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

Chapter five was based on the objective of the research. This research attempted to establish the effect of liquidity management on the financial performance of the commercial banks listed at the NSE. This study presented the summary, conclusions and recommendations based on the findings of this research. This paper also gave the obstacles of the research and suggested areas that should be looked into further.

#### **5.2 Summary of Findings**

Looking at the descriptive statistics, it is evident that the listed commercial banks showed an average ROA of 2.1547. This shows that the commercial banks generate a profit of Ksh. 1 for every Kshs. 2.2 of total assets. Liquidity management as measured by liquidity ratio averaged at 43.9%. This shows that the current assets cover 43.9% of the current liabilities. Hence, the listed commercial banks in Kenya do not have enough cash equivalents to cover the payments of current obligations or debts when due. Capital adequacy as measured by capital adequacy ratio showed a mean of 17.22%. Core capital to total deposit liabilities showed a mean of 17.342% ranging between 2.1 and 24.36%. Total deposit liabilities had a mean of 17.342% for the period between 2016 and 2020 ranging between 2.1 and 24.36.

From the regression analysis, the fixed effect model showed an R squared (within) of 0.3473. This showed that liquidity management and the control variables of capital adequacy and deposit liability levels had a contribution of 0.347 to the unit change in financial standing of commercial banks. The research also exhibited that liquidity management had an adverse notable impact on ROA. On the other hand, capital adequacy showed a positive but

insignificant effect on ROA. Further, total deposit liabilities showed a positive but insignificant effect on ROA. This indicated that liquidity management had a major impact on profitability of listed commercial banks in the country between 2016 and 2020.

### **5.3 Conclusions**

The study found that ROA was 2.2%. Hence, the study concludes that listed commercial banks in Kenya generated a profit of Ksh. 1 for every Kshs. 2.2 of total assets between 2016 and 2020. Hence, the assets of listed commercial banks give low returns indicating low profitability across the firms. On the other hand, ROA showed a range of -1.71 and 4.12. This shows that within the period between 2016 and 2020, the worst performing listed commercial bank had a ROA of -1.71 with the best performing bank showing a ROA of 4.12. This shows that the listed banks in Kenya have differing profit abilities with majority having a 2.2% return on assets.

From the descriptive statistics, the listed commercial banks between 2016 and 2020 had a liquidity ratio of 43.9%. This leads to the conclusion that listed commercial banks in Kenya have current assets that cover less than 50% of their current liabilities. From the regression, the liquidity management had an adverse major effect on ROA. This leads to the conclusion that liquidity management has an adverse notable impact on financial standing of listed commercial banks in Kenya.

Capital adequacy as measured by capital adequacy ratio showed a mean of 17.22. This leads to the conclusion that listed commercial banks in Kenya have a 17% capital available to cover risk weighted exposures. This shows that the listed banks have a high capital adequacy ratio which means that they have a high ability to withstand a financial downturn or other unforeseen losses. From the regression analysis, Capital adequacy showed a positive insignificant effect



on ROA. This shows that despite the capital adequacy increasing the profitability of listed commercial banks, their contribution is insignificant.

Further, core capital to total deposit liabilities showed a positive but insignificant effect on ROA. This leads to the conclusion that total deposit liabilities in listed commercial banks positively but insignificantly affect profitability of the banks. From the regression analysis, the fixed effect model showed an R squared (within) of 0.3473. This leads to the conclusion that liquidity management; capital adequacy and total deposit liability levels are not the major factors influencing the ability of listed commercial banks in Kenya to make profit.

#### **5.4 Policy Recommendations**

The findings showed that the listed commercial banks had low ROA. Hence, this study recommends that listed commercial banks reduce the level of total assets. This can be done by disposing the non-performing assets which would increase the profitability. The banks should also make short term investments on cash to generate additional incomes that will increase the return on assets. The banks should also reduce the level of unnecessary expenses which would increase the level of net income across the banks.

The findings also showed that liquidity management had a significant effect on profitability. Hence the study recommends that the listed banks increase the level of liquid assets. The banks should also reduce the level of current liabilities across their portfolio. The study also recommends that the listed banks pay off debts preferably using long-term financing. It also recommends optimally controlling payables and receivables reducing on costs to do with liquidity. The listed banks can also dispose the capital assets that are not generating income to the institutions.

## **5.5 Limitations of the Study**

The study is restricted by the numerous variables. This study was based on liquidity management and profitability of listed commercial banks. This was overcome by having recommendation for further research. The study was also limited to the commercial banks that are listed. This may limit the generalization of the findings to other sectors. This was overcome through areas for further research. The study was also limited to the period of 5 years, between 2016 and 2020.

## **5.6 Recommendations for Future Studies**

The research suggests a similar study based on other variables influencing the ability of listed commercial banks to make profit. The study also recommends a study on liquidity management and profitability of other firms other than listed firms. A similar study is recommended based on a longer period like 10 years for comparison of results.

## REFERENCES

- Abeyrathna, S. P. G. M., & Priyadarshana, A. J. M. (2019). Impact of Firm size on profitability. *International Journal of Scientific and Research Publications*, 9(6), 561-564.
- Kumar, N., & Kaur, K. (2016). Firm size and profitability in the Indian automobile industry: An analysis. *Pacific Business Review International*, 8(7), 69-78.
- Maharjan, N. (2019). The Impact of Cash Management on Profitability and Sustainability of Small and Medium Manufacturing Business in Kirtipur Municipality, Nepal (Doctoral dissertation, Central Departmental of Management).
- Ndirangu, L. W. (2017). Effects Of Cash Management On The Financial Performance Of The Companies Listed At The Nairobi Securities Exchange (Doctoral dissertation, University of Nairobi).
- Nso, M. A. (2018). Cash management techniques and the relationship between cash management and profitability of micro-finance institutions. *International Journal of Economics, Commerce and Management*, 6(5), 468-481.
- Nyambane, D. O., & Ouma, B. O. (2017). Cash Management And Profitability Of Cement Industries In Kenya. *International Journal of Economics, Commerce and Management*, 5(4), 546-559.
- Oladele, A. O. (2014). Effect of cash management on profitability of Nigerian Manufacturing firms. *International journal of marketing and technology*, 4(1), 129-140.
- Opeyemi, A. (2019). The impact of Firm Size on Firms Performance in Nigeria: A comparative study of selected firms in the Building Industry in Nigeria. *Asian Development Policy Review*, 7(1), 1-11.

OTEYO, O. P. (2018). Cash Management and Financial Performance Of Small And Medium Business Enterprises In Nakuru County, Kenya (Doctoral dissertation, School of Business, Kenyatta University).

Ozcan, I. S. İ. K., Unal, E. A., & Yener, U. N. A. L. (2017). The effect of firm size on profitability: evidence from Turkish manufacturing sector. *Journal of Business Economics and Finance*, 6(4), 301-308.

Seeram, E. (2019). An overview of correlational research. *Radiologic technology*, 91(2), 176-179.

Yucel, T., & Kurt, G. (2018). Cash conversion cycle, cash management, and profitability: An empirical study on the ISE traded companies. *The ISE Review*, 6(22), 1-15.

## APPENDICES

### Appendix I: List Of Financial Institutions In Kenya

#### BANKS

1. ABSA Bank Kenya Plc.
2. Stanbic Holdings Ltd.
3. I & M Holdings Plc.
4. Diamond Trust Bank Kenya Ltd
5. HF Group Plc.
6. KCB Group Plc.
7. NCBA Group Plc.
8. Standard Chartered Bank Kenya Ltd.
9. Equity Group Holdings Plc.
10. National Bank of Kenya
11. The Co-operative Bank of Kenya Ltd

## Appendix II: Data Collection Sheet

Year	Return on assets	Total Capital to total risk weighted asset ratio	Liquidity Ratio	Core Capital to total deposit liabilities
	%	%	%	%
2016				
2017				
2018				
2019				
2020				

### Appendix III: Data

Bank	Year	Return	Liquidity	Capital	Core capital to
		on assets	ratio	adequacy ratio	Total Deposit liabilities ratio
		%	%	%	%
Absa Bank Kenya Plc	2016	2.7404	28.3000	17.9000	21.1000
Absa Bank Kenya Plc	2017	2.4586	33.4000	18.0000	20.8000
Absa Bank Kenya Plc	2018	2.1957	35.7000	16.4000	18.2000
Absa Bank Kenya Plc	2019	1.9143	35.7000	16.7000	16.4000
Absa Bank Kenya Plc	2020	0.9905	38.7000	17.5000	17.3000
Stanbic Holdings Ltd	2016	2.1598	54.6000	18.1000	23.1000
Stanbic Holdings Ltd	2017	1.8124	52.4000	16.9000	20.2000
Stanbic Holdings Ltd	2018	2.1983	57.9000	17.4000	16.5000
Stanbic Holdings Ltd	2019	2.1257	58.4000	18.3000	18.4000
Stanbic Holdings Ltd	2020	1.6377	56.4000	18.1000	18.5000
I&M Holdings Plc	2016	3.8647	37.2600	18.1500	20.8200
I&M Holdings Plc	2017	2.9831	34.6200	18.5800	21.8800
I&M Holdings Plc	2018	2.7661	44.6300	17.9200	19.1700
I&M Holdings Plc	2019	3.4371	46.8700	21.5600	19.2900
I&M Holdings Plc	2020	2.9135	50.4700	22.0300	19.2000

Diamond Trust Bank Kenya Ltd	2016	2.5200	50.2000	18.5000	17.4000
Diamond Trust Bank Kenya Ltd	2017	2.0354	49.9000	19.0000	18.5000
Diamond Trust Bank Kenya Ltd	2018	2.0556	53.5000	21.1000	19.4000
Diamond Trust Bank Kenya Ltd	2019	1.9895	54.8000	20.9000	22.3000
Diamond Trust Bank Kenya Ltd	2020	0.9757	56.0000	22.5000	22.8000
HF Group Plc	2016	1.4706	21.0500	17.6900	21.9000
HF Group Plc	2017	0.2917	20.7000	17.0000	22.4400
HF Group Plc	2018	-0.7512	20.9200	15.5500	19.5400
HF Group Plc	2019	0.0116	20.8000	14.2600	15.3000
HF Group Plc	2020	-1.7103	20.9000	9.0800	8.7900
KCB Group plc	2016	3.9184	30.3000	19.9000	18.8000
KCB Group plc	2017	3.4619	28.5000	16.1000	16.4000
KCB Group plc	2018	3.6046	29.4000	17.8000	18.5000
KCB Group plc	2019	3.3674	30.8000	17.5000	17.1000
KCB Group plc	2020	2.4193	31.2000	19.4000	17.3000
NCBA Group Plc	2016	2.5593	38.5200	21.6300	24.3600
NCBA Group Plc	2017	2.1510	46.7200	19.9000	21.1800
NCBA Group Plc	2018	2.6094	47.4600	17.8500	13.8000
NCBA Group Plc	2019	1.3099	50.9500	18.5800	17.6900



NCBA Group Plc	2020	1.0500	54.9300	17.9200	15.5900
Standard Chartered Bank Kenya Ltd	2016	3.4709	56.9300	20.9000	18.9000
Standard Chartered Bank Kenya Ltd	2017	2.2877	58.7300	18.5200	16.7000
Standard Chartered Bank Kenya Ltd	2018	2.7662	66.6100	19.4700	15.8100
Standard Chartered Bank Kenya Ltd	2019	2.9738	62.5700	17.7300	15.6300
Standard Chartered Bank Kenya Ltd	2020	1.6355	71.4900	18.4700	15.3000
Equity Group Holdings Plc	2016	4.0074	47.7000	15.5000	18.5000
Equity Group Holdings Plc	2017	4.0202	54.8000	16.5000	19.8000
Equity Group Holdings Plc	2018	3.8318	57.9000	14.0000	16.4000
Equity Group Holdings Plc	2019	3.6932	54.7000	17.4000	16.4000
Equity Group Holdings Plc	2020	2.0975	73.1000	16.2000	14.1000
National Bank of Kenya	2016	0.1274	29.7000	11.9000	10.3000
National Bank of Kenya	2017	0.3456	36.3000	5.4000	3.5000
National Bank of Kenya	2018	0.1330	43.1000	3.7000	2.1000
National Bank of Kenya	2019	-0.3008	46.1000	11.5000	7.2000
National Bank of Kenya	2020	0.1401	44.4000	10.3000	6.2000
The Co-operative Bank of Kenya Ltd	2016	3.7290	33.2000	22.8000	20.0000
The Co-operative Bank of Kenya Ltd	2017	3.0393	33.5000	22.7000	20.8000
The Co-operative Bank of Kenya Ltd	2018	3.0392	33.5000	15.4000	18.1000

The Co-operative Bank of Kenya Ltd	2019	3.1706	41.5000	15.8000	19.0000
The Co-operative Bank of Kenya Ltd	2020	2.7614	45.8000	17.0000	19.1000