# EFFECT OF LIQUIDITY RISK ON STOCK RETURNS OF COMMERCIAL BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE

AGNES AKOTH ABWAO

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# DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed: _____Date: _____

**AGNES AKOTH ABWAO**

**D63/79231/2015**

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

Signed: _____Date: _____

**DR. KENNEDY OKIRO**

**Lecturer, Department of Finance and Accounting**

**School of Business, University of Nairobi**

# ACKNOWLEDGEMENTS

# DEDICATION

This project is dedicated first of all to the Almighty God for his enabling strength and

secondly to my sister Abigael

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# LIST OF ABBREVIATIONS

**ANOVA**  Analysis of Variance

**CBK**  Central Bank of Kenya

**GDP**  Gross Domestic Product

**KDIC**  Kenya Deposit Insurance Corporation

**LPT**  Liquidity Preference Theory

**MFB**  Micro- Finance Banks

**NASI**  Nairobi All Share Index

**NPL**  Non- Performing Loans

**NSE**  Nairobi Securities Exchange

**SPSS**  Statistical Package for Social Sciences

# ABSTRACT

Effective management of the liquidity position of a firm is considered as a fundamental business function for all sizes of business whether small, medium or large. This is because when a firm does not manage its liquidity well, it will have challenges in meeting its financial obligations when they fall due to inadequate of cash. Most businesses worldwide, whether developing or developed have failed mainly due to liquidity starvation. This study sought to determine the effect of liquidity risk on stock returns of listed commercial banks at the NSE. The study's population was all the 11 commercial banks quoted at the NSE. The independent variable for the study was liquidity risk as measured by the ratio of customer deposits to total gross loans. The control variables were capital adequacy as measured by the ratio of gross loans and advances to total assets and bank size as measured by natural logarithm of total assets. Stock returns was the dependent variable which the study sought to explain and it was measured by changes in stock price. Secondary data was collected for a period of 5 years (January 2013 to December 2017) on an annual basis. The study employed a descriptive cross-sectional research design and a multiple linear regression model was used to analyze the association between the variables. Data analysis was undertaken using the Statistical package for social sciences version 21. The results of the study produced R-square value of 0.264 which means that about 26.4 percent of the variation in the listed commercial banks' stock returns can be explained by the four selected independent variables while 73.6 percent in the variation of stock returns of quoted commercial banks was associated with other factors not covered in this research. The study also found that the independent variables had a strong correlation with stock returns (R=0.514). ANOVA results show that the F statistic was significant at 5% level with a p=0.001. Therefore the model was fit to explain the relationship between the selected variables. The results further revealed that bank size produced positive and statistically significant values for this study while liquidity risk and capital adequacy were found to be statistically insignificant determinants of stock returns of listed commercial banks. This study recommends that measures should be put in place to enhance bank sizes among commercial banks as this will improve their stock return

# CHAPTER ONE:

# INTRODUCTION

## 1.1 Background of the Study

Maintaining satisfactory level of liquidity, minimizing risk and optimizing earning capability are the three key domains of finance deserving undevided attention on the part of the finance managers. Consequently, liquidity management could be considered as a crucial tool for analyzing the liquidity and sustainability of corporate organizations without which it will be hard to realize the organization's objectives (Diamond & Rajan, 2005). Liquidity management is a financial engagement that is concerned with effective management of the two working capital components, that is, the current liabilities and the current assets. The financial analysis function requires a firm to look for significant amounts of working capital to execute current obligations while continuing with its operations since a firm's failure to execute its duties due to inadequate liquidity has huge risk implications. Lack of adequate liquidity is often attributed with factors such as loss of creditor's confidence, credit image, unnecessary legal battles and high-cost emergency borrowing and all these are a threat to the continuity of the firm (Jeanne & Svensson, 2007).

The study was based on three theories namely; commercial loan theory, the liability management theory and liquidity preference theory. Commercial loan theory informs the proposed study as banks are expected to be liquid at all times but this is usually not the case; failure to be liquid has implications on banks' returns and this study intends to find out the nature of this relationship. Liability management theory posits that banks need not abide by ancient liquidity practices as they can bid for funds in the

market in case of a liquidity shortage. This means that a bank can create additional liquidity by creating additional liabilities. Liability management theory has led to developments in the banking sector through innovation of certificates of deposits, issuing short-term notes, and borrowing from other banks or from the central bank (Alshatti, 2015). Liquidity preference theory determines the mix of assets and liabilities that an entity can hold. Therefore, a bank's decision problem will therefore be on how to balance returns and liquidity, consequently growing its returns (Dafermos, 2009).

The Banking industry in Kenya is regulated by the Banking Act, CBK Act, and the Companies Act and the various regulations given by CBK. The CBK found under the Finance Ministry, is responsible for the formulation and implementation of monetary policies and fostering solvency, liquidity and effective functioning of the financial system (CBK, 2013). The returns for most listed commercial banks at NSE have been on the rise in the last 10 years. However, there have been periods where returns either experienced significant fluctuations or deepened. It is therefore imperative to carry a research on influence of liquidity risk on stock returns of quoted commercial banks.

### 1.1.1 Liquidity Risk

Liquidity refers to the extent to which an organization's assets or collateral can be sold or purchased in the market with no impacts on variations of the asset's current price. Liquidity is described by an extremely high degree of financial activity. It assesses how much finances a company has and the simplicity of paying its debt. Assets in any firm are grouped into numerous classes (Tabari, Ahmadi & Emami, 2013). According to Drehmann and Nikolaou (2009), liquidity risk is the likelihood that financial institutions will be unable to timely meet their debt obligations. It is the

risk emerging from the inability of the firm to meet its obligations when they fall due without incurring losses. Liquidity risk mainly implies the likelihood of the investors facing negative results of a financial state of an economy if a bank fails to meet its financial obligations on time (Adeyemo & Bamire, 2005).

Assets in any firm are grouped into various classes. Liquid assets such as cash, cash equivalents and marketable securities make up the liquid assets. Liquid assets form a viable part of a firm's assets. Financial managers tend focus mainly on the measurement and administration of corporate liquidity failure to which may translate to adverse shortage of liquidity leading to incapability to accomplish its short and medium term obligations as and when they become due hence financial distress (Dittmaret, 2003). Liquidity risk is mainly caused by the inability of the management to foresee and plan for fluctuations in funding sources and cash needs (Ferrouhi & Lehadiri, 2013). Liquidity plays a fundamental role in assisting the firm to meet its shorter and medium term obligations as and when they arise. This enables firms to manage working capital and optimize the surplus funds all in a rapidly changing regulatory environment (Ngugi & Njiru, 2005).

The common liquidity risk measurement metrics involve customer deposit to total asset and customer deposits ratios total loans. Ilhomovich (2009) used cash to deposit ratio to determine the liquidity level of banks in Malaysia, and this too is considered an appropriate measure for liquidity risk. In this study, liquidity risk will be assessed using total customer deposits to gross loans ratio.

### 1.1.2 Stock Returns

Stock return refers to the gain or loss of share value during a specific period usually quoted as a percentage. It comprises of capital gains and any income gained by the

investor from the stock (Mugambi & Okech, 2016). Stock returns can be used to predict output and investment since they are forward-looking variable which outlines future discount rates and cash flow expectations. Stock returns serve as an index to investors or governments in making their investment decisions. Investors of different financial capacity are able to invest in stocks as long as they are able to get a return that is higher than their cost of capital (Wang, 2012).

The availability of adequate market information and the effectiveness and efficiency of stock in the allocation of shares and equities is determined by stock returns. Changes in stock prices create some form of uncertainty for the investors which influence the stocks' demand and supply (Taofik & Omosola, 2013). Shares and stock markets react to any prize-shaping information, relevant for future market development (Širucek, 2013). Firms with higher stock returns are more profitable and thus they generally contribute to economic growth (Aliyu, 2011). Therefore, stock markets returns' uncertainties is a fundamental aspect of the aggregate economy since unstable economic growth trends makes consumption and investment difficult (Erdugan, 2012).

Stock returns are mostly measured using the stock market indexing. The performance of a specific stock is shown by fluctuations in its stock price. Just like a rise in stock prices indicates positive stock performance while a decrease shows declining performance, a higher stock index marks a better performing market or sector, as compared to a lower stock index (Daferighe & Sunday, 2012). In Kenya, several indices are used in the calculation of stock returns and they include (NASI), FTSE NSE Kenya 15, FTSE NSE Kenya 25 Indices and NSE 20 share index. The oldest

(since 1964) is NSE 20 share index which is occasionally reviewed to reflect the accurate picture of stock market performance.

### 1.1.3 Liquidity Risk and Stock Returns

Liquidity problems may have tremendous adverse consequences on a bank's capital and reserves. In severe cases, crumpling of the banking system or even placement of banks under receivership, collapse, or dissolution are possible eventualities (Guru, Staunton & Balashanmugam, 2002). Banks may have to get funds from the marketplace even at a high interest rate in case of liquidity emergency. This situation would lead to lowering the bank's capital and reserve. A bank's continued uptake of loans from other institutions to suffice the demand from its customer base deteriorates its effort to sustain a favorable capital structure (Sohaimi, 2013). If a bank fails to serve the needs of customers, there could be a bank run which could deplete available funds leading to placement under receivership or collapse of the bank.

Liquidity risk influenced most of the past banking crises and the recent financial crises are not different. A report by the International Monetary Fund (2011) indicated that financial institutions, specifically commercial banks collapsed in the 2007-8 financial crisis as a result of inadequate liquidity supervision and over-reliance on interim funding sources, which facilitated the collapse of several banks. Ly (2015) cites that the recent challenges in the economy have resulted to difficulties in banks' liquidity risk supervision has sparked attention from regulators, researchers, and financial institutions globally. A substantial body of literature examines the relationships between bank performance and other internal factors underpinning bank prosperity such as credit risk, bank size, and bank regulations but less research is done on liquidity risk.

In spite of the aforementioned insufficiency of topic of research in this document, Allen and Gale (2000) hold a view that there is relevant literature related to overall scarcity of liquidity. The liquidity shortage arises from the liability side of the banks' financial statement. Banks are connected through collective investments implying that failure of several banks spurs a contagion to other banks. Bourke (1989) cites a positive association amid liquidity and financial performance of banks. On the contrary, Molyneux and Thorton (1992) stated that a negative association exists between liquidity and bank performance.

### 1.1.4 Commercial Banks in Kenya

Based on CBK's directory, there are 42 commercial banks in the country some of which are internationally based. The headquarters of these banks are in Nairobi and they serve both retail and corporate customers. The banks in the country perform the following function: creation of money, community savings, ensure smooth support of payment mechanisms, ensure smooth flow of international transactions, storage of valuable goods and provision of credit services. CBK which falls under Treasury docket, is accountable for the formulation and execution of monetary policy and foster of liquidity and proper operations of Kenyan commercial banks. This policy formulation and implementation also include financial performance and financial risk management of the commercial banks (CBK, 2015). Out of the 42 banks, 30 are owned by locals and 12 by foreigners while 11 are listed on the Nairobi Securities Exchange (CBK, 2017).

All commercial banks are expected to adhere to specific regulations like lowest cash reserves and liquidity ratios with the central bank. In June 2015, the Cabinet Secretary for Treasury proposed to increase the capital requirement level from one billion

shillings to five billion shillings. Only 21 banks as of June 2016 met the CBK requirement to raise the capital reserves to 5 billion shillings (The National Treasury, 2016). The goal was to create a strong and stable banking sector that would ultimately lead to economic growth though this received criticism from stakeholders as some argue there is no relationship with increasing liquidity level requirements and bank performance.

A report on the listed commercial banks in Kenya published by the research team at Cytonn Investments (2015) argue that Kenya is overbanked with a comparatively high proportion of banks to total populace, with 42 commercial banks offering services a population of 44 million people, compared to 22 banks in Nigeria serving 180 million people and 19 banks in South Africa Serving 55 million people. Imperial Bank and Dubai Banks were placed under liquidation with the Kenya Deposit Insurance Corporation (KDIC). This is a clear indication for the necessity of liquidity risk-based supervision and policy recommendations that would safeguard banks' liquidity and the stakeholders' funds. Consolidation could be embraced to have fewer strong and stable banks to ensure a stable financial system in the economy and profitable commercial banks.

**1.2 Research Problem**

Effective management of the liquidity position of a firm is considered as a fundamental business function for all sizes of business whether small, medium or large. This is because when a firm does not manage its liquidity well, it will have challenges in meeting its financial obligations when they fall due to inadequate of cash (Jenkinson, 2008). According to Rafuse (2006), most businesses worldwide, whether developing or developed have failed mainly due to liquidity starvation. The

importance of managing liquidity requirements of a firm has in addition been advocated due to its perceived effect on the firm performance and market value and as a result it forms part of the company's strategic and operational thinking (Bringham, 2002). Liquidity risk is caused by uncertainty regarding the holding period or investment horizon, short-run constraints on market-making capital and the correlation across the cash flow demands of market participants. The importance of an effective management of liquidity risk is more pronounced in the banking sector to ensure economic growth and stability.

The Kenyan banking sector plays an important role in the economy by enhancing the flow of funds through advancing funds to the cash starved users and providing liquidity to the savers in the liability side. Due to their type of business processes, the bank's liquidity position needs to be effectively managed since deposits are demanded by customers unpredictably thus effective liquidity management systems must be employed. Between 1993 and 2005, a total of 20 financial institutions in Kenya were placed under liquidation (Omondi, 2015). In October 2015 and April 2016, CBK placed Dubai bank, Imperial bank and Chase bank under receivership because of liquidity crisis that threaten the normal operations of these banks.

Empirical evidence is largely inconsistent and quite varied on the impact of liquidity risk on stock returns. Al-Tamimi and Obeidat (2013) study on capital adequacy determinants in commercial banks of Jordan concluded that there exists a statistically significant positive association between level of capital adequacy, liquidity risk, and the rate of return on assets. Cummins, Wei and Xie (2012) studied on financial sector and integration spillovers, with emphasis on effects of operational risk events on US banks and insurers. Htay and Salman (2015) studied operational and liquidity risk

disclosure practices by Malaysian listed banks. The study concluded that among all the disclosures about a bank, liquidity and operational risk disclosure were crucial to enable investment decision making. Ferrouhi and Lehadiri (2013) reviewed the liquidity determinants of Moroccan Banking Industry. These studies are mainly in developed countries and therefore the finding could be different from that of Kenyan banks since it is a developing nation.

Locally, Kibuchi (2015) aimed at investigating the association between liquidity risk and Kenyan commercial bank's financial performance and established that liquidity risk affects both the bank's performance and reputation which results in loss of confidence among the depositors. Mulandi (2016) explored the association between liquidity and operational risk of Kenyan commercial banks and found that liquidity has a negative and significant relationship with operational risk. Majakusi (2016) investigated effects of liquidity management on the commercial banks' performance and found a significant positive association between the study variables. Nyongesa (2016) sought to determine the association between liquidity risk and financial performance of Kenyan commercial banks and found that liquidity risk has a notable impact on commercial banks' financial performance. The lack of consensus among the various scholars on the influence of liquidity risk on stock returns is reason enough to conduct another study. In addition, the local studies done have not focused on the impact of liquidity risk on stock returns of commercial banks enlisted at the NSE which is the gap the current study seeks to address. This study will attempt to give an explanation to the research question; what is the effect of liquidity risk on stock returns of commercial banks enlisted at the NSE?

## 1.3 Objective of the Study

To determine the effect of liquidity risk on stock returns of commercial banks enlisted at the NSE

## 1.4 Value of the Study

The study's findings will be used for future reference by researchers, students and scholars who seek to undertake correlated or similar studies. The study will also benefit researchers and scholars in the identification of other fields of research by citing related topics that require further studies and empirical studies to determine study gaps.

The findings are hoped to be of benefit to the various managers who are tasked with the management of listed banks and other commercial banks in Kenya as this study provides useful information and recommendations to assist them in making more informed management decisions leading to shareholders' wealth maximization. The study increases the pool of knowledge available to assist both existing and future firms to improve their returns and ensure sustainability.

To government and organizations such as the Central Bank, in the formulation and implementation of policies and regulations governing monetary policies and liquidity to ensure a stable banking sector so as to promote economic growth and reduce its spiral effects on the economy. This will contribute to the advancement of monetary development and improvement the economy.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

The chapter reviews theories that form the foundation of this study. In addition,
previous empirical studies that have been carried before on this research topic and
related areas are also discussed. The other sections of this chapter include
determinants of stock returns, conceptual framework showing the relationship
between study variables and a literature review summary.

## 2.2 Theoretical Framework

This presents review of the relevant theories that explains the connection between
liquidity risk and stock returns. The theoretical reviews covered are; commercial loan
theory, the liability management theory and liquidity preference theory.

## 2.2.1 Commercial Loan Theory

The commercial loan theory is of English origin formulated by Adam Smith in The
Wealth of Nations, dating back to the eighteenth century (Smith, 1776). This theory
posits that, the assets of commercial banks should be short-term, self-liquidating loans
offered to organizations for financing of their inventory requirements. The loans
offered by commercial banks were considered self-liquidating because they generated
the means for their repayment; the goods acquired or produced on credit, when sold,
provided the funds to repay the loan. This theory implies that by financing this type of
loan, banks would have the most easily convertible assets, and would thus finance
their dues whenever a need arises (Emmanuel, 1997). This theory informs the
proposed study as banks are expected to be liquid at all times but this is usually not

the case; failure to be liquid has implications on banks' stock returns and this study intends to find out the nature of this relationship.

The commercial loan theory has limitations. The theory ignores other types of credit needs, such as loans to finance the acquisition of assets such as a residential property. Another limitation for this theory is the overly cautious view regarding deposit withdrawals. The theory holds an assumption that all depositors will withdraw their funds at the same time; this is usually not the case. The third weakness is that during recession or depression, borrowers may find difficulty repaying the loans, thus making them no self-liquidating. The loans that were treated as short term could become long-term as borrowers may need more time and banks to renew the loans for the borrowers to repay them. Despite the stated weaknesses, this theory is useful to bankers when assessing borrowers; short-term and self-liquidating loans are preferred as they are an important source of liquidity for commercial banks (Holmstron & Tirole, 2013). This theory has informed developments in the financial sector where, savings and credit cooperative unions, mortgage banks and investment banks have been created to meet the needs of long term financing needs.

### 2.2.2 Liability Management Theory

The theory came into existence in the early 1960s when Woodworth (1968) published an article in the Banker's Magazine. The theory originated from large New York City banks under strong pressure at the time (growing demand for loans as the economy was experiencing recovery from the 1960-61 recession coupled with inadequate growth of deposits at these banks (Woodworth, 1968). The theory posits that banks need not abide by ancient liquidity practices as they can bid for funds in the market in case of a liquidity shortage. This means that a bank can create additional liquidity by

creating additional liabilities. Liability management theory has led to developments in the banking sector through innovation of certificates of deposits, issuing short-term notes, and borrowing from other banks or from the central bank.

The limitation of the liability management theory is that some of the innovations such as CDs, borrowing from the central bank or commercial bank are not a reliable source of improving liquidity. In times of recession, no bank is capable of lending to another bank. Times when an economy is experiencing boom, the interest rates are high and therefore, CDs cannot be traded on the financial markets (Alshatti, 2015). In spite of these limitations, the liability management theory informs the current study by contributing to knowledge on how the finance managers can embrace such strategies to keep the commercial banks' liquidity at desired operational levels.

### 2.2.3 Liquidity Preference Theory

Liquidity management is viewed as key to the survival of any organization. This is consistent with the Liquidity Preference theory (LPT), as stated by Modigliani (1944), which suggests that investors preferred short term investments to long term, as these are easily convertible to cash with little danger of loss of principal. On the other hand, borrowers prefer long term debt as it eliminates the danger of having to repay the debt under adverse conditions. As the repayments are spread in the long run, proper financing planning can be put in place in order avoid interrupting normal operations, thus ensuring an entity's survival during adverse conditions.

Bibow (2005) suggests that LPT determines the mix of assets and liabilities that an entity can hold. Therefore, a bank's decision problem will therefore be on how to balance returns and liquidity, consequently growing profitability (Dafermos, 2009). This theory is relevant to the study because it will enable the bank to balance holding

short term bonds and long term bonds and hold more of short term securities that are more liquid. Since short term investments are more liquid, a bank can easily convert them into cash, which can then be used to cushion the bank against operational risk that can arise.

## 2.3 Determinants of Stock Returns

Stock returns is a matter of great interest to the stock market investors, in that it directly affects the wealth they hold. Key factors that are believed to play a part in the overall performance of stock markets are as follows:

### 2.3.1 Liquidity Risk

Liquidity risk is the capacity of banks to accomplish their monetary obligations when they fall due. Dang (2011) hold a view that adequate of liquidity in banks is positively linked with their success. Liquidity risk control is an obligatory factor of the general risk mitigation charter for all financial institutions (Majid, 2003). An efficient bank ought to adhere to a well-documented framework for alleviation of liquidity risk and shun losses (Guglielmo, 2008). Gatev and Strahan (2003) suggest that customer deposits offer an innate cushion against liquidity risk in commercial banks. The banking sector is interconnected meaning cash flows in one bank harmonize other banks whereby the inflows hedge other banks from outflows emanating from customer withdrawals and loan advancements. This assertion underpins the need for risk management in commercial banks since, banks use deposits to hedge against the liquidity risk.

There are contradictory views on whether liquidity influences financial performance of commercial banks. Shen, Chen, Kao and Yeh (2010) state that liquidity risk is positively correlated to net interest margin which implies that banks with substantial

liquidity levels receive greater interest revenue. On the flipside, Molyneux and Thornton (1992) documented that an inverse relationship exists amid bank success and liquidity.

### 2.3.2 Capital Adequacy

According to Athanasoglou et al., (2005), capital is a significant variable in determining bank financial performance. Capital is the owner's contribution which supports the bank's activities and acts as a buffer against negative occurrence. In capital markets that are not perfect, well-capitalized banks must reduce borrowing so as to support a certain index of assets, and as a result of lower prospective bankruptcy costs they tend to face lower funding costs.

A well-capitalized bank has a signaling effect to the market that a performance above average is to be expected. Athanasoglou et al., (2005) realized that capital contributions positively affected bank profitability, which reflects sound financial condition of banks in Greece. Also, Berger et al., (1987) noted positive causality in both direction between capital contributions and profitability in companies.

### 2.3.3 Bank Size

Bank size determines the extent to which a firm is affected by legal and financial factors. The size of the bank is also closely linked with the capital adequacy because large banks raise less expensive capital and thus generate huge profits. Bank size has a positive correlation with the return on assets indicating that large banks can achieve economies of scales that reduce operational cost and hence help banks to improve their financial performance (Amato & Burson, 2007). Magweva and Marime (2016) link bank size to capital rations claiming that they are positively related to each other suggesting that as the size increases profitability rises.

The amount of assets owned by an organization determine it size (Amato & Burson, 2007). It is argued that large firms have adequate resources to undertake a number of large projects with better returns than firms with small amounts of total assets. In addition, firms with large amounts of total assets have adequate collateral which they can pledge to access credit and other debt facilities compared to their smaller counterparts (Njoroge, 2014). Lee (2009) established that the total assets controlled by a firm as measured by the total assets have an influence on the level of profitability recorded from one year to another.

### 2.3.4 Macro-Economic Variables

Macroeconomic variables impact on financial performance of commercial banks and especially on bank risk has been of great importance to policy makers. Using GDP growth to control cyclical output effects, which are likely to positively influence the profitability of banks, as the rate of growth in the GDP declines, more especially during recession, banks experience negative returns caused by the lowering of credit quality and increases in defaults (Flamini et al., 2009).

Macroeconomic variables that impact on the performance of banks include legislative laws, inflation rate, interest rate, economic growth level measured using Gross Domestic Product (GDP). Athanasoglou et al., (2005) argues that the GDP trend influences the demand for bank's assets. A decline in the GDP growth reduces the credit demand which has a negative impact on the banks' profitability. Additionally, a growing economy with positive GDP growth has a high depending on the prevailing business cycle. There is high demand for credit during boom as opposed to recession.

## 2.4 Empirical Review

Studies have been conducted both locally and internationally to support the relationship between liquidity risk and stock returns but these studies have produced mixed results.

### 2.4.1 Global Studies

Arif and Anees (2012) researched on liquidity risk and performance of the banking sector in Pakistani banks. The research was aimed at inspecting liquidity risk and estimate the consequence on banks' performance. The research methodology entailed secondary data retrieved from financial statements of 22 Pakistani commercial banks during 2004-2009. This study was well conducted as the author used literature from diverse authors and the model used was applicable to the context of the study, the results were generalizable.

Sushil and Bivab (2013) studied the determinants of liquidity and their effect on financial performance commercial banks in Nepal. The results of the regression analysis conducted revealed that bank size, non-performing loans, capital adequacy, and liquidity premium paid by borrowers had negative and statistically significant effect on a bank's liquidity. Capital adequacy, bank size and gross domestic product were identified to have negative effect on financial performance, while, liquidity premium paid by borrowers positively influenced financial performance.

Ferrouhi (2014) conducted a study on liquidity risk and financial performance with Key focus on the Moroccan banking industry. The objective of the research was to examine the association between liquidity risk and performance of Moroccan banks. The research used panel data regression of 4 Moroccan banks between the time frame 2001 and 2012. The study findings indicated that Moroccan banks' performance is

mainly determined by 7 determinants, among them was the liquidity ratio. The study was well conducted with reference to the financial ratios that determine bank performance, such a study could be replicated in other African countries or developed nations to ascertain any similarities and/or differences.

Alzorqan (2014) did a research on liquidity risk risk and performance on the banking system in Jordan. The purpose was to investigate difficulty of ascertaining optimal liquidity risk that would guarantee stable and profitable financial operations. The study population consisted of all the 23 commercial banks in Jordan with the sample of two banks. Regression model was applied to estimate the association between the variables under assessment over a period from 2008- 2012. The study findings showed that there is a considerable influence of liquidity of banks on their performance. The sample selected was very small and further research could be conducted to include all the 23 banks to show whether the results and consistent.

Alshatti (2015) studied the influence of liquidity management on profitability among commercial banks in Jordan. The study's objective was to explore the influence of liquidity supervision on banks' performance for the study period under consideration (2005–2012). The correlation between the variables under investigation was shown using correlation analysis. The findings of the research indicated that an increase in the liquid assets ratio and capital ratio results to a reduction in the prosperity of commercial banks. This was a well conducted study as it encompassed a representative sample, with information collected over a fairly long period to guarantee reliability of the findings of the study.

## 2.4.2 Local Studies

Maaka (2013) conducted a study on the relationship between liquidity risk and financial performance of Kenyan commercial banks. The study used correlation research design in which data was collected from financial statements of 33 Kenyan banks over a five-year period (2008- 2012). The findings indicated that the commercial banks' profitability in Kenya is negatively influenced by increases in liquidity gap. The sample included 14 banks, which control a huge proportion of the Kenyan banking system, thus reliable and representative of the Kenyan banking sector.

Kibuchi (2015) aimed at establishing the association between the liquidity risk and financial performance of Kenyan commercial banks. In addition, the study was cross-sectional where data was collected only once between the time frame 2010 and 2014 and a causal study executed in a non-contrived setup without interference of any researcher. The effect relationship between the study variables was established using the multiple regression analysis. The study found that there was positive correlation coefficient between return on assets and customer deposits, cash balance and size of firm though a weak positive correlation between return on assets and liquidity gap existed. It was concluded from the study that liquidity risk not only affects the performance of a bank but also its reputation and this might lead to loss of confidence among the depositors if funds are not timely advanced.

Majakusi (2016) sought to determine the effects of liquidity management on the performance of commercial banks. The sample period was from 2010 to 2014. This study used secondary data that was obtained from the CBK. A regression model was used in data analysis. The findings are that there were fluctuations in financial

performance while liquidity management and capital adequacy registered a steady growth. This shows that banks manage their liquid assets well to satisfy customers' demands for cash. Moreover, commercial banks have the ability to absorb reasonable operational and functional losses without risking the institutions' stability. Furthermore, the management of the commercial banks had the ability to meet the need for additional cash. The study found that ROA and liquidity management are positively correlated. This relationship is also statistically significant. This means sufficient cash causes good financial results.

Nyongesa (2016) sought to determine the association between liquidity risk and Kenyan commercial banks' financial performance. The target population constituted all commercial banks that were in operation between the time frame January 2011 and 31st December, 2015. The data was analyzed using descriptive statistics, correlation and regression analysis as these are conventionally approved tools for descriptive research designs. The findings revealed that roughly 24.5% of the differences in return on assets of commercial banks over the duration of the study were accounted for by variation in their capital adequacy, management efficiency, liquidity risk and asset quality. The study concludes that liquidity risk has a significant influence on the financial performance of Kenyan commercial banks.

Otieno, Nyagol, and Onditi (2016) conducted an empirical study with an aim of analyzing the link between liquidity risk management and financial performance of microfinance banks 17 (MFBs) in Kenya. Longitudinal research design using panel data between the time frame 2011 and 2015 was utilized. Target population comprised 12 licensed MFBs. The desired sample size of 6 MFBs for the study was derived using purposive sampling. Secondary data was retrieved from MFBs financial

reports using document analysis guide. It was concluded from the study that a significant association between liquidity risk management and performance and that liquidity risk management positively influences MFBs' performance. The study was well executed as comprehensive data was incorporated in the study.

## 2.5 Conceptual Framework

The conceptual model developed below portrays this expected relationship between the study variables. The independent variable is liquidity risk as measured using the ratio of total customer deposits to gross loans. The control variables characterized here are bank size and capital adequacy. Stock returns of the listed commercial banks at the NSE will be measured by change in stock prices on an annual basis.

**Figure 2.1: Conceptual Model**

**Independent variable**                                          **Dependent variable**

**Liquidity Risk**

- Total customer deposits/ gross loans

**Stock return**

$$\frac{(MP_t - MP_{t-1})}{MP_{t-1}}$$

**Control Variables**

- Capital adequacy
- Bank size
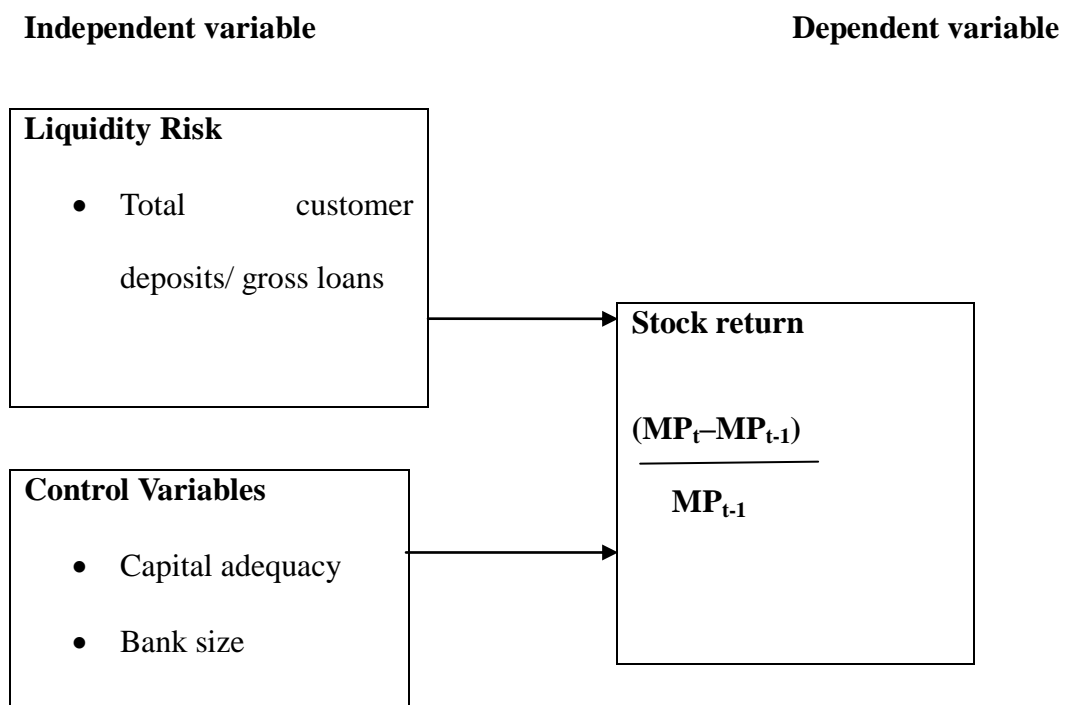
**Source: Researcher (2018)**

## 2.6 Summary of the Literature Review

This chapter has focused on the theories that form the foundation for this study. The theories discussed here are namely; commercial loan theory, the liability management theory and liquidity preference theory. The chapter has also focused on some of the factors that are expected to determine stock returns. There have been previous studies carried out either in this area and/or related areas and their findings have been discussed under empirical review.

The lack of consensus among the various scholars on the influence of liquidity risk on stock returns is reason enough to conduct another study. In addition, the local studies done have not focused on the effect of liquidity risk on stock returns of commercial banks listed at the NSE which is the gap the current study seeks to address. This study attempted to give an explanation to the research question; what is the effect of liquidity risk on stock returns of commercial banks enlisted at the NSE?

# CHAPTER THREE:

# RESEARCH METHODOLOGY

## 3.1 Introduction

In order to determine the effect of liquidity risk on stock returns, a research methodology is necessary to outline how the research was carried out. This chapter has four sections namely; research design, data collection, and diagnostic tests and data analysis.

## 3.2 Research Design

A descriptive research design was employed in this study to investigate the influence of liquidity risk on stock returns of enlisted commercial banks. Descriptive design was utilized as the researcher was interested in finding out the state of affairs as they exist (Khan, 2008). This research design was appropriate for the study as the researcher is familiar with the phenomenon under investigation but want to know more in terms of the nature of relationships between the study variables. In addition, a descriptive research aims at providing a valid and accurate representation of the study variables and this helps in responding to the research question (Cooper & Schindler, 2008).

## 3.3 Population

According to Burns and Burns (2008), population refers to the characters of interest upon which the study seeks to draw deductions. The study population comprised of all the 11 commercial banks enlisted at the NSE from 1st January 2008 to 31st December 2017.

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## 3.4 Data Collection

Data was exclusively obtained from a secondary source. The secondary data was obtained from the banks financial reports and from the Capital Markets Authority as it is a requirement for the listed commercial banks to submit their reports to the regulator. The data obtained covered ten years on an annual basis from January 2008 to December 2017. The specific data collected was; gross loans, customer deposits, risk weighted assets, core capital, total assets and non-performing loans.

## 3.5 Diagnostic Tests

Linearity show that two variables X and Y are related by a mathematical equation Y=bX in which b is a constant number. The linearity test was acquired through the scatterplot testing or F-statistic in ANOVA. Stationarity test is a process where the statistical properties such as mean, variance and autocorrelation structure do not change with time. Stationarity was obtained from the run sequence plot. Normality is a test for the assumption that the residual of the response variable are normally distributed around the mean. This was determined by Shapiro-walk test or Kolmogorov-Smirnov test. Autocorrelation is the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals. It will be tested using Durbin-Watson statistic (Khan, 2008).

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This was tested by the determinant of the correlation matrices, which varies from zero to one. Orthogonal independent variable is an indication that the determinant is one while it is zero if there is a complete linear dependence between them and as it approaches to zero then the

multicollinearity becomes more intense. Variance Inflation Factors (VIF) and tolerance levels were also carried out to show the degree of multicollinearity (Burns & Burns, 2008).

## 3.6 Data Analysis

The data collected from the different sources was organized in a manner that can help address the research objective. SPSS version 22 was utilized for data analysis purposes. Both descriptive and regression analyses were carried out. In descriptive statistics, standard deviation, the minimum, mean, maximum, kurtosis and skewness were computed for each variable. In inferential statistics, both regression and correlation analysis were carried out. Correlation analysis involved determining the extent of relationship between the study variables while regression analysis involved establishing the cause and effect between the independent and dependent variables. A multivariate regression analysis was employed to determine the association between the dependent variable (stock returns) and independent variables: Liquidity risk, capital adequacy and bank size.

### 3.6.1 Analytical Model

Using the collected data, a regression analysis was carried out to establish the extent of the connection between liquidity risk and stock returns. The regression model below was applied:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$.

in which: Y = Stock returns as measured by the change in stock prices as shown in the following formula $\underline{(MP_t - MP_{t-1})}$ Where MP is the market price of the share

$$MP_{t-1}$$

$\beta_0$ = y intercept of the regression equation.

$\beta_1$, $\beta2$ and $\beta3$, =are the regression slope

$X_1$ = Liquidity risk as measured by the ratio of total customer deposits to gross loans

$X_2$ = Capital adequacy as measured by the ratio of total core capital to risk weighted assets

$X_3$ = Bank size as measured by the natural logarithm of the total assets

$\varepsilon$ =error term

### 3.6.2 Tests of Significance

The researcher carried out parametric tests to establish the statistical significance of both the overall model and individual parameters. The F-test was used to determine the significance of the overall model and it was obtained from Analysis of Variance (ANOVA) while a t-test was used to establish statistical significance of individual variables.

# CHAPTER FOUR:

# DATA ANALYSIS, FINDINGS AND INTERPRETATION

## 4.1 Introduction

The chapter focused on the analysis of the collected data to establish the impact of liquidity risk on stock returns of the commercial banks quoted at the NSE. Using descriptive statistics, correlation analysis and regression analysis, the results of the study were presented in table forms as shown in the following sections.

## 4.2 Diagnostic Tests

The researcher carried out diagnostic tests on the collected data. A test of Multicollinearity was undertaken. Tolerance of the variable and the VIF value were used where values more than 0.2 for Tolerance and values less than 10 for VIF meaning that Multicollinearity doesn't exist. Multiple regressions is applicable if strong relationship among variables doesn't exist. From the findings, all the variables had tolerance values >0.2 and VIF values <10 as shown in table 4.1 showing that Multicollinearity among the independent variables doesn't exist.

**Table 4.1: Multicollinearity Test for Tolerance and VIF**

|  | Collinearity Statistics | |
| --- | --- | --- |
| **Variable** | **Tolerance** | **VIF** |
| Liquidity risk | 0.388 | 1.422 |
| Capital adequacy | 0.398 | 1.982 |
| Bank size | 0.376 | 1.398 |

**Source: Research Findings (2018)**

Shapiro-wilk test and Kolmogorov-Smirnov test was used to test for normality. The null hypothesis for the test was that the secondary data was not normal. If the p-value recorded was more than 0.05, the researcher would reject it. The results of the test are as shown below

**Table 4.2: Normality Test**

| Stock returns | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | Df | Sig. | Statistic | Df | Sig. |
| Liquidity risk | .174 | 55 | .300 | .913 | 55 | .789 |
| Capital adequacy | .175 | 55 | .300 | .874 | 55 | .812 |
| Bank size | .176 | 55 | .300 | .892 | 55 | .784 |
| a. Lilliefors Significance Correction | | | | | | |

**Source: Research Findings (2018)**

Both Kolmogorov-Smirnova and Shapiro-Wilk tests recorded o-values greater than 0.05 which implies that the research data was normally distributed and therefore the null hypothesis was rejected. The data was therefore appropriate for use to conduct parametric tests such as Pearson's correlation, regression analysis and analysis of variance.

Autocorrelation tests were run in order to check for correlation of error terms across time periods. Autocorrelation was tested using the Durbin Watson test. A durbin-watson statistic of 1.963 indicated that the variable residuals were not serially correlated since the value was within the acceptable range of between 1.5 and 2.5.

**Table 4.3: Autocorrelation Test**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .514[a] | .264 | .221 | .012631 | 1.963 |

a. Predictors: (Constant), Bank size, Capital adequacy, Liquidity risk

b. Dependent Variable: Stock returns

**Source: Research Findings (2018)**

## 4.4 Descriptive Analysis

Descriptive statistics gives a presentation of the average, maximum and minimum values of variables applied together with their standard deviations in this study. Table 4.4 shows the descriptive statistics for the variables applied in the study. An analysis of all the variables was acquired using SPSS software for the period of five years (2013 to 2017) for all the 11 banks listed at the NSE that provided data for this study. The mean, standard deviation, minimum and maximum for all the variables selected for this study are as shown in the table below.

**Table 4.4: Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Stock returns | 55 | -.010 | .067 | .03411 | .014311 |
| Liquidity risk | 55 | 1.357 | 4.950 | 2.80973 | .835982 |
| Capital adequacy | 55 | .078 | .888 | .48729 | .235217 |
| Bank size | 55 | 7.000 | 8.703 | 8.19255 | .363505 |
| Valid N (listwise) | 55 | | | | |

**Source: Research Findings (2018)**

## 4.5 Correlation Analysis

The association between any two variables used in the study is established using correlation analysis. This relationship ranges between (-) strong negative correlation and (+) perfect positive correlation. Pearson correlation was employed to analyze the level of association between the listed banks stock returns and the independent variables for this study (liquidity risk, bank size and capital adequacy). The study found out that bank size have a positive and statistically significant correlation with the listed banks' stock returns as shown by (r = .490, p = .000). Capital adequacy was found to have a positive but insignificant correlation with stock returns while liquidity risk was found to have a negative but insignificant effect on stock returns.

**Table 4.5: Correlation Analysis**

| | | Stock returns | Liquidity risk | Capital adequacy | Bank size |
|---|---|---|---|---|---|
| Stock returns | Pearson Correlation | 1 | -.106 | .040 | .490[**] |
| | Sig. (2-tailed) | | .441 | .774 | .000 |
| Liquidity risk | Pearson Correlation | -.106 | 1 | .153 | .097 |
| | Sig. (2-tailed) | .441 | | .264 | .482 |
| Capital adequacy | Pearson Correlation | .040 | .153 | 1 | .078 |
| | Sig. (2-tailed) | .774 | .264 | | .570 |
| Bank size | Pearson Correlation | .490[**] | .097 | .078 | 1 |
| | Sig. (2-tailed) | .000 | .482 | .570 | |

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

b. Listwise N=55

**Source: Research Findings (2018)**

## 4.6 Regression Analysis

Financial performance was regressed against three predictor variables; liquidity risk, bank size and bank capital adequacy. The regression analysis was executed at a significance level of 5%. The critical value obtained from the F – table was measured against the one acquired from the regression analysis.

The study obtained the model summary statistics as shown in table 4.6 below.

**Table 4.6: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .514[a] | .264 | .221 | .012631 | 1.963 |

a. Predictors: (Constant), Bank size, Capital adequacy, Liquidity risk

b. Dependent Variable: Stock returns

**Source: Research Findings (2018)**

R squared, being the coefficient of determination shows the deviations in the response variable that's as a result of changes in the predictor variables. From the outcome in table 4.6 above, the value of R square was 0.264; a discovery that 26.4 percent of the deviations in stock returns of commercial banks is caused by changes in liquidity risk, bank size and bank capital adequacy. Other variables not included in the model justify for 73.6 percent of the variations in stock returns of the quoted commercial banks. Also, the results revealed that there exists a strong relationship among the selected independent variables and the stock returns as shown by the correlation coefficient

(R) equal to 0.514. A durbin-watson statistic of 1.963 indicated that the variable

residuals were not serially correlated since the value was more than 1.5.

**Table 4.7: Analysis of Variance**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | .003 | 3 | .001 | 6.105 | .001[b] |
| | Residual | .008 | 51 | .000 | | |
| | Total | .011 | 54 | | | |

a. Dependent Variable: Stock returns

b. Predictors: (Constant), Bank size, Capital adequacy, Liquidity risk

**Source: Research Findings (2018)**

The significance value is 0.001 which is less than $p=0.05$. This implies that the model

was statistically significant in predicting how liquidity risk, bank size and bank capital

adequacy affects the quoted commercial banks' stock returns.

Coefficients of determination were used as indicators of the direction of the

association between the independent variables and the commercial banks' stock

returns. The p-value under sig. column was used as an indicator of the significance of

the association between the dependent and the independent variables. At 95%

confidence level, a p-value of less than 0.05 was interpreted as a measure of statistical

significance. As such, a p-value above 0.05 indicates that the dependent variables

have a statistically insignificant association with the independent variables. The results are indicated in table 4.8

**Table 4.8: Model Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.121 | .039 | | -3.124 | .003 |
| | Liquidity risk | -.003 | .002 | -.158 | -1.299 | .200 |
| | Capital adequacy | .001 | .007 | .024 | .200 | .842 |
| | Bank size | .020 | .005 | .503 | 4.161 | .000 |

a. Dependent Variable: Stock returns

**Source: Research Findings (2018)**

From the above results, it is evident that bank size produced positive and statistically significant values for this study (high t-value, $p < 0.05$). Liquidity risk produced negative but statistically insignificant values for this study while capital adequacy produced negative but statistically insignificant values for this study..

The following regression equation was estimated:

$Y = -0.121 + 0.020X_1$

Where,

$Y$ = Stock returns

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$X_1$= Bank size

On the estimated regression model above, the constant = -0.121 shows that if selected dependent variables (liquidity risk, bank size and bank capital adequacy) were rated zero, the commercial banks' stock returns would be -0.121. A unit increase in bank size will cause an increase in stock returns by 0.020. Liquidity risk would lead to a negative but insignificant effect on stock returns while capital adequacy would lead to an insignificant positive effect.

## 4.7 Discussion of Research Findings

The researcher aimed at determining the association between liquidity risk and stock returns of commercial banks listed at the NSE. Liquidity risk in this study was the independent variable in this study and was measured by the ratio of customer deposits to gross loans. The control variables were firm size as measured by natural logarithm of total assets and capital adequacy as measured by ratio of loans and advances to assets total per year. Stock returns was the dependent variable which the study sought to explain and it was measured by change in stock price.

The Pearson correlation coefficients between the variables revealed that liquidity risk has a negative but statistically insignificant correlation with the commercial banks' stock returns. It also revealed that a positive and significant correlation exists between bank size and stock returns of commercial banks quoted at the NSE. Capital adequacy exhibited a weak positive and insignificant association with stock returns of Kenyan commercial banks.

The model summary revealed that the independent variables: liquidity risk, bank size

and bank capital adequacy explains 26.4% of changes in the dependent variable as depicted by $R^2$ value meaning this model doesn't include other factors that account for 73.6% of changes in the commercial banks' stock returns. The model is fit at 95% level of confidence since the F-value is 6.105. This shows that the overall multiple regression model is statistically significant and is an adequate model for predicting and explaining the influence of the selected independent variables on the quoted commercial banks' stock returns.

The results concur with Maaka (2013) who conducted a study on the relationship between liquidity risk and financial performance of Kenyan commercial banks. The study used correlation research design in which data was collected from financial statements of 33 Kenyan banks over a five-year period (2008- 2012). Multiple regression analysis was used and the study's findings indicated that the commercial banks' profitability in Kenya is negatively influenced by increases in liquidity gap.

The study disagrees with Nyongesa (2016) who sought to determine the association between liquidity risk and Kenyan commercial banks' financial performance. The descriptive research design was employed for the study. The target population constituted all commercial banks that were in operation between the time frame January 2011 and 31st December, 2015. The data was analyzed using descriptive statistics, correlation and regression analysis as these are conventionally approved tools for descriptive research designs. The findings revealed that roughly 24.5% of the differences in return on assets of commercial banks over the duration of the study were accounted for by variation in their capital adequacy, management efficiency,

liquidity risk and asset quality. The study concludes that liquidity risk has a significant influence on the financial performance of Kenyan commercial banks.

# CHAPTER FIVE:

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter shows the summary of research findings, the conclusions made from the results, and the recommendations for policy and practice. The chapter also discusses a few limitations encountered as well as suggestions for future research.

## 5.2 Summary of Findings

The aim of the study was to examine the impact of liquidity risk on the Kenyan bank's stock returns. The independent variables for the study were liquidity risk, bank size and bank capital adequacy. A descriptive cross-sectional research design was employed in the study. Secondary data was obtained from CBK and SPSS software used in analyzing it. The study used annual data for 11 commercial banks listed at the NSE covering a period of five years from January 2013 to December 2017.

From the results of correlation analysis, liquidity risk was found to have a negative but statistically insignificant correlation with the commercial banks' stock returns. The study also found out that a positive but insignificant correlation exists between capital adequacy and stock returns of commercial banks while firm size exhibited a positive and significant association with stock returns.

The co-efficient of determination R-square value was 0.264 which means that about 26.4 percent of the variation in stock returns of the quoted commercial banks can be explained by the three selected independent variables while 73.6 percent in the

variation of stock returns was associated with other factors not covered in this research. The study also found a strong correlation between the independent variables and the commercial banks' stock returns (R=0.514). ANOVA results indicate that the F statistic was at 5% significance level with a p=0.001. Therefore the model was fit in explaining the association between the selected variables.

The regression results show that when all the independent variables selected for the study have zero value, the stock returns of commercial banks will be -0.121. A unit increase in bank size will result in an increase in stock returns by 0.020. Liquidity risk would lead to a negative but insignificant effect on stock returns while capital adequacy would lead to an insignificant positive effect.

## 5.3 Conclusion

It can be concluded from the findings that the quoted commercial banks' stock returns is significantly affected by bank size. The study therefore concludes that a unit increase in bank size causes a significant increase in stock returns. The study found that liquidity risk and capital adequacy are statistically insignificant determinants of stock returns and therefore this study concludes that these variables do not influence to a large extent the Kenyan commercial bank's stock returns.

This study concludes that independent variables selected for this study; liquidity risk, bank size and bank capital adequacy influence to a large extent stock returns. Thus, it can be concluded that these variables greatly influence stock returns of commercial banks as revealed by the p value in anova summary. The fact that the three independent variables explain 26.4% of changes in stock returns imply that the

variables not included in the model explain 73.6% of changes in quoted commercial banks' stock returns

Results disagree with Otieno, Nyagol, and Onditi (2016) who conducted an empirical study with an aim of analyzing the link between liquidity risk management and financial performance of microfinance banks (MFBs) in Kenya. Longitudinal research design using panel data between the time frame 2011 and 2015 was utilized. Target population comprised 12 licensed MFBs. The desired sample size of 6 MFBs for the study was derived using purposive sampling. Secondary data was retrieved from MFBs financial reports using document analysis guide. It was concluded from the study that a significant association between liquidity risk management and performance and that liquidity risk management positively influences MFBs' performance.

## 5.4 Recommendations

The study established that liquidity risk has a negative but insignificant influence on stock returns. Thus the study wishes to make the following recommendations for policy change: Commercial banks in Kenya should maintain adequate levels of liquidity by ensuring their loans and advances do not exceed set targets as low liquidity will lead to high liquidity risk that can be detrimental to stock returns of the banks. The Kenyan Government through the Central bank should come up with policies that generate a conducive environment for commercial banks to operate in since it will translate to economic growth of the country.

The study found out that a positive relationship exists between stock returns and capital adequacy. This study recommends that a comprehensive assessment of a firm's immediate capital adequacy should be undertaken to ensure that banks are operating at the required levels of capital as bank's capital adequacy has been found to be a significant determiner of stock returns.

The study concluded that there is positive relationship between stock returns and size of a bank. This study recommends that banks' management and directors should aim at increasing their asset base by coming up with measures and policies aimed at enlarging the banks' assets as this will eventually have a direct influence on stock returns of the bank. From the findings of this study, big banks in terms of asset base are expected to perform better than small banks and therefore banks should strive to grow their asset base.

## 5.5 Limitations of the Study

The scope of this research was for five years 2013-2017. It has not been determined if the results would hold for a longer study period. Furthermore it is uncertain whether similar findings would result beyond 2017. A longer study period is more reliable as it will take into account major economic conditions such as booms and recessions.

Data quality is one of the study limitations. From this research, it is hard to conclude whether the results present the true facts about the situation. Data that has been used is only assumed to be accurate. There is also a great inconsistency in the measures used depending on the prevailing conditions. Secondary data was employed in the study which was already in existent as opposed to primary data which was raw information.

The study also considered selected determinants of and not all the factors affecting stock returns of commercial banks mainly due to limitation of data availability.

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more and more data is added to the functional regression model, the hypothesized relationship between two or more variables may not hold.

## 5.6 Suggestions for Further Research

This study focused on liquidity risk and stock returns of commercial banks quoted at the NSE and depended on secondary data. A research study where data collection depends on primary data i.e. in depth questionnaires and interviews covering all the 11 commercial banks listed at the NSE is recommended so as to compliment this research.

The study was not exhaustive of the independent variables affecting stock returns of commercial banks in Kenya and it's recommended that further studies be carried out to incorporate other variables like management efficiency, growth opportunities, industry practices, age of the firm, political stability and other macro-economic variables. Establishing the effect of each variable on stock returns will enable policy makers know what tool to use when controlling the stock returns.

The study concentrated on the last five years since it was the most recent data available. Future studies may use a range of many years e.g. from 2000 to date and this can be help confirm or disapprove this study's results. The study limited itself by focusing on listed banks. The recommendations of this study are that further studies be conducted on other non-listed financial institutions operating in Kenya. Finally, due to the inadequacies of the regression models, other models like the Vector Error Correction Model (VECM) can be applied in explaining the different associations between the variables.

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# APPENDICES

**Appendix 1: Commercial Banks Listed at the NSE**

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