SELECTED FACTORS DETERMINING THE CORPORATE CASH HOLDINGS OF COMMERCIAL BANKS IN KENYA

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A Project submitted to the Institute of Postgraduate Studies of Kabarak University in Partial Fulfillment of the Requirements for the Award of Master of Science in Finance.

KABARAK UNIVERSITY

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DECLARATION

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RECOMMENDATION

To the Institute of Postgraduate Studies:

The research project entitled **"Selected Factors Determining the Corporate Cash Holdings of Commercial Banks in Kenya"** and written by **Noah Kipkemoi Kiplagat** is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the research project and recommend it be accepted in partial fulfillment of the requirements for award of Masters of Science in Finance.

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ABSTRACT

The purpose of this study was to analyze selected factors determining corporate cash holdings of Commercial Banks in Kenya. The specific objectives of the study were; to assess the effect of liquid asset substitutes, net working capital, cash flow volatility, and profitability on the corporate cash holdings of the Commercial Banks in Kenya. The study was based on the following theories; Trade-off Theory, Free Cash Flow Hypothesis and the Pecking Order Theory. The study target population comprised of all the 42 Commercial Banks registered and licensed to operate in Kenya as at 31st December 2018. This study took a census of the 34 Licensed Commercial Banks in Kenya which operated between the years 2009 to 2018 (a period of 10 years). The researcher collected secondary data from the audited financial reports of the sampled 34 Licensed Commercial Banks in Kenya. The secondary data was panel in nature covering the period of 10 years and was collected using data caption sheet in Appendix I. Both descriptive and inferential statistics were used to analyze the data (mean, standard deviation, maximum, and minimum) (both bivariate and multivariate regression analysis). The study found that Liquid Asset Substitutes had a substantial impact on Commercial Banks' Corporate Cash Holdings in Kenya (=-0.8098, $p<0.05$). Second, the study found that Net Working Capital had a significant impact on Licensed Commercial Banks' Corporate Cash Holdings in Kenya (=-0.1380496, $p<0.05$). Further studies revealed that Cash Flow Volatility had a substantial impact on Commercial Banks' Corporate Cash Holdings in Kenya (=-0.0755294, $p<0.05$). Profitability, on the other hand, had no significant impact on Commercial Banks' corporate cash holdings in Kenya ($p=0.796>0.05$). Finally, the study found that government taxation had no effect on the relationship between the drivers of the selected parameters and corporate cash holdings of Kenyan commercial banks. The study concluded that three of the four factors determining corporate cash holdings of Licensed Commercial Banks in Kenya, namely Liquid Asset Substitutes, Net Working Capital, and Cash Flow Volatility, had a significant effect on corporate cash holdings of Licensed Commercial Banks in Kenya, based on statistical evidence. The study therefore recommends that the Licensed Commercial Banks in Kenya should be keen on these three factors and develop managerial procedures that can prudently manage the banks Liquid Asset Substitutes, Net Working Capital and Cash Flow Volatility which will ensure efficient overall cash management.

Key Words: Cash Holding, Liquidity, Profitability, Net Working Capital, Cash Flows.

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LIST OF ABBREVIATIONS AND ACRONYMS

BCBS	Basel Committee on Banking Supervision
CBK	Central Bank of Kenya
CEO	Chief Executive Officer
CMA	Capital Market Authority
KAM	Kenya Association of Manufacturers
KSE	Karachi Stock Exchange
MFS	Mobile Financial Services
NPV	Net Present Value
OLS	Ordinary Least Squares
R&D	Research and Development
SMEs	Small and Medium-size Enterprises
UK	United Kingdom
ROA	Return on Assets
VIF	Variance Inflation Factor
EMU	Economic and Monetary Union
CFO	Chief Financial Officer
NSE	Nairobi Securities Exchange
ROAA	Return on Assets Average
NIM	Net Interest Margin
SCP	Structure Conduct Performance
ROE	Return on Equity
NWC	Net Working Capital

OPERATIONAL DEFINITIONS OF TERMS

Cash Flow Volatility: According to Bates, Kahle and Stulz (2009), cash flow volatility measures the firm's cash flow risk and uncertainty. For this study, cash flow volatility is measured by cash flows per share.

Cash: According to Damodaran (2001), cash owned by a company can be defined as operating cash which consists of cash in hand and investment without interest or with interest below market value. For empirical test, this study will use the ratio of cash and cash equivalents to total assets to proxy corporate cash holdings. Cash equivalents are considered for they represent assets easily convertible to cash within the shortest time possible with minimal cost of conversion.

Commercial Banks: This is a type of bank that is involved in the provision of services such as deposit taking, offering basic investment products and extending both business and personal loans (Mardonakulovich, 2020). This research empirically and comparatively examines how corporate cash holding in commercial banks is affected by factors like liquidity, net working capital, profitability and cash flow volatility affect.

Corporate cash holdings: These are the assets that the commercial banks hold in ready cash, as opposed to property, shares and bonds (Gill and Shah, 2012).

Liquidity Asset Substitutes: Chireka & Fakoya (2017) defines liquid asset substitutes as the ratio of net working capital, less total assets. This is the same ratio which is going to be adopted in this study.

Net Working Capital: Net working capital is the aggregate amount of all current assets and all current liabilities. It is used to measure the short-term liquidity of a firm and to obtain a general impression of the ability of a firm's management to utilize its assets in an efficient manner (Hill, 2010). For the purpose of this study, net working capital is going to be measured by the sum of cash and cash equivalents, marketable investments, trade accounts receivable and inventory less trade accounts payable.

Profitability: Profitability is defined as the ability to make profit from all the business activities of a firm, enterprise or organization; it shows how efficiently a management can make profit by using all available resources in the market. It is the ability of a given investment to earn return from its use (Altavilla, 2018). There are several measures of profitability. In this study, the measure of profitability which is adopted is the return on assets (ROA).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Corporate cash holdings are based on the fact that it makes up a large component of most firms' assets. According to Ozkan and Ozkan (2004), 14 percent of a company's assets should be in cash, while Ditmar, Mahrt-Smith, and Serveas (2003) found that 13 percent of a company's assets should be in cash. In their analysis, Lee and Lee (2010) found that enterprises held 12 percent of their net assets in cash, while Kachleva and Lins (2007) found the highest proportion at 16 percent. Secondly; management gets quick access to cash balances and has the last say on how they are spent. Additionally, cash amounts fluctuate over time, necessitating the need to plan for the minimum balances required to meet transactional needs despite the volatility (Dittmar and Mahrt-Smith, 2007).

The banking industry, which is a major source of money for the economy, serves as the lifeblood of modern trade and economic progress all over the world (Ongore & Kusa, 2013). Commercial banks, by assisting in the continual channeling of cash from depositors to investors, clearly play a critical role in the allocation of economic resources in countries. Commercial banks are also the conduits via which the central bank of the economy transmits effective monetary policy, hence they are considered to share responsibility for the country's economic stabilization (Siddiqui & Shoaib, 2011).

The soundness of a country's banking industry is extremely important to the economy's overall health (Sufian & Chong, 2008). Katrodia (2012) agrees with this assertion and claims that a country's financial industry and economy are inextricably linked. On the other hand, it is vital to remember that commercial banks' soundness is mostly determined by their financial performance, which is typically used to determine a bank's strengths and weaknesses (Makkar & Singh, 2013).

1.1.1 Global Perspective of Corporate Cash Holding

Liquid assets (such as Treasury securities) pay such a low return, holding cash can therefore be costly for businesses. A company produces opportunity costs by investing in cash and marketable securities instead of more productive assets. Additionally, these monies may have been used to boost shareholder wealth by boosting dividends or acquiring another company. Firms keep cash for a variety of reasons. Various firms and industries have varying amounts of cash on hand. The cash holdings of a firm entity can be used as a metric for success. Holding cash, according to Gama (2012), is a managerial decision. Growing businesses compete in a fast-paced market. These companies must redirect their cash into new investment projects in order to maintain their competitive advantage.

Tahir (2016), proposed two primary benefits from cash allocations in his initial documentation on corporate cash holdings. The first is the reduction of transaction costs, as a company would not have to liquidate any of its assets to make payments, and cash acts as a valuable buffer against future risks. According to Chireke & Fakova (2017), corporate cash holdings are on the rise, and as a result, stakeholders need to understand what drives the company's cash holding practices, as well as whether there are only benefits to be gained from stockpiling cash reserves.

Cash allocations provide no advantages or costs; corporations are not required to keep cash in a financial environment without taxes, agency expenses, or information asymmetry. If a corporation has sufficient domestically generated cash, it will struggle to acquire external borrowing at acceptable rates. According to Stiglitz (1974) and Opler, Pinkowitz, Stulz, and Williamson, corporate cash holding decisions do not affect the firm's value or shareholder wealth (2001). Raising external capital is, however, more

expensive for firms than raising cash from within the company due to the imperfect nature of markets.

Bank managers with surplus cash have a lot of leeway in how they use it. They can use it to support new capital expenditures, invest in Research and Development, explore acquisitions, pay dividends, repurchase shares, decrease debt, or simply keep it in the bank (Powell, 2018). Managers may hoard cash for reasons other than the shareholders, according to Tregenna (2009), when managers have surplus cash, they will avoid raising funds externally, which will lead to more stringent examination of external capital markets. As a result, the executives will utilize the extra revenue to pursue their own spending goals.

Internally generated money is less expensive than monies obtained from other sources. As a result, companies with enough cash on hand can invest in good investment opportunities at a cheap cost of capital (Chireka & Fakoya, 2017). Cash reserves provide businesses with much-needed financial independence, allowing them to pursue their strategic goals with minimal external intervention (Boubaker, Derouiche & Nguyen, 2015).

Firms with a lot of investment prospects have an incentive to have more cash on hand in order to stay competitive in their market. Excess cash on hand may inhibit competition in a company's product market (Baskin, 1987). Furthermore, enterprises with a plethora of investment options and greater investor knowledge asymmetry will keep more cash on hand to avoid the agency difficulties of under-investment (Opler, 2001).

Agency issues between debt holders and shareholders raise the cost of issuing new debt and may compel businesses to skip profitable investment projects. As a result, highly leveraged enterprises face a greater under-investment problem, and managers avoid the

agency costs of debt by choosing low debt levels or hoarding more cash (Baum, 2006). The challenge of free cash flow for agencies is more significant for companies with a low market-to-book ratio. By aligning the interests of managers and shareholders, increasing managerial ownership levels may minimize the agency cost of managerial discretion.

The growth in abnormal cash holdings of US corporations is not materially different from the increase in cash holdings of overseas firms, according to Pinkowitz Stulz and Williamson (2013). Cash holdings increase the most for highly profitable companies over that time period, which is consistent with the belief that these companies have limited investment alternatives. Recent research has looked into how the global financial crisis has influenced companies' short-term management strategies. Duchin, Ozbas, and Sensoy (2010), for example, discover that during a global financial crisis, U.S. corporations burn through cash holdings, and that post-crisis investment is positively associated to cash reserves. When capital markets tighten, enterprises are more likely to postpone or cancel investment plans; this is according to Campello, Graham, and Harvey (2010). To deal with tightening lending conditions and avert a financial crunch, cash-strapped businesses have had to decrease Research and Development, employment, and capital spending, according to both reports (Pinkowitz et al., 2013).

Managers may choose to pursue dubious purchases, resulting in the waste of free cash flows; Harford (1999) discovered that cash-rich companies are more inclined to pursue acquisitions, and cash-rich companies with a higher chance of agency difficulties, as measured by poor managerial ownership, account for the majority of acquisition operations.

1.1.2 Kenya Perspective of Corporate Cash Holding

Kabui (2003), investigates the factors that influence cash holding on the Nairobi Securities Exchange (NSE) in order to construct firm-specific models. In the secondary study, Barasa (2018), looked at the determinants of corporate cash holding of non-financial firms listed on the NSE and discovered that market to book value has a negligible positive relationship with cash holding, with the majority of respondents in the primary study also dismissing the constructs that market to book ratio is positively related. Mureithi, (2003) investigated the determinants of corporate cash holdings in Kenyan quoted companies and discovered that growth, cash flow unpredictability, earnings, size, and the maturity structure of long-term debt all have a substantial impact on corporate cash holdings. Liquidity, leverage, and cash flows, on the other hand, have no bearing on cash flows. None of these studies looked at the impact of liquid asset substitutes, net working capital, cash flow volatility, and profitability on Licensed Commercial Banks' corporate cash holdings in Kenya, which was the major goal of the current study.

1.1.3 Commercial Banks in Kenya

Kenya's financial system is structured along traditional principles. It consists of the Kenyan Central Bank, commercial banks and non-financial institutions licensed under the Banking Act, building societies, development finance companies funded by the government and external development agencies, a Post Office Savings Bank, a National Social Security Fund, insurance companies, pension funds, and a securities exchange (Chireka, 2017).

Kenyan commercial banks play an important role in economic growth by making cash accessible for investors to borrow and through deepening the financial system (Ojala, 2012). In Kenya, financial inclusion has increased, with 77.0 percent of the population

living within 3 kilometers of a financial service access point in 2016, up from 59.0 percent in 2013. This has been aided by digitization, with Mobile Financial Services (MFS) emerging as a superior method of obtaining financial services in 2016. (Cytonn Investments, 2017).

According to a report by Cytonn Investments (2017), Kenya now has 38 commercial banks, down from 42 previously, this is due to the acquisition of Giro Commercial Bank by I&M Holdings and Diamond Trust Bank's acquisition of Habib Bank Limited Kenya, while Chase Bank and Imperial Bank are in receivership. Furthermore, the Central Bank of Kenya regulates all commercial banks, according to the Cytonn Investment (2016) report (CBK). Oversight of listed banks is provided by the Capital Markets Authority (CMA). With the CBK, all commercial banks must follow specific prudential standards, such as minimum liquidity ratios and cash reserve ratios.

Cytonn Investments (2016) also believes that Kenya is over-banked, with 42 commercial banks serving over 44 million people, compared to Nigeria's 22 banks serving 180 million people and South Africa's 19 banks serving 58 million people. According to Tayem (2017), the quantity of liquid assets and cash holdings on corporate balance sheets has sparked interest in learning more about a company's motivation for accumulating cash. Because of the high cost of adverse selection, Myers and Majluf (1984), suggest that enterprises experiencing information asymmetries avoid issuing information sensitive securities. Instead, they should keep a reserve of internal funds that can be used when a company's internal finances are depleted.

Liquid assets' ownership is unimportant in a world of perfect capital markets since corporations may readily raise funds to finance their viable investment projects at low transaction costs. As a result, the firm's liquid asset investing maintains the shareholder

wealth maximization philosophy. Firms invest in liquid assets by maintaining particular amounts of cash reserves, according to recent studies (Guizani, 2017). Cash holding has become a major element in the balance sheet of a company and in the problem of optimal capital allowance in a world of growing capital costs and related importance of opportunity cost to have surplus cash (Nandia, 2016).

It is critical to maintain an optimum level of liquidity within an organization in order for operations to run smoothly. Firms require a lot of liquidity for a variety of reasons, including transactional, precautionary, and speculative (Jamil, Anwar, Afzaal, Tariq & Asif, 2016). For many businesses, cash is a critical asset. It is one of the most important figures in the assets section of every company's statement of financial situation. Convertible cash holdings are those that can be converted into cash this means money in your pocket and money in the bank. Market investments, such as money market and treasury notes, are also considered cash holdings (Ali, Ullah & Ullah, 2016). Cash is a critical asset on a company's balance sheet, and it attracts the attention of not just companies, but also investors and financial analysts (Borges, 2016).

Cash provides liquidity to any business and makes it easier to meet a variety of financial obligations. A corporation with insufficient liquid assets will be unable to satisfy its obligations and will be forced to declare bankruptcy. Cash and marketable securities or cash equivalents are the most prevalent types of cash holdings (Opler, 1999). Cash equivalents are current assets that can be turned into cash in a very short period of time, giving them a high level of liquidity (Ferreira & Vilela, 2004). A company's cash holdings decision-making is a top priority for its management. This is linked to the company's everyday operations, investments, financing practices, dividend payments, and any other activity (Byoun, 2011).

In a study on the impact of macroeconomic variability on cash holdings, Baum, Caglayan, Ozkan, and Talavera (2006), established that when macroeconomic conditions are variable, managers are more conservative, resulting in increased cash holdings. They show a link between economic uncertainty and cash holdings that is negative. Private enterprises keep less cash than public firms, according to Garca-Teruel and Martnez-Solano (2008). Recent data, combined with empirical evidence, has highlighted the necessity for more consideration of corporate cash holdings (Kariuki, Namusonge & Orwa, 2015). Leverage, liquidity, cash flows, net working capital, cash flow volatility, company size, and profitability are all projected to be positively associated to commercial banks' corporate cash holdings in Kenya.

1.2 Statement of the Problem

Corporate cash holding in commercial banks is a critical component of a country's economy because it allows firms and companies to ensure and define their liquidity capability. Firms are able to respond to specific changes in cash flow in order to fund their everyday operations as well as any long-term financial goals they may choose to pursue. There has been little research into the factors that influence corporate cash holding among Kenyan commercial banks, and it is critical that this be done.

The Commercial Banks in Kenya have been divided into three levels by the Central Bank of Kenya (CBK) this is based on their market share, asset base, and quantity of client deposits. Tier 1 banks have assets in the hundreds of billions of dollars and millions of depositors. The asset bases of these institutions are so large that any failure would be devastating for our economy as a whole. Tier 2 banks are medium-sized financial institutions. Tier 1 owns 49.9% of the market, while Tier 3 owns 8.4%. (CBK, 2020). Appendix 2 is a list of Kenyan Commercial Banks organized by Tier.

The majority of earlier research in the domain of cash holding was focused on data from wealthy countries. Ozkan (2000), conducted research in developed markets; however, the application of his findings in developing markets such as Kenya is unknown. Mureithi (2003) used secondary data gathered from the companies' yearly financial statements to investigate the determinants of corporate cash holding for listed Kenyan enterprises. Mureithi (2003) discovered that growth, cash flow fluctuation, earnings, business size, and long-term loan maturity structure all had a substantial impact on cash holdings.

One of Kenyan Commercial Banks' statutory requirements is to maintain a minimum liquidity requirement of 20%. The banking sector's overall liquidity ratio increased to 54.6 percent in Q4'2020, up from 53.1 percent in Q3'2020, driven by a 3.5 percent growth in total liquid assets versus a 1.9 percent increase in total short-term liabilities (CBK, 2020). This data shows that Commercial Banks' cash holdings are higher than the CBK's stated level. The causes determining the large cash and cash equivalent holdings by Kenya's Licensed Commercial Banks had not been fully examined, which was the impetus for this study. The current study focused on the factors that influence cash holdings rather than the reasons for maintaining cash. As a result, the current study was carried out to fill in the gaps that existed in terms of corporate cash holdings by analyzing the selected elements that determine corporate cash holdings of Kenyan Commercial Banks.

1.3 Research Objectives

1.3.1 General Objective

The general objective for this study was to analyze the selected factors determining the corporate cash holdings of Licensed Commercial Banks in Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were to;

i. Investigate how liquid asset substitutes determine the corporate cash holdings of Commercial Banks in Kenya.

ii. Evaluate how the net working capital determines the corporate cash holdings of Commercial Banks in Kenya.

iii. Examine how cash flow volatility determines the corporate cash holdings of Commercial Banks in Kenya.

iv. Assess how profitability determines the corporate cash holdings of Commercial Banks in Kenya.

v. Analyze the moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

1.4 Research Hypotheses

The study tested the following null hypotheses:

$H0_1$: There is no statistically significant effect of liquid asset substitutes on the corporate cash holdings of Commercial Banks in Kenya.

$H0_2$: There is no statistically significant effect of net working capital on the corporate cash holdings of Commercial Banks in Kenya.

$H0_3$: There is no statistically significant effect of cash flow volatility on the corporate cash holdings of Commercial Banks in Kenya.

$H0_4$: There is no statistically significant effect of profitability on the corporate cash holdings of Commercial Banks in Kenya.

$H0_5$: There is no statistically significant moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

1.5 Justification of the Study

Commercial banks are increasingly being viewed as a critical component of the modern economy, leading the financial industry in developing countries. This is because commercial banks are seen as the primary drivers and participants in innovative operations, this is the case. Commercial banks are rapidly expanding in Kenya, and if well-managed, can be a source of competition, job development, and human resource flexibility (Ndungu, 2014). Furthermore, cash holding has become a critical aspect in the rapid rise of performance.

This research creates an understanding and a model for assessing corporate cash holdings that will allow Commercial Bank management, policymakers, practitioners, and students to analyze their contributions in terms of their performance. There is a greater difficulty nowadays, such as fierce rivalry and ever-changing processes, which generate differential benefits in terms of company cash holding. Given that banks' principal duty is financial intermediation among institutions and individuals, including other corporate who intermediate their cash transactions with commercial banks, the current study selected to focus on corporate cash holding performance in Kenyan commercial banks.

1.6 Significance of the Study

The decision on corporate cash holdings is a crucial one in prudent financial management, and it should be guided by an appropriate policy framework. The findings of the current study, which looked at a few factors that influence Licensed Commercial Banks' corporate cash holdings in Kenya, will help the Central Bank of Kenya evaluate

its policy on the practice of corporate cash holdings by Licensed Commercial Banks in Kenya. This is because Licensed Commercial Banks' corporate cash holdings are crucial to many of the commercial banks' middlemen and investors. The findings from the study will be valuable to investors, stockbrokers, securities analysts, and others in analyzing their particular policies on which commercial banks they interact with based on corporate cash holdings practiced by these Kenyan banks.

Individual commercial banks would benefit greatly from the findings of the study on chosen factors determining corporate cash holdings of Kenyan commercial banks in generating optimal cash holding levels informed by how each of the selected criteria connected to corporate cash holdings. Researchers and academicians in finance, banking, and actuarial science will benefit from the study since it will provide useful insights into the factors affecting Licensed Commercial Banks' corporate cash holdings.

1.7 Scope of the Study

The study focused on selected factors that influence Commercial Banks' corporate cash holdings in Kenya. Liquid asset substitute, net working capital, cash flow volatility, and profitability of Kenya's licensed commercial banks were among the study's independent factors. The reliable variable was Licensed Commercial Banks' cash and cash equivalents, while the moderator variable was government taxation policy. Although there are numerous metrics for determining a bank's profitability, the current study employed Returns on Asset (ROA) as a metric because corporate cash holdings are asset-oriented. The study took a census of the licensed Commercial Banks in Kenya for the period of 10 years (2009-2018). The study was based on panel data covering the 10 years period.

1.8 Limitations and Delimitations of the Study

The study was limited by the unwillingness of bank managers to supply the necessary data for analysis. This was particularly true for institutions that were experiencing financial difficulties and were being investigated by the Central Bank of Kenya. When some banks were closed or put into receivership, some data was unavailable for a period of time. The delimitation was carried out using data provided by the Kenyan Central Bank, which served as the supervisory authority.

Data from secondary sources was used. This data is historical; therefore it may not reflect the research's actual goals, which are to accurately anticipate the effects of firm-specific factors on commercial banks' financial performance in Kenya. Several scholars have questioned the potential of secondary data to reflect current events. Only four independent variables were included in this study (profitability, cash flow volatility, net working capital and liquidity asset). However, there are a number of elements that influence commercial banks' financial performance that were not considered in this study and may be important in improving the findings' quality. The limitations of the study were that different factors had different impacts on the various banks. Also, the secondary data collected from the central banks could not be verified independently and hence future research should give much more focus on primary data. Finally, the study relied on publicly available data since banks could not disclose a lot of information due to sensitivity over certain issues.

Another predicted study limitation was the inability to obtain some sought data owing to confidentiality concerns. The researcher set a limit on this by sending a letter to the bank managers indicating unequivocally that the data was to be used just for academic purposes in order to obtain the information. Alternatively, the researcher relied on bank

supervision reports provided by the Central Bank of Kenya's bank supervision division, which were deemed sufficient for the study.

1.9 Ethical Considerations

The term "ethics" refers to a set of principles that can drastically alter past decisions and actions. Ethics are rules or standards of conduct that influence moral decisions about our actions and interactions with others, and as such, all participants in research should act ethically, (Saunders, 2003). Respondent privacy, voluntary participation and the opportunity to withdraw, consent and the possibility of deceit, confidentiality of data provided by persons or named participants, and anonymity, (Mathooko, 2011).

One of the most important ethical issues in this study was deceit, in which data was collected with full information that it would only be utilized for academic purposes. During the data collection and analysis, openness and honesty were noticed. In the current study, ethical considerations were followed, such as obtaining a Research Permit from the National Commission for Science, Technology, and Innovation and adhering to its terms, conditions, and criteria. These features added to the study's worth and improved its reliability and validity.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical and empirical literature on the corporate cash holdings and its determinants on commercial banks in Kenya. It identifies and explores the theories that inform the study. It also reviews what has been done by other researchers including the methodologies used leading to identification of research gaps. Further, the chapter provides the conceptual framework in line with the study objectives.

2.2 Theoretical Review Theory

Researchers in Corporate Finance have suggested three theoretical models helpful in the identification of firm characteristics that determine corporate cash holding decisions. The framework which explains the determinants of corporate cash holdings is the Trade-off theory, Free Cash Flow Hypothesis and the Pecking Order theory.

2.2.1 Trade-off Theory

Miller and Orr (1966), define the optimal cash holding levels by trading off the marginal cost of holding liquid assets with its marginal benefits. This means that companies have two motives of cash holdings: transactional cost motive and precautionary motive. In relation to the transactional cost motive, Trade-off theory suggests that firms hold cash because raising funds in capital markets is costlier than having retained earnings. These cost components imply that there is an ideal quantity of cash to be raised, motivating a company to have cash on hand as a buffer. External funding, according to Ozkan and Ozkan (2004), entails both fixed and variable costs based on the quantity of capital raised.

Information asymmetries and the opportunity cost of foregone investments are part of the preventive purpose of cash holdings. Corporations would accumulate capital to meet unanticipated cash deficits if the adverse selection costs of financial crisis are very high. They would also use the collected cash to fund their projects with a good net present value. The Trade-off hypothesis can be used to explain corporate cash holding decisions in Kenyan commercial banks due to current market inefficiencies and high bankruptcy costs that developing firms confront.

The trade-off model is frequently used to determine the optimal amount of cash that a company should hold (Ozkan and Ozkan, 2004). The opportunity cost of capital arises from low returns on liquid assets relative to other investments with equal degrees of risk, resulting in the marginal cost of cash holdings (Gao et al., 2013). Empire building and managerial benefits may also be a worry for shareholders, as Dao (2018) points out, when directors have access to a big amount of internal cash. The marginal benefits of cash holdings include reducing the risk of financial crisis, supporting an organization's best investment program, and avoiding the expenses of disposing current assets or obtaining external finance (Pinkowitz et al., 2006).

Based on the trade-off theory, Vo (2018) investigates the topic of corporate cash holdings in US enterprises. Their studies revealed that a firm's features play a role in influencing its cash holding levels. According to Peterson and Rajan (2003), the cost of getting cash through borrowing is unrelated to the loan size, meaning that the borrowing cost is a set sum. As a result, the cost of borrowing for small businesses will be higher than for large businesses. Berger and Udell claim that (2002), Small businesses are compelled to rely on insider finance or short-term financing options to raise capital. Large corporations, on the other hand, perceive the cost of debt and equity issuance to be insignificant.

By striking a balance between marginal gains and marginal costs of cash holding, an organization can successfully discover the optimum cash holding level using the trade-off approach (Opler et al., 1999). Capital markets or asset liquidation are the most popular sources of financing for firms that require cash to manage their present expenses. However, due to unequal information, the financial market is flawed, Access to capital markets is often difficult for businesses, and they may incur large financial costs as a result. Cash holdings are viewed as a buffer between the firm's uses and sources of finances in the trade-off model.

2.2.2 Free Cash Flow Hypothesis

In this hypothesis, Kadioglu (2017) denies the existence of target cash levels. According to the hypothesis, organizations that operate in areas with limited development potential and generate substantial quantities of free cash flows are more likely to consume private benefits by managers, resulting in agency conflicts between managers and shareholders. Cash holdings are regarded as free cash flows, according to Harford (1999), because they are exploited to support management's own interests at the expense of shareholders. As a result of the free cash flow concept, corporations are more likely to cash stockpile because it enhances the assets under their control. The managers may simply sidestep the capital markets with the cash stockpile, so avoiding transparency obligations on potential investments.

Managerial selfishness, according to Thwanatawe (2011), includes extravagant expenditure on luxury offices, ill-advised mergers and acquisitions. Jensen (2001) claims that debt can help agencies save money. Unless the debt is due for renewal or the firm fails to meet the loan's contractual obligations, debt holders have no influence in the company's activities. Debt is a powerful type of commitment in the form of a contract

that may include collateral and binds managers to payment terms, pushing them to make sound investment decisions.

2.2.3 Pecking Order Theory

The study of Myers and Majluf are the foundations of the pecking order theory (1984). Firms have an order when deciding which funding to use on investments, according to the notion. Firms seek to finance their investment projects with internally produced funds. Even if there were a fixed dividend policy in place, they would go ahead and modify their dividend levels. Later, the companies would trade liquid assets and, as a last option, use external finance.

According to the pecking order concept, corporations should use retained earnings as their primary source of funding to reduce information asymmetry and other finance expenses. This is followed by safe and risky loans, and if no other options are available, the company may resort to issuing equity (Myers & Majluf, 2004). According to the pecking order hypothesis, providing fresh equity is exceedingly expensive for enterprises due to information asymmetry, hence equity is considered as the least favorable financing alternative (Pinkowitz, Stulz and Williamson, 2006). This explains why companies prefer to finance their investments using retained earnings first, then debt, and ultimately equity. When a firm becomes bankrupt, the debtors are the first to be examined for reimbursement, followed by the shareholders. When one side in transaction process lacks information compared to the other, this is known as information asymmetry. This gap in business knowledge is caused by market inefficiencies, as market actors do not have access to all information that could influence decision-making.

The pecking order hypothesis, also known as the financing hierarchy model and is the polar opposite of the trade-off model, according to Opler, Pinkowitz, Stulz, and

Williamson (1999). The pecking order hypothesis assumes that substantial cash reserves in profitable enterprises lead to financial slack and does not adopt an ideal level of cash holdings (Faulkender & Wang, 2006). Cash is also seen as a buffer between investment demands and cash on hand (Ferreira & Vilela, 2004). When retained earnings are inadequate to fund new investments, companies turn to cash reserves and new debt, respectively. Using the perspective of the pecking order theory, a number of company factors that influence the level of cash holdings can be discovered, much as with the trade-off model.

Cash holding levels in a company are determined by investment and finance decisions, according to Opler (1999). Retained earnings are used to fund profitable investment projects, debt repayment, and the accumulation of free cash flows as cash balances by businesses. Firms would also use cash reserves as a cushion to avoid having to borrow money from outside sources. External finance is required if cash is insufficient to cover investments and debt service costs. This means that cash inflow and outflow influence cash holding levels, implying that there are no optimal cash holding levels.

2.3 Empirical Review

Previously, many academics have documented corporate cash holdings. According to the literature, enterprises must maintain certain target cash levels in order to meet their day-to-day liquidity needs. As a result, managers must guarantee that certain levels are maintained. In this context, the following sections list prior studies on the determinants of corporate cash holdings that have been done by various scholars. The majority of empirical studies show that profitability has a variety of consequences on commercial banks' corporate cash holdings. Keynes (1936) outlined three reasons why businesses might need to keep cash on hand. The preventive objective or motivation, the transaction motive, and the speculative objective are the three aims or motives.

The precautionary objective states that corporations retain cash on hand to cover potential future financing needs, whereas the transaction aim states that companies keep cash on hand to meet their everyday operations while also lowering the cost of selling their assets. Companies store cash to earn interest on short-term interest-bearing assets, but this liquidity could also be utilized to invest in more profitable ventures in the long run, according to the speculative motive (Al Zoubi 2013). Increased cash holdings are linked to higher profitability, according to research (Boriçi and Kruja, 2016; Alaba, 2013; Lu & Tsaic, 2010). The more profit a company makes, the more cash it keeps on hand. Nguyen (2005) studied the concept that cash balances have a precautionary motivation and are used to reduce operating earnings volatility.

From 1993 to 2007, Megginson and Wei (2010) investigated the drivers of cash holdings and the value of cash in China's share-issue privatized enterprises. They also discovered that more profitable businesses have more cash on hand, according to regression analysis. This result was consistent with the findings of Naoki (2012) and Sher (2014), who claim that Japanese enterprises' cash buildup is attributable to financial flaws mixed with increased corporate profitability. The relationship between profitability (ROA) and cash holding is positive and strong. Tahir, Quddus, Kahnum, and Usman (2015) used pooled ordinary least square regression to investigate the cash holding drivers for making decisions in the Pakistani food business, and found that profitability has a positive significant association with cash holding. This finding was consistent with Drobetz & Gruninger's (2006) findings in Switzerland, which indicated a positive link between operating cash flows and cash reserves.

According to the pecking order theory, highly profitable organizations often have substantial cash reserves for reinvestment, also consistent with earlier studies (Al-Najjar & Clark, 2017; Kim et al., 1998; Manoel et al., 2018). (Al-Najjar & Clark, 2017; Kim et

al., 1998; Manoel et al., 2018). Following by (Ferreira & Vilela, 2004; Opler et al., 1999), corporations utilized to retained earnings to build liquidity and competitive advantage in their operations, that profitability has a favorable effect on corporate cash holdings. When a company's retained earnings are prioritized for debt service, it results in minimal cash on hand (Kim et al., 1998; Lee & Song, 2007). Corporate cash holdings suffer as a result of profitability.

Given that they pay a high information asymmetry cost, high cash flow enterprises usually incur significant costs to obtain capital. As a result, modest cash holdings are given (Myers & Majluf, 1984). Kim et al. (1998) found that, based on the pecking order theory, high cash-flow corporations tended to utilize internal funds on a regular basis. They employ cash to cover an external debt in this situation, resulting in low cash holdings. As a result, we look at the negative relationship. Higher cash flow organizations, on the other hand, seek to hold cash to avoid insolvency or investment company losses. Previous study (Bigelli & SánchezVidal, 2012; Han & Qiu, 2007; Opler et al., 1999; Ozkan & Ozkan, 2004) provided the explanation. The more a company's cash flow fluctuates, the more a company's profits fluctuate. Companies seek to hold more money to avoid potential risks from volatility.

2.3.1 Liquidity Assets Substitutes

The ability of a company to meet its short-term financial obligations is referred to as liquidity. It's the current asset-to-current-liability ratio (Pandey, 2005). “To the extent that liquid assets other than cash can be liquidated in the event of a cash shortage, they can be seen as substitutes for cash holdings,” Ferreira and Vilela (2004) explain. Ozkan and Ozkan (2004) suggest “It is reasonable to assume that the cost of converting non-cashed assets to cash will be higher than the cost of converting cash holdings.” “Firms with sufficient liquid assets may not need to rely on the stock markets to raise financing

when they are cash-strapped." "Liquid assets can alter a firm's optimal cash holdings, because they can be considered replacements for cash," Teruel and Solano (2008) contend.

Tayem (2017) looked at the factors that influence corporate cash holdings in Jordan, a small emerging market with a lot of market frictions. To anticipate the determinants of cash reserves, the researchers used the trade-off financing hierarchy framework and management discretion theory. The study also used other estimation methods to assess the forecasts using a sample of listed non-financial Jordanian enterprises from 2005 to 2013. Cash substitutes have a negative and considerable impact on cash holdings, according to the findings.

Chireka and Fakoya (2017) investigated the factors that influence corporate cash holdings in South African retail enterprises. To explore the links between cash holding levels and the suggested determining factors, the researchers conducted panel data analysis. The data was analyzed using multiple regression analysis. A total of eight factors were investigated to see if they had substantial explanatory power on the companies' cash holding levels. The findings revealed that liquid asset alternatives have a considerable impact on retail enterprises listed on the Johannesburg Stock Exchange's cash holding levels.

Many researches have looked into the relationship between bank liquidity and banking profitability. According to Bourke (1989), banks with a well-diversified lending portfolio produce higher profits and have more liquidity. Liquidity has a beneficial impact on bank profitability, according to Eichengreen and Gibson (2001). Liquidity and profitability have a negative relationship, according to Philip and Thornton (1992), whereas Islam and Nishiyama (2016) claim that liquidity, as measured by total loans to total deposit

ratio, has a positive impact on profitability in the case of net interest margin, but that this relationship is insignificant. In their paper, Tran, Lin, and Nguyen (2016) claim that banks that produce more liquidity earn lower profits. Liquidity management, according to Tran et al. (2016)'s empirical reasoning, is required to achieve larger profits. Bordeleau and Graham (2010) claimed in their study that banks with a higher level of liquid assets are more profitable. They claimed that having more liquid assets reduces a bank's illiquidity and financing costs. In their study, Goddard, Liu, Molyneux, and Wilson (2013) discovered a negative link between bank liquidity and performance.

Liquidity was one of the elements that affected company performance, according to Wu (2007), who investigated capital structure determinants in China. According to Richards and Laughlin (2008), commercial bank authorities expected banks to maintain a specific amount of liquid assets. A bank is liquid if it can create enough cash to pay its financial obligations. When a bank is having financial difficulties, it may decide to take on more debt or sell off its liquid assets. This may give investors the impression that the bank is selling off bad assets, leading in a drop in demand and low prices for liquid assets, resulting in a loss of revenue from the sale of liquid assets. Eljelly (2004) investigated the impact of liquidity on business profitability, finding a positive correlation between liquidity and profitability. Wang (2009) investigated the relationship between firm profitability and liquidity in the steel and aluminum industries, concluding that firm profitability was positively related. Saleem and Ramiz (2011) examined the relationship between liquidity and profitability in 20 businesses. Liquidity and firm profitability were found to have a favorable relationship.

Every financial institution seeks to offer and maintain a particular amount of liquidity on a daily basis since liquidity risk management is a vital activity for them. This liquidity risk is unintelligible in and of itself, but it is possible to mitigate its negative

consequences by implementing a dynamic liquidity risk management strategy (Milos 2014). Liquidity risk is described as the prospect of negative consequences for the financial institution's owners, clients, and other stakeholders if it is unable to meet existing payment obligations in a timely and cost-effective manner without incurring unfavorable losses (Wiley 2014).

Liquidity is defined by the Basel Committee on Banking Supervision (BCBS) as "the ability to fund growth in assets and meet obligations when they become due." Liquidity risk affects banks because they convert liquid deposits (liabilities) into illiquid loans (assets). These are the bank's most important operations, and liquidity risk management's job is to keep them running smoothly. Furthermore, the liquidity position is linked to stakeholders' trust. A bank with low confidence may experience liquidity problems, such as deposit withdrawals (Armstrong 2008, 47). However, no financial institution is immune to liquidity risk, and it has recently been discovered that it is one of the most significant contributory factors to bank collapse today. As a result, if a financial institution wishes to "eat well" (earn money), it must consider the risk it faces. Nonetheless, the success of any financial organization will be determined by how it estimates its liquidity needs, for example, through the deposit or surplus structure, which will affect performance.

Fadare (2011) conducted research on the banking sector liquidity and financial crises in Nigeria with the goal of identifying the primary factors of banking liquidity in Nigeria and evaluating the relationship between determinants of banking liquidity and financial frictions within the economy. A linear least square model and time series data from 1980 to 2009 were used. Only the liquidity ratio, the monetary policy rate, and the lagged loan-to-deposit ratio were shown to be significant predictors of banking sector liquidity in the study. Second, it was discovered that a decrease in the monetary policy rate,

liquidity ratios, output volatility in relation to trend output, and cash demand leads to an increase in current loan-to-deposit ratios, whereas a decrease in currency in circulation in proportion to banking sector deposits, as well as lagged loan-to-deposit ratios, leads to a decrease in current loan-to-deposit ratios. In general, the findings revealed that during economic or financial crises, deposit money institutions were much less liquid than benchmarks, and that getting liquidity monetary policies right during these times is critical to the banking sector's survival.

Naser, Mohammed, and Ma'Someh (2013) used panel data from Iranian commercial banks from 2003 to 2010 to investigate the impact of liquidity risk on commercial bank profitability. Two groups of bank-specific variables and macroeconomic variables are used in the estimated research model. The findings of the study reveal that the variables of bank size, bank asset, gross domestic product, and inflation will cause banks' profitability to improve, while credit risk and liquidity risk will cause banks' performance to deteriorate.

Munther, Lina, and Rania (2013) evaluated the impact of liquidity quick ratio on profitability through return on asset in the Jordanian banking sector (ROA). The research was carried out during the years of 2005 and 2011. The study found that the independent variable quick ratio has a substantial impact on the dependent variable return on asset based on the statistical findings (ROA). This suggests that liquidity has a considerable impact on Jordanian bank profitability.

Moore (2010) also looked into the impact of the financial crisis on the liquidity of commercial banks in Latin America and the Caribbean. The study focused on the dynamics of commercial bank liquidity in Latin America and the Caribbean during crises. It was accomplished by identifying key liquidity drivers and determining if

commercial bank liquidity during crises is more or lower than what is consistent with economic fundamentals. Ordinary least squares were used to estimate the regression model. The study's findings revealed that the volatility of the cash-to-deposit ratio and the money market interest rate had a negative and considerable impact on the economy. In half of the nations surveyed, however, liquidity is inversely connected to the business cycle, implying that commercial banks err on the side of caution by maintaining considerably greater excess reserves during downturns. In general, the findings revealed that bank liquidity is around 8% lower than what is consistent with economic fundamentals.

2.3.2 Net Working Capital

Working capital is divided into two categories: net working capital and gross working capital. Working capital, or net working capital, is defined as the difference between current assets and current liabilities (Brealey et al., 2004; Mathur (2003)). Accounts receivable, inventories, and cash and equivalents are the three key components of current assets, according to Fazzari and Petersen (1993). Accounts payable and debt due in less than a year are the most common current obligations. Working capital, as described by Shin and Soenen (1998), is the time period between paying for raw materials and collecting for the sale of finished items. The method in which working capital is managed can have a significant impact on a company's liquidity and profitability. Working capital investment entails both carrying and shortfall costs, so businesses must achieve a balance between the two.

Ali (2016) investigated the factors that influence corporate cash holdings in Pakistani textile industries. The study used a sample of 30 firms listed on the Karachi Stock Exchange (KSE) to look at the impact of firm size, profitability, net working capital, and leverage on corporate cash holdings. The study relied on secondary data from 2006 to

2013. To check for multicollinearity, the Variance Inflation Factor (VIF) test was utilized. The literature shows that multiple regression models are consistent. The findings show that net working capital and leverage to cash holding have a negative and significant relationship.

Flipse (2012) looked into the factors that influence corporate cash holdings in European firms. From 1995 to 2006, the study looked at a sample of 15 European countries. The cash-to-assets ratio increased dramatically from 1995 to 2006, according to the report. During this time, cash holdings declined marginally. The data was analyzed using regression analysis. The study finds that the growth in cash holdings is mostly due to changes in business characteristics over time. This means that enterprise' net working capital plummets, they become more R&D-intensive, and their cash flows become riskier. Cash ratio has a negative link with net working capital, business size, leverage, capital expenditures, cash flow, and dividend paying firms, according to the report.

Magerakis, Siriopoulos, and Tsagkanos (2015) published a paper on the determinants of market company cash holdings in the United Kingdom from 1980 to 2012. The information was taken from Thomson Reuters Word Scope yearly financial reports. The study's participants were non-financial UK companies registered on the London Stock Exchange. The data was analyzed using a pooled Ordinary Least Squares (OLS) regression analysis. The empirical data imply that net working capital has a negative impact on cash holdings.

In Bangladesh, Islam (2012) performed research on the cash holding factors of manufacturing firms. The data set included data from the firm's unique variables for five years (2006-2010). For a presumably ensured least square model, regression analysis was

used, and it was deemed sufficient. According to the findings, manufacturing firms' cash does not have a substantial link with net working capital.

Working capital policy, according to Mathur (2003), can be split into three categories: conservative policy, aggressive policy, and moderate policy. Under a cautious approach, the company may opt to have a large cash and bank balance in current account, or invest in quickly marketable securities, while maintaining higher raw material and finished goods inventories in order to reduce the risk of running out of stock and losing sales. Working capital policies that are either aggressive or too restrictive can result in disproportionate losses due to the possibility of stock outs and the resulting loss of production, as well as a loss of sales and a negative impact on the company's profitability.

A moderate approach will result in a moderate level of working capital, which is neither too high nor too low, but just right. By shortening the inventory and accounts receivables periods while lengthening the accounts payables term, an aggressive working capital management policy of liquidity management results in a shorter cash conversion cycle. Capital is minimized in current assets vs long-term investments as a result of aggressive asset management. Higher profitability would ensue, but there would be a larger chance of running out of cash. A more conservative policy, on the other hand, invests a bigger portion of capital in liquid assets at the expense of some profitability. “Higher levels of generally lower cost short-term debt and less long-term capital are used in aggressive financing policies.” While this reduces capital costs, it also raises the danger of a short-term liquidity problem,” (Visscher and Weinraub, 1998). ” “In both large and small businesses, inventories and accounts receivable have been reduced, and the cash conversion cycle has been sped up. Deloof (2003) examines 1009 major Belgian non-financial enterprises from 1992 to 1996 and finds that by reducing the days in accounts

receivable and inventories, managers may boost firm profitability. Less profitable businesses, according to his findings, stretch their accounts payable. Teruel & Solano (2007) use 8,872 small and medium-sized enterprises from 1993 to 2002 to examine the effects of working capital management on SME profitability, demonstrating that managers can add value to firms and shareholders by reducing the number of days in inventory and accounts receivable, as well as shortening the cash conversion cycle.

Kytönen (2005) conducted an empirical study on the determinants of corporate liquidity holdings for a sample of Finnish firms listed on the Helsinki Stock Exchange, and finds that firm size, growth opportunities, opportunity costs, cash flows, working capital management efficiency, leverage, dividend policy and the likelihood of financial distress are all important factors in determining liquidity. He points out that a company with more efficient liquidity management processes is likely to have more liquid assets on hand.

Niskanen and Niskanen (2007) investigated the factors that influence cash holdings in a sample of Finnish small and micro businesses that have multiple or long-term banking relationships. Larger businesses face financial constraints, have higher debt-to-asset ratios, and maintain more cash than small and micro businesses. Working capital management is an important financial management function in both large and small businesses, and it is especially critical in small businesses.

Teruel and Solane (2008) examined the cash holdings of Spanish SMEs and discovered that enterprises with a higher degree of short-term debt would store more cash, reducing the risk of non-renewal short-term loan. Credit spreads are positively rather than adversely associated to cash holdings, according to Acharya (2006), and the positive correlations are stronger in riskier enterprises. “Riskier enterprises may choose to retain

bigger cash reserves in the presence of financing constraints and the cost of financial distress in order to lessen the chance of a cash shortage in the future." While aggressive working capital management increases corporate cash availability, businesses must also be aware of the danger of storing fewer goods, raising accounts receivable, and decreasing accounts payable. It is possible that this is why the firm's working capital management policy combines aggressive working capital management with conservative working capital management characteristics. Given that, proactive working capital management entails reducing current assets, inventory, and accounts receivables, as well as keeping less cash and cash equivalents on hand and stretching accounts payable, however, instead of cutting cash levels, corporations have been observed increasing cash holdings, implying a conservative financial stance. "Cash earned now from better working capital management, might be benefited to productively reinvest in the business," according to Gamble (2004). "Firms will welcome having some cash of their own to safeguard them from difficulties and to enable them capitalize on opportunities" as long as banking institutions are judicious about who they lend loans to. According to Harris (2005), understanding a company's genuine working capital needs is critical so that it may successfully minimize financial risk, plan for uncertainty and build a ready cash reserve that would provide flexibility and stability during difficult times.

2.3.3 Cash Flow Volatility

Cash flow volatility has a big impact on how much financial slack a company keeps and how sensitive its investments are to cash flow. Firms with high cash flow volatility have more financial slack than their low cash flow volatility counterparts, and their investment outlays are less sensitive to the firm's internally generated cash flows (Cleary, 2006). The effect of cash flow volatility on a company's cash holdings is determined by the company's financial constraints. In reaction to increased cash flow volatility, the

financially limited company raises its cash reserves. Financially unconstrained enterprises' cash balances, on the other hand, are unaffected by cash flow fluctuation (Seungjin and Jiaping 2007). Firms with a high level of financial limitations are more likely to hold cash than firms that are not constrained. Cash flows are also influenced by investment opportunities.

Cash reserves are critical for businesses facing lower cash flow or worsening company conditions. A favorable link between cash holdings and cash flow volatility is expected in much of the existing literature (Kalcheva & Lins, 2007; Pinkowitz, et al., 2006). Companies with high cash flow volatility, in particular, store more cash to increase their chances of continuing in the market during periods of declining profitability. In the United Kingdom, research has found a link between cash holdings and cash flow volatility (Faulkender and Wang, 2006; Ozkan and Ozkan, 2004). Firms are subject to lack access to liquid assets when volatility rises. Furthermore, a company's decision to pass up a wonderful opportunity for expansion owing to a lack of capital has a negative impact on the company. As a result, companies with significant cash flow volatility are likely to maintain more cash in order to minimize the expenses associated with liquidity limitations (Ozkan & Ozkan, 2004). Bates (2008), who found evidence to support the assumption that firms with high cash flow volatility prefer to store more cash, supports this thesis. Ferreira and Vilela (2004) also proposed a link between cash holdings and cash flow volatility in EMU countries, arguing that “firms with higher cash flow volatility are more likely to experience cash shortages as a result of unexpected low (or negative) cash flows.”

According to a study conducted by Ran (2007), the precautionary demand and investment have an inverse relationship. Cash is kept on hand as a preventive measure, providing liquidity and assisting in the face of future external funding uncertainties. Cash

flow sensitivity should be strong for enterprises with financial limits and a segment between internal and external costs, according to Fazzari (1988). The marginal cost of spending cash increases dramatically when organizations have limited cash, according to a study that established an inverse relationship between cash flow sensitivity and marginal value of cash. As a result, a company's marginal cash value is a critical aspect in deciding financing options, which are further exposed by cash flow sensitivities.

Cash holdings are affected by cash flow unpredictability. “Uncertainty leads to situations in which the firm has larger outlays than expected,” writes Opler (1999). As a result, organizations with greater cash flow unpredictability are likely to hoard more cash.” “Firms with more unpredictable cash flows are likely to store more cash in an attempt to reduce the predicted costs of liquidity constraints,” Ozkan and Ozkan (2004) suggest. The more cash flow unpredictability a company has the more states of nature it would face where it will be short on liquid assets.” “Firms with more unpredictable cash flows suffer a higher likelihood of facing cash shortfall due to unanticipated cash flow deterioration,” according to Ferreira and Vilela (2004).

Powel (2018) conducted a survey of the Chief Financial Officers (CFOs) of the 250 largest Indonesian companies based on market capitalization at year-end 2016 to obtain their perspectives on the financial determinants of corporate cash holdings. The findings show that various agency cost hypotheses have mixed support, and that managers of firms with significant cash flow volatility may store extra cash to assure the ability to engage in new profitable projects, given the high volatility of internally produced cash flows.

Tayem (2017) looked at the factors that influence corporate cash holdings in Jordan, a small emerging market with a lot of market frictions. To anticipate the determinants of

cash reserves, the researchers used the trade-off financing hierarchy framework and management discretion theory. The study also used other estimation methods to assess the forecasts using a sample of listed non-financial Jordanian enterprises from 2005 to 2013. The findings reveal that cash flow volatility has a strong positive impact on cash holding levels.

Chireka and Fakoya (2017) investigated the factors that influence corporate cash holdings in South African retail enterprises. To explore the links between cash holding levels and the suggested determining factors, the researchers conducted panel data analysis. The data was analyzed using multiple regression analysis. A total of eight factors were investigated to see if they had substantial explanatory power on the companies' cash holding levels. The findings revealed that cash flow volatility has a major impact on retail enterprises listed on the Johannesburg Stock Exchange's cash holding levels.

Magerakis, Siriopoulos, and Tsagkanos (2015) looked at the factors that influenced market corporate cash holdings in the United Kingdom from 1980 to 2012. The information was taken from Thomson Reuters Word Scope yearly financial reports. The study's participants were non-financial UK companies registered on the London Stock Exchange. The data was analyzed using a pooled Ordinary Least Squares (OLS) regression analysis. The empirical data imply that cash holdings, like R&D and the market to book ratio, are favorably connected to investment opportunity. Cash ratio is also positively correlated to sector cash flow volatility.

Kariuki, Namusonge, and Orwa (2015) looked into the factors that influence corporate cash holdings in Kenyan manufacturing enterprises. A cross-section descriptive survey research design was used in this study. The study population of 504 private enterprises

registered with the Kenya Association of Manufacturers was utilized to choose a sample of 156 firms using stratified random selection (KAM). The survey data of self-reported financial variables was collected using a questionnaire. The data was analyzed using multiple regression analysis in this study. The findings revealed a link between cash flow fluctuation and company cash holdings.

According to financial criteria, Jha and Hui (2012) examined the financial performance of different ownership structured commercial banks in Nepal. Financial ratios, which were based on the CAMEL model, were used to identify the determinants of performance. For the years 2005 to 2010, Jha and Hui (2012) looked at 18 banks. By creating two regression models to estimate the impact of capital adequacy ratio, non-performing loan ratio, and interest expenditures to total loan, the researcher used the econometric model, multivariate regression analysis, The impact of the net interest margin and credit-to-deposit ratio on financial profitability. The findings demonstrated that capital adequacy ratio; interest expenditures to total loan, and net interest margin all had a significant impact on return on assets, whereas capital adequacy ratio had a large impact on return on equity.

Kosmidou, Tanna, and Pasiouras (2008) investigated the impact of bank-specific features, macroeconomic conditions, and financial market structure on the earnings of UK-owned commercial banks. The return on average assets (ROAA) and net interest margins were used to calculate the implications on profitability (NIM). The study covered the years 1995 to 2002, and the econometric analysis used an imbalanced panel data set of 224 observations. The research found that capital strength, as measured by the equity to assets ratio, is a significant driver of UK commercial bank profitability.

Athanasoglou, Brissimis, and Delis (2008) used an empirical framework that included the classic Structure-Conduct-Performance (SCP) hypothesis to investigate the impact of bank-specific, industry-specific, and macroeconomic determinants on bank profitability. The study spanned the years 1985 to 2001 and focused on Greek banks. Capital, credit risk, productivity, expense management, ownership, inflation, and business cycles were all considered as independent variables by the researchers. Capital is important in understanding bank profitability, according to the empirical findings. The research also revealed that capital increases credit risk and lowers commercial profit margins.

Between 1994 and 2011, Ifeacho and Ngalawa (2014) conducted research on the impact of bank specific characteristics and selected macroeconomic variables on the South African banking system. The CAMEL model of bank performance evaluation was used to evaluate capital sufficiency, asset quality, management, earnings ability, and liquidity. The ABSA, First National Bank, Nedbank, and Standard Bank studies used data from South Africa's four main banks, namely ABSA, First National Bank, Nedbank, and Standard Bank. Over 70% of South Africa's financial assets are held by these four banks. The return on assets (ROA) and return on equity (ROE) were used as metrics of bank performance by the researcher. The findings revealed that capital sufficiency has a large negative association with ROA, but a significant and positive link with ROE, as expected.

Okoth and Gemechu (2013) investigated the factors that influence commercial banks' financial performance in Kenya. The research took place between 2001 and 2010. On panel data, the researchers used the linear multiple regression model and Generalized Least Square. Capital adequacy, asset quality, Management Efficiency, Liquidity Management, GDP growth 15 rate, and inflation were considered as independent variables by the researchers. The return on investments (ROI), return on equity (ROE),

and Net Interest Margin (NIM) were utilized as dependent variables to assess performance. The findings revealed that the bank-specific parameters studied had a considerable impact on the country's commercial bank performance.

Kim et al. (1998) investigated the firm's optimal cash holdings and investment policy; however he did not focus on the cash holdings' precautionary purpose. They believe that cash and short-term investments are viable options for future liquidity needs. As a result, the exchange rate between short-term investments and cash holdings determines the best short-term investment and cash holding selections. Only a financially unconstrained corporation with an additional cash endowment, according to Kim et al. (1998), has a lower marginal return on short-term investments than the risk free rate, as a result, it has a positive cash balance, whereas a cash-strapped company has none. As a result, the motivation for a company to maintain positive cash is to have more cash on hand rather than to be safe.

2.3.4 Profitability

Creditors, owners, staff, and management all care about a bank's profitability. Return on Asset, Return on Equity, and Net Interest Margin are some of the common metrics used to assess a bank's profitability. Net income or profit after taxes is divided by total assets to calculate return on asset (ROA). It is also calculated by dividing net income by average total assets. Ramlall (2009); Flamini, Donald, and Schumacher (2009); Gul, Irshad, and Zaman (2011); Khrawish, Siam, and Khrawish (2009); Khrawish, Siam, and Khrawish (2009); Khrawish, Siam, and Khrawish (2009); Khrawish, Siam, and Khrawish (2011); to calculate ROA, Aminu (2013) and Soyemi, Akinpelu, and Ogunleye (2013) used net income over total assets. While Srairi (2009), Sufian (2011), and Antonina (2011) used net income over average total assets to calculate ROA, Srairi (2009), Sufian (2011), and Antonina (2011) used net income over average total assets to

calculate ROA. The ratio of net income or profit after taxes to total common stock equity is known as return on equity (ROE). It's also calculated using net income as a percentage of average total common stock equity. To calculate ROE, Ali, Akhtar, and Ahmed (2011) and Aminu (2013) used net income over entire common stock equity. Sufian (2011) calculated ROE by dividing net income by the average total common stock equity. Net Interest Margin (NIM) is calculated by dividing net interest revenue by total assets. It's also calculated as the ratio of net interest revenue to average total interest-earning assets. Net interest income over total assets was used to calculate NIM by Gul, Irshad & Zaman (2011) and Soyemi (2013).

Tsagem, Aripin, and Shak (2015) investigated the factors that influence small and medium-sized businesses' cash holdings in Nigeria. Panel data regression analysis was used using secondary data on a sample of 311 Nigerian SMEs from 2007 to 2013. According to the study's findings, SMEs with higher profitability maintain considerable cash holdings.

A study on the determinants of corporate cash holdings in Pakistan was done by Shabbir, Hashmi, and Chaudhary (2016). The research was based on a panel of 150 Pakistani non-financial listed companies from 2004 to 2012. The primary determinants affecting cash holdings were determined using panel regression analysis. The findings show that business profitability has a beneficial impact on corporate cash holdings. Tsagem, Aripin, and Shak (2015) investigated the factors that influence small and medium-sized businesses' cash holdings in Nigeria. Panel data regression analysis was used using secondary data on a sample of 311 Nigerian SMEs from 2007 to 2013. The study's findings reveal a statistically significant link between return on assets and SME cash holdings.

Ali (2016) conducted research on the factors of corporate cash holdings in Pakistani textile industries. The study used a sample of 30 firms listed on the Karachi Stock Exchange (KSE) to look at the impact of firm size, profitability, net working capital, and leverage on corporate cash holdings. The study relied on secondary data from 2006 to 2013. To check for multicollinearity, the Variance Inflation Factor (VIF) test was utilized. The literature shows that multiple regression models are consistent. The findings suggest a positive and significant association between profitability as assessed by Return on Assets (ROA) and cash holding.

Profitable businesses, according to Al-Najjar (2013), can build more spare cash and incur lower debt interest payments. Less profitable enterprises should avoid issuing debt and instead rely on cash to fund their operating activities in a pecking order." In his study, Usman (2014) examined the profitability of Pakistan's 23 commercial banks from 2009 to 2012. His research focuses on the only internal factors that influence the profitability of Pakistan's commercial banks. The ordinary least square (OLS) approach was utilized to investigate the impact of cost efficiency in this study, the impact of liquidity, capital adequacy, deposits, and bank size on commercial bank profitability (ROA). Cost efficiency, liquidity, and capital adequacy are the elements in the management check that determine the profitability of commercial banks operating in Pakistan, according to the empirical findings of his study. Other factors, such as deposits and the size of the bank, had little effect on profitability.

2.4 Knowledge Gap

The preceding analysis of the literature demonstrates that there are substantial knowledge gaps regarding the determinants of commercial bank cash holding, particularly in Kenya. A number of corporate cash holding determinants have been identified in the empirical research. Firm size, cash flows, net working capital, leverage, and the market-to-book

ratio are some of the variables. The results of the many empirical studies evaluated on the relationship between corporate cash holding and its determining factors are mixed. The empirical literature does not reveal how liquid asset alternatives work, Using panel data analysis, net working capital cash flow volatility and profitability effect corporate cash holdings of licensed commercial banks in Kenya. According to the empirical review, it is unclear how government taxation on banks moderates the relationship between the drivers of the selected parameters on the corporate cash holdings of Kenya's Licensed Commercial Banks. This is the knowledge gap that the current study bridged by providing fresh empirical evidence on the determinants of corporate cash holdings of Kenya's licensed commercial banks.

2.5 Conceptual Framework

A conceptual framework is a model that conceptualizes or expresses the relationships between variables in a study and visually or diagrammatically depicts the relationship. Figure 1 depicts the conceptual framework for determining the numerous variables and their effects on Kenyan commercial banks' financial performance.

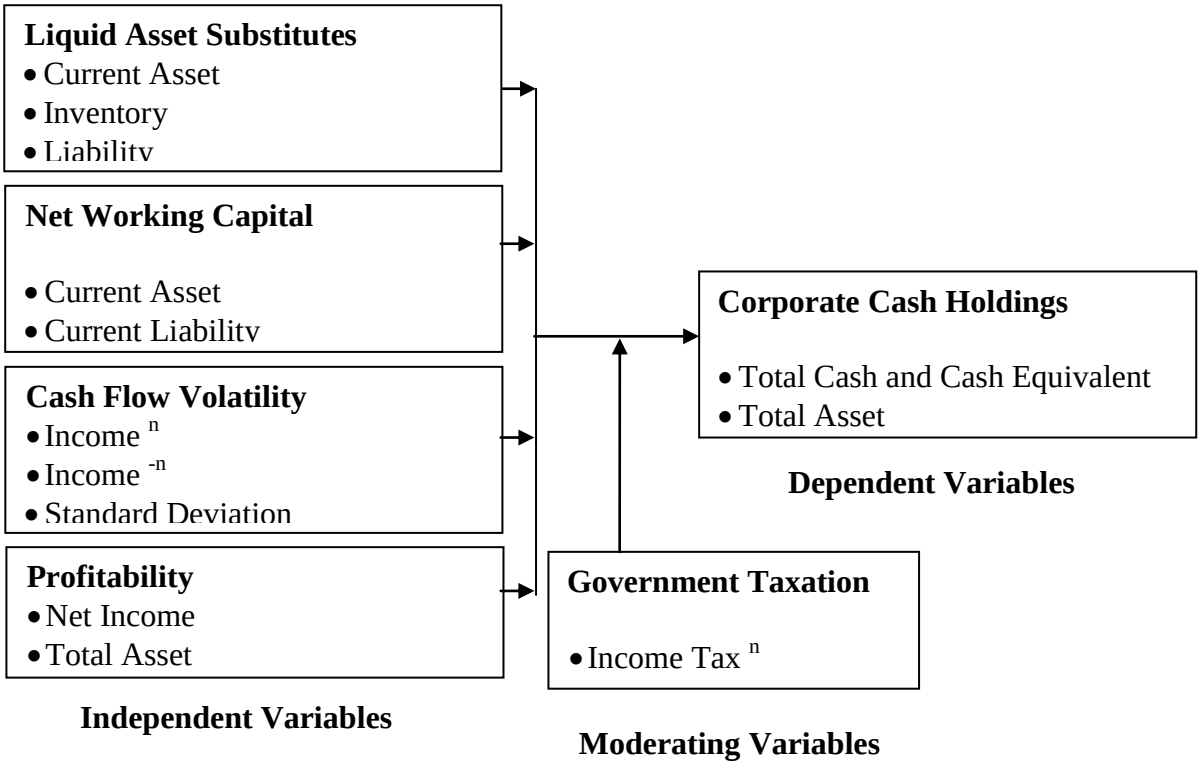

Figure 1: *Conceptual Framework*

Source: Researcher (2020)

2.6 Operationalization of Variables

2.6.1 Liquid Asset Substitutes on Corporate Cash Holding

Liquidity refers to a company's capacity to pay current obligations on time and hence stay in business in the short term, and it represents how easily assets may be converted to cash. Inventory, accounts receivable, and accounts payable are examples of liquid assets that may be changed into cash quickly and cheaply, and organizations with more liquid asset substitutes are anticipated to maintain less cash. On the ideal levels of cash

holdings, the net working capital to assets to assets ratio will be employed as a proxy for liquid assets substitutes, and that management that maximizes shareholder wealth should set the firm's cash holdings at a level such that the marginal benefit of cash holdings equals the marginal cost of those holdings.

2.6.2 Net Working Capital on Corporate Cash Holding

Current assets minus current liabilities are equal to the working capital, often known as net working capital or NWC. Accounts receivable, inventories, cash and cash equivalents, and accounts payable are the primary components of working capital. As a result, changes in net working capital have an impact on cash holdings. Furthermore, because corporations may use short-term debt as a financial resource, changes in short-term debt could be a substitute for cash. The less a company needs external financing and the better its financial performance, the more effective it is at managing its working capital. The objective of working capital management (WCM) is to minimize the cost of maintaining liquidity while guarding against the risk of insolvency, working capital policy applies to short-term decisions, and capital structure finance applies to long-term decisions.

2.6.3 Cash Flow Volatility on Corporate Cash Holding.

The standard deviation of the ratio of cash flow (CF) scaled by total assets over the previous 10 years is used to calculate cash flow volatility. With sufficient internal cash flow, actual expenditures will be higher, and the risk of expenditure deception will also be higher. Financial flexibility is a capability that can be used to achieve the lowest capital cost strategy. Furthermore, the company's response to rapid changes in the company's funds or perhaps investment prospects in an optimal manner.

2.6.4 Profitability on Corporate Cash Holding

Managers of companies with surplus cash have a lot of leeway in how they use it. They can use it to support new capital projects, invest in research and development, explore acquisitions, pay dividends, repurchase shares, reduce debt, or simply keep it. Cash may be held by managers for motives that are not in the best interests of shareholders. Managers might avoid raising funds externally by hoarding surplus cash, which exposes their companies to the disciplinary scrutiny of external capital markets. Excess free cash flows can be used by managers to pursue their own expenditure goals.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the research design, including the rationale for the design, the target population, and the sampling and sampling methodologies employed in the study. It also discusses data collection instruments, research instrument validity and reliability, data processing procedures and presentation, and ethical considerations in the study.

3.2 Research Design

A causal relationship research design was used in this study. Casual analysis looks at how one variable influences or causes changes in another (Cooper & Schindler 2006). Researchers use this approach to figure out how to explain, predict, and manipulate the link between variables. Researchers can investigate the relationships between factors thanks to the design; As a result, the researcher can rule out alternate explanations and research designs and draw inferences informally. Using yearly time series data from 2009 to 2018, this study used a causal relationship research approach to examine selected factors impacting the corporate cash holdings of Licensed Commercial Banks in Kenya.

3.3 Target Population

A population, according to Ngechu (2006), is a collection of individuals, cases, or things that have some observable features. A population has distinct traits that set it apart from other populations. A target population, according to Ngechu (2006), is a collection of individuals, events, or objects about which a researcher wishes to generalize his or her results. The population of the current study consisted of 34 Kenyan-registered Licensed Commercial Banks.

3.4 Sampling and Sampling Techniques

According to Cooper and Schindler (2011), sampling is the process of selecting a proportionate sample of the overall population under study. It allows for lower costs, more accurate outcomes, and faster data gathering and demographic element availability. A sampling methodology, according to Collins and Hussey (2009), is a means of picking elements from a research population to reflect the total population. This research used a census of Kenya's 34 licensed commercial banks that functioned between 2009 and 2018. The Licensed Commercial Banks in Kenya that operated between 2009 and 2018 served as the study's units of analysis.

3.5 Data Collection Instruments and Procedure

This research drew on secondary data from the audited financial reports of Kenya's 34 licensed commercial banks, which operated from 2009 to 2018. The researcher utilized a data collecting sheet to enter all of the variables after extracting them from the bank's financial statements. The researcher got a research permit from NACOSTI in order to meet the research ethical standards, as of the 9th of July, 2019, this offer was valid. The acquired secondary data had already been approved by Kenya's Public Audit Act 2015, and hence was trustworthy in meeting the study's goals.

3.6 Data Analysis

The researcher cleaned the data after collecting all of the required data sets in the data collection sheet, ensuring that it was suitable for analysis. To evaluate the data, the researcher employed STATA computer software. Inferential statistics were used to respond to the research hypotheses. Both correlation and regression analysis were utilized to establish the link between the variables under study in inferential statistics (Kothari, 2011). The level of significance was set at 5%, meaning that if the p value is less than 0.05, the null hypothesis was rejected and the alternative hypothesis was

accepted (Kothari, 2011). To link the independent variables to the dependent variable, a multivariate regression model was used.

A panel data model was used to examine some of the characteristics that influence Licensed Commercial Banks' corporate cash holdings in Kenya. The research was conducted using panel data over a ten-year period, from 2009 to 2018. The Hausman Test was used to find the best fitted model for the regression analysis. Diagnostic tests for heteroskedasticity, serial correlation, fixed effects, random effects, and autocorrelation, among others, were used to assess the nature of the panel data and the optimal model for analysis.

Liquid Asset Substitute was calculated using the following formula;

$$\text{Lqd} = \frac{(Net\ Working\ Capital - Total\ Cash)}{Total\ Asset} \quad \text{.....3.1}$$

Net Working Capital (nwc) was calculated using the following formula;

$$\text{nwc} = \frac{(Current\ Asset)}{Current\ Liability} \quad \text{.....3.2}$$

Cash Flow Volatility (cfv) was calculated using the following formula;

$$\text{cfv} = \frac{(Total\ Cash)}{Liquid\ Asset} \quad \text{.....3.3}$$

Profitability (ROA) was calculated using the following formula;

$$ROA = \frac{(Net\ Income)}{Total\ Asset} \quad \text{.....3.4}$$

Corporate Cash Holding (cch) was calculated using the following formula;

$$cch = \frac{(Total\ Cash + Cash\ Equivalent)}{Total\ Asset} \quad \text{.....3.5}$$

Government Taxation (gtx) was calculated using the following formula;

Gtx = Income Tax of the Current Year 3.6

The regression model which was adopted was as follows:

$$Y_{it} = \beta_0 + \beta_1 las_{it} + \beta_2 CTAP_{it} + \beta_3 CTPE_{it} + \beta_4 CTBP_{it} + \varepsilon_{it}$$

Where

Y_{it} = corporate cash holdings of Licensed Commercial Banks in Kenya

β_0= Regression Coefficients constant

$\beta_{1.....}\beta 4$ is the coefficients of the regressor variables

las_{it} = Liquid Asset Substitutes

nwc_{it} = Net Working Capital

$cfvol_{it}$ = Cash Flow Volatility

$profit_{it}$ = Profitability

ε_{it} = the error term

Model for the moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya

$$Y_{it}=a_0 + \sum_{i=1}^{5} \beta i X_{it} + \mu_{it} + \sum_{i=1}^{5} ki(X_{it} * Z_{(1,2,3)it}) \quad \text{.....(3.4)}$$

Where Y_{it} = corporate cash holdings of Licensed Commercial Banks in Kenya

a_0 is the time-invariant intercept for the independent variables

k_i is the time-invariant intercept for the moderator variable

X_{it} is the vector of regressor tax policy variables

β_i is the coefficients of the regressor tax policy variables

Z is the moderator variables government taxation

i = 1 ……34 Licensed Commercial Banks in Kenya

t = refers to the time in years from the year 2009 to 2018, the 10 years.

U_{it} is error term

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSIONS

4.1 Introduction

The general objective of the study was to analyze selected factors determining the corporate cash holdings of Licensed Commercial Banks in Kenya. This chapter presents the results and discusses of the descriptive statistics, diagnostic tests of the statistical assumptions of the regression analysis and inferential statistics between the independent, dependent and moderating variables. The descriptive analysis entailed correlation analysis and the summary statistics comprising of the mean, the standard deviation, minimum and the maximum values respectively. The inferential statistics was used to analyze effect of; liquid asset substitutes, working capital, cash flow volatility and profitability on the corporate cash holdings of Licensed Commercial Banks in Kenya. Further, this section presents results of panel unit root to ensure that the variable is stationary and to avoid the problem of spurious regression results. The chapter also presents Conitegration tests, Haussmann test and the chapter ends by conducting post estimation diagnostic tests such multicollinearity, autocorrelation and heteroscedasticity.

4.2 Descriptive Statistics of the Study Variables

The data was visualized using descriptive statistics, which described the important data aspects such as the number of observations, mean, standard deviation, minimum value in the data array, and maximum value in the data array. Liquid asset substitutes, working capital, cash flow volatility, profitability, and corporate cash holdings of Licensed Commercial Banks in Kenya were among the data arrays visualized in this section. Table 4.1 contains all of the descriptive statistics results.

Table 1: Descriptive Statistics of the Study Variables

Variable	Observations	Mean	StdDev	Max	Min
Liquid Asset Substitutes Ratio	340	1.146	1.603	9.975	0.001
Net Working Capital Ratio	340	0.110	0.327	0.619	0.482
Profitability Ratio (ROA)	340	0.346	2.528	27.587	0.162
Cash Flow Volatility	340	0.869	2.642	24.758	7.089
Corporate Cash Holdings	340	0.148	0.323	3.482	0.091

The summary of the descriptive statistics as illustrated in Table 1, revealed that assets the licensed Commercial Banks in Kenya could easily convert into cash in a short amount of time had 340 observations in the analysis. The mean ratio of Liquid Cash Substitute among the 34 Commercial Banks between 2009-2018 was 1.146. This finding therefore indicated that the licensed Commercial Banks in Kenya had 114.6% ability to meet their short term debt obligations. This ability of the banks to meet the short term obligations had a standard deviation of 1.603, a maximum of 9.97 and minimum of 0.001. This descriptive statistics finding therefore in a summary indicated that the Licensed Commercial Banks in Kenya were able to meet their short term obligations.

Concerning Net Working Capital ratio of the 340 observation established a mean of 0.110 indicating that had 11% ability to use their current assets to meet their current liabilities. The Net Working Capital had standard deviation of 0.327 with a maximum value of 0.619 and a minimum of 0.482. This finding therefore indicated that licensed Commercial Banks in Kenya had the excess of current assets over current liabilities over the period of the study. Findings on profitability of licensed Commercial Banks established that the mean Returns on Asset (ROA) was 0.346 indicating that on average the licensed Commercial Banks in Kenya had 34.6% Returns on their Assets with a deviation of 2.525, a maximum of 27.587 and a minimum of 0.162.

Further findings on cash flow volatility ratio established that the licensed Commercial Banks in Kenya ratio was 0.869. This finding indicated that the licensed Commercial Banks in Kenya had 86.9% ability to capture the uncertainty of the operating environment and also indicating the banks higher probability of informed trading. The finding also established a deviation of 2.642, a maximum cash flow volatility ratio of 24.758 and a minimum of 7.089. Findings on corporate cash holdings of the Licensed Commercial Banks in Kenya had a mean ratio of 0.148. Corporate Cash Holdings was the Commercial Banks decision to distribute cash to shareholders as dividends or through a share purchase, invest it, or save it for the future use. The finding therefore indicated that the Licensed Commercial Banks in Kenya 14.8% cash holding over the years of the study. The findings also established a deviation of 0.323, maximum value of 3.482 and a minimum of 0.019.

4.3 Diagnostic Tests

4.3.1 Panel Unit Root Test

To avoid erroneous regression results, a panel unit root test was used. The Levin–Lin–Chu (2002), Harris–Tzavalis (1999), Breitung (2000; Breitung and Das 2005), Im–Pesaran–Shin (2003), and Fisher-type (Choi 2001) tests all include the null hypothesis that all panels have a unit root as their null hypothesis this is because it allows you to include fixed effects and time trends in the model of the data-generating process, the Fisher-type Dickey-Fuller test provides more advantages than other panel unit root tests in this study and thus it can be utilized with serial correlation, the Dickey-Fuller test was thus chosen for the panel root test. Second, the ADF test can handle more complex models, such as the one used in this study, which includes control variables. The stationarity unit-root test was used to ensure that all panels were stationary.

Table 2: First Differenced Panel Unit Root Test Results

Exogenous variables: Individual effects
Automatic selection of maximum lags

Methods - Levin-Lin-Chu unit-root test	**At Level**		**At First Difference**	
Chi-Square	**Intercepts**	**Significance**	**Statistics**	**Significance**
Corporate Cash Holdings	294	0.376	109.147	0.0031
Liquid Asset Substitutes	207	0.219	118.241	0.0115
Net Working Capital	316	0.604	207.171	0.004
Cash Flow Volatility	28	0.113	19.1191	0.0161
Profitability	194	0.419	106.812	0.0273

Based on the results in Table 2, the panel unit root test revealed that all of the variables had a p-value of less than 0.05, indicating that the null hypothesis of unit root for all of the variables under consideration is rejected, implying that the panel data is stationary, implying that the regression results cannot be regarded as sp (corporate cash holdings). The results in Table 4.2 indicate that the data were stationary at first difference which implies that they were integrated of the first order.

4.3.2 Co-integration Tests

Co-integration tests are used to see if there is a long-term correlation between various panels of data. The tests are used to determine the level of sensitivity of two or more variables to the same average over a given time period. Engle-Granger, Johansen, and Philips-Ouliaris are three of the most prominent co-integration tests. The Johansen co-integration test was utilized in this investigation. The results are summarized in Table 4.3.

Table 3: Co-integration Test Results using Johansen Tests

Maximum rank	Parms	LL	Eigenvalues	Trace statistic	5% critical value
0	20	-736.73274	.	52.4893	47.21
1	27	-722.78167	0.54941	31.5876	29.68
2	32	-714.61067	0.37307	8.2452	15.41
3	35	-710.99555	0.18664	1.0150	3.76
4	36	-710.48807	0.02858		

Because the trace statistics were greater than the critical threshold, the co-integration test findings in Table 4.3 show that there was no co-integrating relationship among the variables under examination. When the trace statistics in each equation are greater than the crucial value, the null hypothesis that there is no co-integrated equation is accepted. Because the trace statistics in each of the four equations were greater than the critical threshold, the test determined that there was statistical evidence of no co-integrated equations.

4.3.3: Haussmann Test

Random effect and Fixed effect model estimation are two estimation strategies used in panel data analysis. Haussmann tests were used to establish the best estimating technique for this investigation, and the results are shown in Table 4.4.

Table 4: Random Effect Regression for Corporate Cash Holdings

Random-effects GLS regression			**Number of obs**		**18**	
Overall =		0.8781				
Corr(u_i, Xb) =		0.0000	F(4, 13)		23.41	
Corr(u_i, Xb) =		= 0.0000	Prob > F		= 0.0000	
cch	**Coef**	**Std.Err**	**T**	**p>t**	**(95% conf.**	**interval**
las	15.83979	4.145064	3.82	0.000	7.715616	23.96397
nwc	-21.92832	7.219544	-3.04	0.002	-36.07836	-7.778
cfvol	-0.1417844	0.3225071	-0.44	0.660	-0.7748087	0.4912
roa	-22.69713	7.134888	-3.18	0.001	-36.68125	-8.7130
_Cons	0.20802	0.078463	2.65	0.008	0.0540159	0.3620
Sigma_u	0.08294					
Sigma_e	0.06949644					
Rho	0.58750757					
	(fraction of variance due to u_i)					
F test that all u i=0: F(37, 831) = 32.76 Prop > F= 0.0000						

Results of determinants of the corporate cash holdings on corporate cash holdings of Licensed Commercial Banks in Kenya using Random Effect regression model are presented in Table 4.4

Table 5: Fixed Effect Regression for Corporate Cash Holdings

Fixed-effects	**(within) regression**		**Number of obs**	**=18**	
Overall R-Square =	0.4126				
			Wald chi2(5)	= 26.14	
corr(u_i, X)	= 0 (assumed)		Prob > chi2	=0.0016	
cch	**Coef.**	**Std. Err.**	**z**	**P>z**	**[95% Conf. Interval]**
las	-.2181014	.136875	-1.59	0.111	-.4863715 0.0501686
nwc	.1928037	.1336603	1.44	0.149	-.0691658 0.4547731
cfvol	-.1417844	.3225071	-0.44	0.149	-.0691658 0.4547731
roa	-.0030135	.0138004	-0.22	0.827	-.0300619 0.0240349
_cons	.2080248	.0795735	2.61	0.009	.0520636 0.363986
sigma_u	.08166375				
sigma_e	.06949644				
Rho.57997465 (fraction of variance due to u_i)					

Table 6 presents the results of Fixed Effect regression model of Selected Factors Determining the Corporate Cash Holdings of Licensed Commercial Banks in Kenya.

Table 6: Haussmann Test Results for Corporate Cash Holdings

	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	RE	**FE**	**Difference**	**S.E.**
Las	-.217959	-.2179642	5.15e-06	.0103514
nwc	.1870058	.1871067	-.0001009	.0099334
cfvol	-.1167993	-.1168684	.000069	.0228388
Roa	-.0033812	-.0032868	-.0000944	.0010439
	-0.0004726	-0.000473	-0.0003912	0.000000395
	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(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)			
	Prob>chi2 = 0.97812			

The null hypothesis of the Haussmann Test is that the Random Effects Model (REM) is preferable, and since the results in Table 6 show a P-value of 0.97812, which is greater than 0.05 confidence level, the null hypothesis is not rejected, and the Random Effects

Model was used for the analysis of factors determining the corporate cash holdings of Licensed Commercial Banks in Kenya, as shown in Table 6. This means that the Random Effects regression model was the best fit for explaining the link between the variables of Corporate Cash Holdings of Licensed Commercial Banks in Kenya.

4.4 Inferential Statistics Results

A regression analysis-based random effect model was used to determine the causal influence of the independent factors on the dependent variable. As a result, the inferential statistics results of factors determining the corporate cash holdings of Licensed Commercial Banks in Kenya are presented in this section. The results of Pearson Correlations are presented first, followed by simple linear regression results showing the link between each of the factors and corporate cash holdings of Kenya's Licensed Commercial Banks. The results of the combined regression results of all four factors included in the current study, as well as corporate cash holdings of Licensed Commercial Banks in Kenya, are shown in the second part. Finally, the results of the moderating influence of government taxation policy on the determinants and corporate cash holdings of Licensed Commercial Banks in Kenya are presented in this section.

4.4.1 Pearson Correlation of Selected Factors Determining the Corporate Cash Holdings

Table 7: Correlation of Selected Factors Determining the Corporate Cash Holdings

	las	nwc	cfvol	profit	Cch
las	1				
nwc	-0.0137	1			
	0.7914				
cfvol	-0.0136	0.9415	1		
	0.7934	0			
profit	0.0095	-0.1142	-0.1146	1	
	0.8549	0.0272	0.0267		
cch	-0.6849	-0.1915	-0.1152	-0.0134	1
	0.0000	0.0002	0.0259	0.7957	

Key: cch – Corporate Cash Holding, las - Liquid Asset Substitutes, nwc – Net Working Capital and cfvol - Cash Flow Volatility

The Pearson Correlation results of selected factors determining corporate cash holdings are presented in Table 7. The results showed that Liquid Asset Substitutes had a significant correlation with Corporate Cash Holding (r=-0.6849, p =0.0000), Net Working Capital had a significant correlation with Corporate Cash Holding (r=-0.1915, p =0.0002), and Cash Flow Volatility had a significant correlation with Corporate Cash Holding (r=-0.1152, p =0.0259), but profitability had no significant correlation with Corporate Cash Holding (r=-0.1152). This find therefore indicated that out of the four determinant factors, three factors (Liquid Asset Substitutes, Net Working Capital and Cash Flow Volatility) were highly correlated with Corporate Cash Holding of the Licensed Commercial Banks in Kenya.

4.4.2 Effect of the Liquid Asset Substitutes on Corporate Cash Holdings

The results of a bivariate regression of liquid asset substitutes on the corporate cash holdings of Kenya's Licensed Commercial Banks are presented in this section. The findings were used to test the null hypothesis **H01**: liquid asset substitutes have no statistically significant influence on Licensed Commercial Banks' corporate cash holdings in Kenya.

Table 8: Effect of the Liquid Asset Substitutes on Corporate Cash Holdings

Source	SS	df	MS		Number of obs	340
					F(1, 372)	328.69
Model	65,676,257	1	65676257.4		Prob > F	0.000
Residual	74,329,677	372	199810.959		R-squared	0.4691
					Adj R-squared	0.4677
Total	140,005,934	373	375351.03		Root MSE	447
cch	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
las	-0.8098	.0446678	-18.13	0.000	-0.8976545	-0.7219883
_cons	39.4223	23.20483	1.70	0.090	-6.206847	85.05134

Key: cch – Corporate Cash Holding, las - Liquid Asset Substitutes

The Liquid Asset Substitutes had a statistically significant influence on Corporate Cash Holdings Licensed Commercial Banks in Kenya (las=-0.8098, p=0.000), according to the study. The R-square for Corporate Cash Holding was determined to be 0.4691, indicating that Liquid Asset Substitutes can explain 47 percent of the variance in Corporate Cash Holding. As a result, other factors outside of this study explained 53% of the variance in corporate cash holdings (see Table 8). The F value for Cash Flow Volatility was significant (F (1, 372) =328.69, p=0.000), showing that Liquid Asset Substitutes have a considerable impact on Licensed Commercial Banks in Kenya that hold corporate cash.

As a result, Liquid Asset Substitutes could be used to forecast the number of Licensed Commercial Banks in Kenya that hold corporate cash.

This analysis suggested that increasing Liquid Asset Substitutes by one unit will result in a 0.8098 multiple unit fall in Corporate Cash Holding Licensed Commercial Banks in Kenya. The beta value on Liquid Asset Substitutes and Corporate Cash Holding Licensed Commercial Banks in Kenya was significant (=-0.8098, p=0.000), according to the results provided in Tables 4.7. This conclusion is backed up by Tayem (2017), who looked at the factors that influence the amount of corporate cash holdings in Jordan, a small emerging market with high market frictions, and discovered that cash substitutes had a negative and significant impact on cash holdings. Chireka and Fakoya (2017) discovered that liquid asset substitutes had a considerable impact on the cash holding levels of retail companies listed on the Johannesburg Stock Exchange. The regression models, therefore, can be used to predict Corporate Cash Holding Licensed Commercial Banks in Kenya is given by

$Y = 39.4223-0.8098las + \varepsilon$ where

Y = Corporate Cash Holding Licensed Commercial Banks in Kenya

las = Liquid Asset Substitutes

H01: There is no statistically significant influence of liquid asset substitutes on licensed corporate cash holdings was thus rejected at the 0.05 level of significance, and the alternate hypothesis was accepted. This means that Licensed Commercial Banks in Kenya's Liquid Asset Substitutes were a predictor of Corporate Cash Holding Commercial Banks in Kenya.

4.4.2 Effect of the Net Working Capital on Corporate Cash Holdings

The results of a bivariate regression of net working capital on corporate cash holdings of Licensed Commercial Banks in Kenya are presented in this section. The findings were used to test the null hypothesis H02: There is no statistically significant influence of net working capital on Licensed Commercial Banks' corporate cash holdings in Kenya.

Table 9: Effect of the Net Working Capital on Corporate Cash Holdings

Source	SS	df	MS		Number of obs	374
					F(1, 372)	14.16
Model	5,133,408	1	5,133,408.48		Prob > F	0.0002
Residual	134,872,526	372	362,560.55		R-squared	0.367
					Adj R-squared	0.341
Total	140,005,934	373	375,351.03		Root MSE	602.13
cch	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
nwc	-0.1380496	.0366879	-3.76	0.000	-0.2101913	-0.065908
_cons	58.47803	31.50664	1.86	0.064	-3.475412	120.4315

Key: cch – Corporate Cash Holding, nwc - Net Working Capital

The study discovered a statistically significant effect of Net Working Capital on Licensed Commercial Banks' Corporate Cash Holdings in Kenya (nwc =-0.1380496, p=0.000). The R-square for Corporate Cash Holding was determined to be 0.367, indicating that Net Working Capital can explain 38 percent of the variance in Corporate Cash Holding. As a result, additional factors outside of this study explained 62 percent of the variance in Corporate Cash Holding (see Table 4.7). The F value for Cash Flow Volatility was substantial (F (1, 372) =14.6, p=0.0002), showing that Net Working Capital has a considerable impact on Licensed Commercial Banks in Kenya. As a result, Net Working Capital could be used to forecast the number of Licensed Commercial Banks in Kenya that hold corporate cash.

This analysis suggested that increasing Net Working Capital by one unit will result in a 0.1380496 multiple unit fall in Corporate Cash Holding Licensed Commercial Banks in Kenya. The beta value on Net Working Capital and Corporate Cash Holding Licensed Commercial Banks in Kenya was significant (=-0.1380496, p=0.0002), according to the results provided in Tables 4.8. This finding is in line with Ali (2016), who conducted research on the determinants of corporate cash holdings in textile industries in Pakistan and discovered a negative and substantial link between net working capital and leverage to cash holding. Flipse (2012) found a negative association between cash ratio and net working capital, business size, leverage, capital expenditures, cash flow, and dividend paying firms. The findings are also consistent with Magerakis, Siriopoulos, and Tsagkanos (2015), who found that net working capital, had a negative impact on cash holdings. The regression models, therefore, can be used to predict Corporate Cash Holding Licensed Commercial Banks in Kenya is given by;

$Y = 58.47803-0.1380496\ nwc + \varepsilon$ where

Y = Corporate Cash Holding Licensed Commercial Banks in Kenya

nwc = Net Working Capital

As a result, the null hypothesis HO1: There is no statistically significant influence of net working capital on the corporate cash holdings of Licensed Commercial Banks in Kenya was rejected at the 0.05 level of significance, and the alternate hypothesis was accepted. This means that Net Working Capital was a predictor of Licensed Commercial Banks' corporate cash holdings in Kenya.

4.4.3 Effect of the Cash Flow Volatility on Corporate Cash Holdings

The results of a bivariate regression of cash flow volatility on the corporate cash holdings of Licensed Commercial Banks in Kenya are presented in this section. The

findings were used to test the null hypothesis that **H03**: Cash Flow Volatility had no statistically significant influence on Licensed Commercial Banks' corporate cash holdings in Kenya.

Table 10: Effect of the Cash Flow Volatility on Corporate Cash Holdings

Source	SS	df	MS		Number of obs	374
					F(1, 372)	5
Model	1858222.11	1	1858222.11		Prob > F	0.0259
Residual	138147712	372	371364.817		R-squared	0.133
					Adj R-squared	0.106
Total	140005934	373	375351.03		Root MSE	609.4
cch	Coef.	Std. Err.	T	P>t	[95% Conf.	Interval]
cfvol	-0.0755294	.0337651	-2.24	0.026	-0.1419237	-0.0091351
_cons	65.8095	31.87986	2.06	0.040	3.12217	128.4968

Key: cch – Corporate Cash Holding, cfvol - Cash Flow Volatility

The study discovered a statistically significant influence of Cash Flow Volatility on Licensed Commercial Banks in Kenya (cfvol=-0.0755294, p=0.000). The R-square for Corporate Cash Holding was determined to be 0.133, indicating that Cash Flow Volatility may explain 13% of the variance in Corporate Cash Holding. As a result, additional factors outside of this study explained 87 percent of the variance in Corporate Cash Holding (see Table 4.9). Corporate Cash Holding had a significant F value (F (1, 372) =5, p=0.0026) implying that there is a significant effect of Cash Flow Volatility on Corporate Cash Holding Licensed Commercial Banks in Kenya. Cash Flow Volatility therefore could be used to predict the Corporate Cash Holding Licensed Commercial Banks in Kenya. This resulted in a fall in Corporate Cash Holding Licensed Commercial Banks in Kenya by =0.0755294 multiple units when Net Working Capital was increased by one unit. The beta value on Net Working Capital and Corporate Cash Holding

Licensed Commercial Banks in Kenya was significant (=-0.1380496, p=0.000), according to the results provided in Tables 4.8. This contradicts Tayem (2017), who discovered that cash flow volatility has a positive significant impact on cash holding levels. "On the other hand, Chireka and Fakoya (2017) discovered that cash flow volatility had a considerable impact on the cash holding levels of retail enterprises listed on the Johannesburg Stock Exchange. The findings also revealed that cash flow unpredictability and corporate cash holdings are positively associated, according to Kariuki, Namusonge, and Orwa (2015).

This result showed that increasing Cash Flow Volatility by one unit results in a 0.0755294 multiple unit fall in Corporate Cash Holding Licensed Commercial Banks in Kenya. The beta value on Cash Flow Volatility and Corporate Cash Holding Licensed Commercial Banks in Kenya was significant (=-0.0755294, p=0.026), according to the results provided in Tables 4.9. As a result, the regression models can be used to forecast Corporate Cash Holding Licensed Commercial Banks in Kenya.

Y = 65.8095-0.0755294 cfvol + ε where

Y = Corporate Cash Holding Licensed Commercial Banks in Kenya

Cfvol = Cash Flow Volatility

The null hypothesis **$H0_3$:** there is no statistically significant effect of Cash Flow Volatility on the Corporate Cash Holdings of Licensed was therefore rejected at 0.05 level of significance and alternate hypothesis accepted. This finding implies that Cash Flow Volatility by Licensed Commercial Banks in Kenya was a predictor of Corporate Cash Holding Commercial Banks in Kenya.

4.4.3 Effect of the Profitability on Corporate Cash Holdings

The results of a bivariate regression of cash flow volatility on the corporate cash holdings of Licensed Commercial Banks in Kenya are presented in this section. The findings were used to test the null hypothesis that H03: Cash Flow Volatility had no statistically significant influence on Licensed Commercial Banks' corporate cash holdings in Kenya.

Table 11: Effect of Profitability on Corporate Cash Holdings

Source	SS	df	MS		Number of obs	340
					F(1, 372)	0.07
Model	25257.698	1	25257.698		Prob > F	0.7957
Residual	139980676	372	376292.141		R-squared	0.002
					Adj R-squared	-0.025
Total	140005934	373	375351.03		Root MSE	613.43
cch	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
profit	-2.701133	10.42585	-0.26	0.796	-23.20213	17.79987
_cons	77.71118	31.99609	2.43	0.016	14.79531	140.6271

Key: cch – Corporate Cash Holding, ROA – Returns on Asset

Profitability has a statistically insignificant effect on Corporate Cash Holdings Licensed Commercial Banks in Kenya (p=0.796>0.05), according to the study. The R-square for Corporate Cash Holding was determined to be 0.002, indicating that profitability can explain 0.2 percent of the variance in Corporate Cash Holding. As a result, other factors outside of this study explained 99.8% of the variance in corporate cash holdings (see Table 4.10). The F value for Corporate Cash Holding was significant (F (1, 372) =0.7, p=0.796>0.05), showing that profitability has no influence on Licensed Commercial Banks in Kenya that hold Corporate Cash as a result, profitability could not be utilized to forecast the number of Licensed Commercial Banks in Kenya that hold corporate cash.

This study contradicts Shabbir, Hashmi, and Chaudhary (2016) and Ali, (2016), who found that business profitability, has a favorable impact on corporate cash holdings. At the 0.05 level of significance, the null hypothesis H04: there is no statistically significant effect of profitability on Licensed Corporate Cash Holdings was accepted, while the alternate hypothesis was rejected. This means that the profitability of Kenya's Licensed Commercial Banks was not a predictor of the profitability of Kenya's Corporate Cash Holding Commercial Banks.

4.4.5 Effect of the Determinant Factors on Corporate Cash Holdings

The section presents the results of the combined selected factors determining the corporate cash holdings of Licensed Commercial Banks in Kenya (liquid asset substitutes, net working capital, cash flow volatility and profitability.

Table 12: Effect of the Determinant Factors on Corporate Cash Holdings

Source	SS	df	MS		Number of obs	340	
					F(4, 369)		111.36
Model	76573265.6	4	19143316.4		Prob > F	0.000	
Residual	63432668.5	369	171904.251		R-Squared	0.5469	
					Adj R-squared		0.542
Total	140005934	373	375351.03		Root MSE	414.61	
cch	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]	
las	-.8123874	.0414366	-19.61	0.000	-0.894	-0.730906	
nwc	-.5323894	.0749991	-7.10	0.000	-0.680	-0.3849102	
cfvol	.3722117	.0682038	5.46	0.000	0.238	0.5063286	
profit	-5.269003	7.095015	-0.74	0.458	-19.221	8.682731	
_cons	24.73961	21.92829	1.13	0.260	-18.380	67.85969	

Key: cch – Corporate Cash Holding, las - Liquid Asset Substitutes, nwc – Net Working Capital and cfvol - Cash Flow Volatility.

The determining factors had a statistically significant effect on Corporate Cash Holdings Licensed Commercial Banks in Kenya (p=.000), according to the study. The R-square for Corporate Cash Holding was determined to be 0.5469, indicating that determinant factors can explain 55 percent of the variance in Corporate Cash Holding. As a result, other factors outside of this study explained 45 percent of the variance in corporate cash holdings (see Table 4.11). The F value for Corporate Cash Holding was significant (F (4, 369) =111.36, p=0.000), indicating that the determinant factors had a significant impact on Kenyan Licensed Commercial Banks that hold corporate cash. The determinant factors therefore could be used to predict the Corporate Cash Holding Licensed Commercial Banks in Kenya.

First, an increase in Liquid Asset Substitutes by one unit will result in a 0.8123874 multiple unit drop in Corporate Cash Holding Licensed Commercial Banks in Kenya. The beta value on Liquid Asset Substitute and Corporate Cash Holding Licensed Commercial Banks in Kenya was significant (=-0. 8123874, p=0.000), according to the results provided in Tables 4.11. Second, a one-unit rise in Net Working Capital will result in a 0.5323894 multiple-unit fall in Corporate Cash Holding Licensed Commercial Banks in Kenya. The beta value on Net Working Capital and Corporate Cash Holding Licensed Commercial Banks in Kenya was significant (=-0.5323894, p=0.000), according to the findings. Third, a one-unit rise in Cash Flow Volatility will result in a 0.3722117 multiple unit fall in Corporate Cash Holding Licensed Commercial Banks in Kenya. The beta value on Cash Flow Volatility and Corporate Cash Holding Licensed Commercial Banks in Kenya was significant (=-0.3722117, p=0.000), according to the findings. Corporate Cash Holding Licensed Commercial Banks in Kenya did not have a strong association with profitability. The full regression is therefore as follows;

Y = 24.73961-0.8123874 las-0.5323894 nwc-0.3722117 cfvol + ε where

Y = Corporate Cash Holding Licensed Commercial Banks in Kenya

las = liquid Asset Substitute

nwc = Net Working Capital

cfvol = Cash Flow Volatility

profit = Profitability

4.4.6 Moderating Effect of Government Taxation

The section presents the results of the moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya. This objective was analyzed by the null hypothesis; **$H0_5$:** There is no statistically significant moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

Table 13: The Moderating Effect of Government Taxation

Source	SS	df	MS		Number of obs	374
					F(5, 368)	88.85
Model	76573310.9	5	15314662.2		Prob > F	0
Residual	63432623.2	368	172371.259		R-squared	0.5469
					Adj R-squared	0.5408
Total	140005934	373	375351.03		Root MSE	415.18
cch	Coef.	Std. Error	t-	P>t	[95% Conf.	Interval]
las - .8123874	0.0414366	.0414366 19.6100	-	0.000	-0.894	-0.7309
nwc - .5323894	0.0749991	.0749991 7.1000	-	0.000	-0.680	-0.3849
cfvol .3722117	0.0682038	.0682038 5.4600		0.000	0.238	0.50633
profit - 5.269003	7.095015	7.095015 0.7400	-	0.458	-19.221	8.68273
_cons 24.73961	21.92829	21.92829 1.1300		0.260	-18.380	67.8597
las	-0.8124645	.0417647	-19.45	0.000	-0.894592	-0.7303
nwc	-0.5323271	.0751991	-7.08	0.000	-0.680201	-0.3845
cfvol	0.3722154	.0682968	5.45	0.000	0.2379145	0.50652
profit	-5.269494	7.10471	-0.74	0.459	-19.24042	8.70143
tax	-0.4081107	25.18218	-0.02	0.987	-49.92715	49.1109
_cons	26.78688	128.2197	0.21	0.835	-225.3483	278.922

Key: cch – Corporate Cash Holding, las - Liquid Asset Substitutes, nwc – Net Working Capital and cfvol - Cash Flow Volatility, tax – government taxation

Table 14: Model Summary of Moderating Effect of Government Taxation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.647[a]	0.546	0.542	414.61
2	.641[b]	0.546	0.542	415.18

The R2 before and after the interaction of the moderating variable government taxation was 0.546a, according to Table 4.14. The R2 score indicates how well the independent variables Liquid Asset Substitutes, Net Working Capital, and Cash Flow Volatility, as well as the moderator variable government taxation, explain the dependent variable "corporate cash holdings of Licensed Commercial Banks in Kenya." Because R2 was the same 0.546 before and after the interaction of government taxes, it was statistically proven that government taxation had no moderating influence on the link between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya. At the 0.05 level of significance, the null hypothesis H05: there is no statistically significant moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya was accepted, and the alternative hypothesis was rejected. As a result, this research statistically established that government taxation had no effect on the relationship between the drivers of the selected parameters and the corporate cash holdings of Kenya's Licensed Commercial Banks. Interaction of government taxation hence cannot change the established relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the summary of the major findings in line with the set objectives, the conclusions which are based on research objectives and the recommendations based on the findings.

5.2 Summary

The general objective of the study was to analyze selected factors determining the corporate cash holdings of Commercial Banks in Kenya. To achieve this objective, the study investigated the effect of liquid asset substitutes on the corporate cash holdings of Commercial Banks in Kenya; determined the effect of net working capital on the corporate cash holdings of Commercial Banks in Kenya; examined the effect of cash flow volatility on the corporate cash holdings of Commercial Banks in Kenya; assessed the effect of profitability on the corporate cash holdings of Commercial Banks in Kenya and analyzed the moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

5.2.2 Liquid Asset Substitutes and Corporate Cash Holding

The study established a statistically significant effect of the Liquid Asset Substitutes on Corporate Cash Holdings Licensed Commercial Banks in Kenya with 47% of the variance in Corporate Cash Holding can be explained by Liquid Asset Substitutes. The amplification of this finding was that Liquid Asset Substitutes significantly affected Corporate Cash Holding of the Licensed Commercial Banks in Kenya and therefore could be used to predict the Corporate Cash Holding of Commercial Banks in Kenya. This finding indicated that an increase in Liquid Asset Substitutes by 1 unit will lead to a

decrease in Corporate Cash Holding of Commercial Banks in Kenya by 0.8098 multiple units at significance level less than 0.05.

5.2.3 Net Working Capital and Corporate Cash Holding

Concerning the relationship between Net Working Capital and Corporate Cash Holding, the study established a statistically significant effect of the Net Working Capital on Corporate Cash Holdings of Commercial Banks in Kenya with 38% of the variance in Corporate Cash Holding can be explained by Net Working Capital whereas 62% of the variance in Corporate Cash Holding was explained by other factors outside this study. The study indicated that Net Working Capital significantly affected Corporate Cash Holding of the Licensed Commercial Banks in Kenya and therefore could be used to predict the Corporate Cash Holding of Commercial Banks in Kenya. An increase in Net Working Capital by 1 unit will lead to a decrease in Corporate Cash Holding of Commercial Banks in Kenya by 0.1380496 multiple units at significance level less than 0.05.

5.2.4 Cash Flow Volatility and Corporate Cash Holding

Further findings on the effect of Cash Flow Volatility and Corporate Cash Holding also established a statistically significant effect of the Cash Flow Volatility on Corporate Cash Holdings of Commercial Banks in Kenya with 38% of the variance in Corporate Cash Holding can be explained by Cash Flow Volatility whereas 62% of the variance in Corporate Cash Holding was explained by other factors outside this study. The finding indicated that Cash Flow Volatility significantly affected Corporate Cash Holding of Commercial Banks in Kenya and therefore could be used to predict the Corporate Cash Holdings of the Licensed Commercial Banks in Kenya. An increase in Cash Flow Volatility by 1 unit will lead to a decrease in Corporate Cash Holding of Commercial Banks in Kenya by 0.0755294 multiple units at significance level less than 0.05.

5.2.5 Profitability and Corporate Cash Holding

One other findings on the effect of profitability and Corporate Cash Holding also established a statistically insignificant effect of the profitability on Corporate Cash Holdings of Commercial Banks in Kenya with 0.2% of the variance in Corporate Cash Holding can be explained by profitability whereas 98.8% of the variance in Corporate Cash Holding was explained by other factors outside this study. This finding implied that profitability did not affect Corporate Cash Holding of Commercial Banks in Kenya and therefore could not be used to predict the Corporate Cash Holding of the Commercial Banks in Kenya.

5.2.6 Moderating Effect of Government Taxation

The study established that R^2 before and after the interaction of the moderating variable government taxation was 0.546^a. The value of R^2 shows the extent to which the dependent variable "corporate cash holdings of Commercial Banks in Kenya is explained by the independent variables; Liquid Asset Substitutes, Net Working Capital and Cash Flow Volatility, alongside the moderator variable government taxation. Since the value of R^2 before and after the interaction of government taxation was the same 0.546, it was statistically proved that government taxation had no moderating effect on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya. Interaction of government taxation hence cannot change the established relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

5.3 Conclusions

The general objective of the study was to analyze selected factors determining the corporate cash holdings of Commercial Banks in Kenya. The study drew the conclusions based on the set objectives answered by the test results from the study hypotheses. The

first objective of the study was to investigate the effect of liquid asset substitutes on the corporate cash holdings of Licensed Commercial Banks in Kenya. The null hypothesis that **$H0_1$:** there is no statistically significant effect of liquid asset substitutes on the corporate cash holdings of Commercial Banks in Kenya was rejected at 0.05 level of significance and alternate hypothesis accepted. The study therefore concluded that Liquid Asset Substitutes significantly affected Corporate Cash Holding of the Commercial Banks in Kenya.

The second objective of the study was to determine the effect of net working capital on the corporate cash holdings of Commercial Banks in Kenya. The null hypothesis that **$H0_2$:** there is no statistically significant effect of net working capital on the corporate cash holdings of Commercial Banks in Kenya was rejected at 0.05 level of significance and alternate hypothesis accepted. The study therefore concluded that net working capital significantly affected Corporate Cash Holding of Commercial Banks in Kenya. The third objective was to examine the effect of cash flow volatility on the corporate cash holdings of Commercial Banks in Kenya. The null hypothesis that **$H0_3$:** there is no statistically significant effect of cash flow volatility on the corporate cash holdings of Commercial Banks in Kenya was rejected at 0.05 level of significance and alternate hypothesis accepted. The study therefore concluded that cash flow volatility significantly affected Corporate Cash Holding of Commercial Banks in Kenya.

The fourth objective of the study was to assess the effect of profitability on the corporate cash holdings of Commercial Banks in Kenya. The null hypothesis that **$H0_4$:** there is no statistically significant effect of profitability on the corporate cash holdings of Commercial Banks in Kenya was accepted at 0.05 level of significance and alternate hypothesis rejected. The study therefore concluded that profitability did not affect Corporate Cash Holding by Licensed Commercial Banks in Kenya. The fifth hypothesis

was to analyze the moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya. The null hypothesis that **$H0_5$:** there is no statistically significant moderating effect of government taxation on the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya was accepted at 0.05 level of significance and alternate hypothesis rejected. The study therefore concluded that government taxation does not moderate the relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya. Interaction of government taxation did not change the established relationship between the determinants of the selected factors on corporate cash holdings of Licensed Commercial Banks in Kenya.

5.4 Recommendations

5.4.1 Recommendation for Policy and Practice

The researcher made the following recommendations based on the study findings and conclusions on the selected factors determining Commercial Banks' corporate cash holdings in Kenya: Each licensed Commercial bank in Kenya should develop internal policies that stipulate their respective corporate cash holding process so that the banks can achieve their objectives. This can be accomplished by implementing effective and efficient corporate cash management methods that are proactive in balancing corporate cash holdings with intended results. Bank cash holding policies should be value maximization driven and applied in a proactive manner. Second, the study suggests that because banks trade in cash and cash equivalents, their cash holding decisions should be based on value maximization and businesses should keep cash according to their investment needs. Managers of Kenya's licensed commercial banks would need to assess

their cash holding procedures to ensure that they comply with best practices that advocate for alignment of investment objectives and cash holding patterns.

Finally, the study recommends that banks should assess their liquid asset alternatives, net working capital, and cash flow volatility policies and align them with their corporate cash holding strategies. This is due to the fact that the study discovered a link between these three criteria and the corporate cash holding practices of Kenya's licensed commercial banks. Although the study found that profitability had no impact on banks' corporate cash holding practices, it is critical that banks match their corporate cash holding policies with profitability strategic goals, as commercial banks prioritize profit over all other socio-economic purposes.

5.4.1 Recommendation for Areas of Future Research

Other factors that influence corporate cash holding in Kenyan commercial banks were not examined in the current analysis. Corporate governance practices, profits quality, dividend distributions, retained earnings, and capital structures are only a few of these issues. This suggests that commercial banks' cash holdings of corporate cash are influenced by a variety of different factors. More research should be done on the impact of elements such as corporate governance practices, Earnings quality, dividend distributions, retained earnings, and capital structure on corporate funds held by Kenyan commercial banks are all factors to consider. The study's findings will contribute to closing the knowledge gap on corporate cash holdings that the current inquiry did not address.

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APPENDICES

Appendix I: Research Authorization Letter

KABARAK UNIVERSITY

Private Bag - 20157
KABARAK, KENYA
http://kabarak.ac.ke/institute-postgraduate-studies/

Tel: 0773 265 999
E-mail: directorpostgraduate@kabarak.ac.ke

BOARD OF POSTGRADUATE STUDIES

17th June, 2019

The Director General
National Commission for Science, Technology & Innovation (NACOSTI)
P.O. Box 30623 – 00100
NAIROBI

Dear Sir/Madam,

RE: NOAH KIPLAGAT- REG. NO. GMF/ON/2342/09/16

The above named is a Masters student at Kabarak University in the School of Business. He is carrying out research entitled **"*Factors Determining the Corporate Cash Holdings of Commercial Banks in Kenya*".** He has defended his proposal and has been authorized to proceed with field research.

The information obtained in the course of this research will be used for academic purposes only and will be treated with utmost confidentiality.

Please provide him with a research permit to enable him to undertake his research.

KABARAK UNIVERSITY DIRECTOR POST GRADUATE STUDIES 17 JUN 2019 PRIVATE BAG 20157, KABARAK

Thank you.

Yours faithfully,

Dr. Betty Jeruto Tikoko
DIRECTOR, POSTGRADUATE STUDIES

Kabarak University Moral Code

As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)

Appendix II: Permit from the Ministry of Education

Republic of Kenya

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

When replying please quote

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

Ref: RCE/NRB/GEN/VOL.1

DATE: 9th July, 2019

Noah Kipkemoi Kiplagat
Kabarak University
Private Bag - 20157
KABARAK

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on *"Factors determining the corporate cash holdings of commercial banks in Kenya."*

This office has no objection and authority is hereby granted for a period ending 5th July, 2020 as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

REGIONAL DIRECTOR OF EDUCATION NAIROBI 10 JUL 2019 MINISTRY OF EDUCATION P.O. Box 74629, NAIROBI

KINOTI KIOGORA
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI

Copy to: Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI

Appendix III: National Council for Science, Technology and Innovation Research Permit

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/19/79015/31904** Date: **9th July 2019**

Noah Kipkemoi Kiplagat
Kabarak University
Private Bag - 20157
KABARAK.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Factors determining the corporate cash holdings of commercial banks in Kenya."*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **5th July, 2020.**

You are advised to report to **the County Commissioner, and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

DR. MOSES RUGUTT, PhD, OGW.
DIRECTOR-GENERAL/CEO

Copy to:

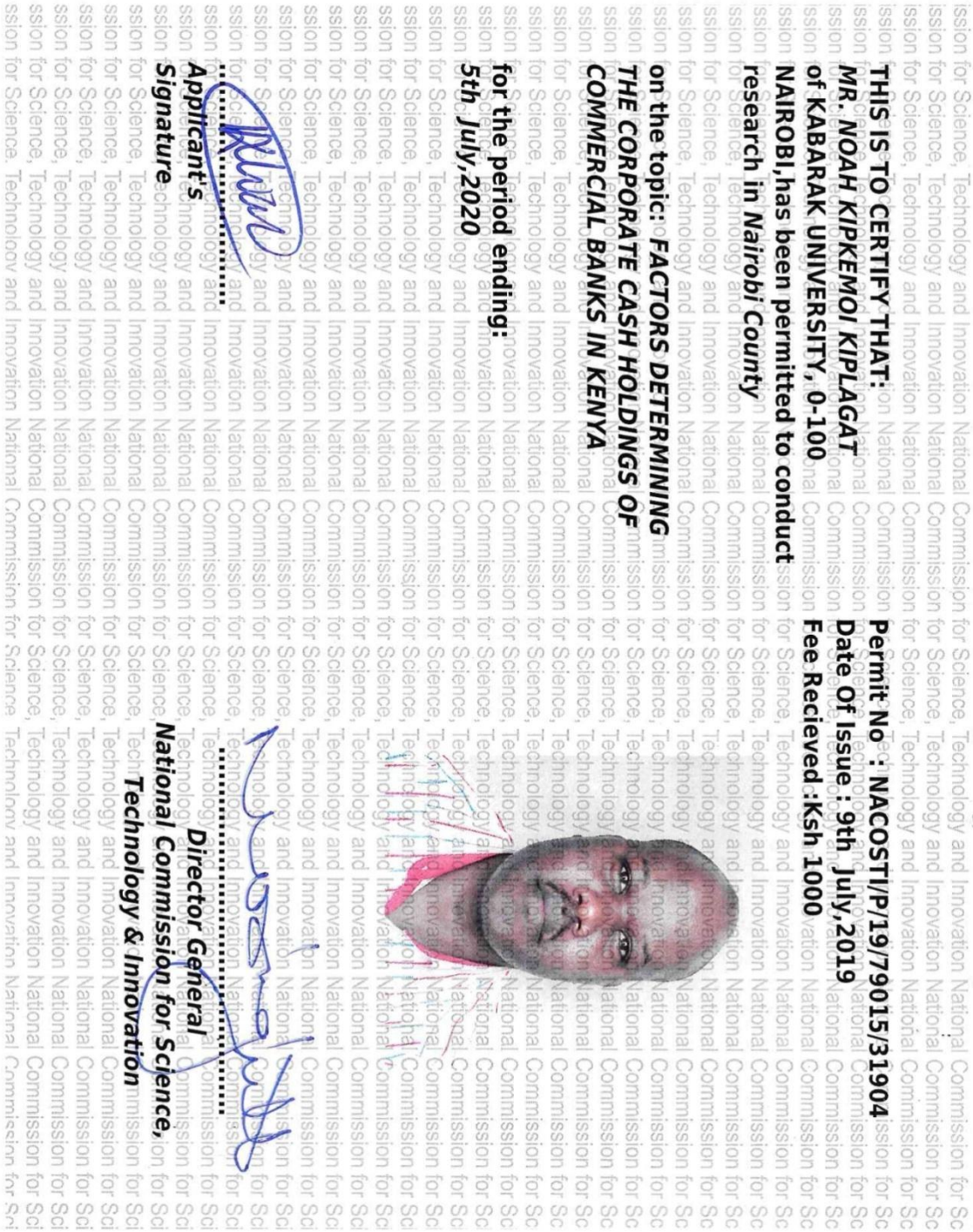
The County Commissioner
Nairobi County.

15/7/2019

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341866

The County Director of Education
Nairobi County.

Appendix IV: National Council for Science, Technology and Innovation Research Permit


THIS IS TO CERTIFY THAT:
Permit No : NACOSTI/P/19/79015/31904
MR. NOAH KIPKEMOI KIPLAGAT
Date Of Issue : 9th July,2019
of KABARAK UNIVERSITY, 0-100
Fee Recieved :Ksh 1000
NAIROBI,has been permitted to conduct
research in Nairobi County
on the topic: FACTORS DETERMINING
THE CORPORATE CASH HOLDINGS OF
COMMERCIAL BANKS IN KENYA
for the period ending:
5th July,2020
.....
Applicant's
Signature
.....
Director General
National Commission for Science,
Technology & Innovation

Appendix V: Data Collection Sheet

Year	**LqAS**	**NWC**	**CFV**	**ROA**	**CCH**
2009					
2009					
2010					
2011					
2012					
2013					
2014					
2015					
2016					
2017					
2018					

Key: LqAS = Liquid Asset Substitutes, NWC = Net Working Capital, CFV = cash flow volatility, ROA= Returns on Asset, CCH = Corporate Cash Holdings

Appendix VI: List of Licensed Commercial Banks According to Tier

SNO	BANK	TIER
	TIER 1	
1	Co-operative Bank of Kenya	1
2	Kenya Commercial Bank(KCB)	1
3	Equity Bank	1
4	Barclays Bank	1
5	Commercial Bank of Africa(CBA)	1
6	Standard Chartered Bank	1
	TIER 2	
1	Family Bank	2
2	I&M Bank	2
3	NIC Bank	2
4	Diamond Trust Bank	2
5	Bank of Africa	2
6	Housing Finance	2
7	Ecobank	2
8	Prime Bank	2
9	Bank of Baroda	2
10	CFC Stanbic Bank	2
11	Citibank	2
12	Guaranty Trust Bank	2
13	National Bank	2
14	Bank of India	2
	TIER 3	
1	Jamii Bora Bank	3
2	ABC Bank	3
3	Credit Bank	3
4	Paramount Universal	3
5	Consolidated and Development Bank	3
6	Fidelity Bank	3

7	Equatorial Commercial Bank	3
8	Giro Bank	3
9	Guardian Bank	3
10	Middle East Bank	3
11	Oriental Commercial Bank	3
12	Paramount Universal Bank	3
13	Trans-National Bank	3
14	Victoria Bank	3
15	First Community Bank	3
16	Habib A.G Zurich Bank	3
17	Habib Bank	3
18	Gulf Africa	3
19	Sidian Bank	3
20	UBA Bank	3
21	Consolidated Bank	3
22	Development Bank	3