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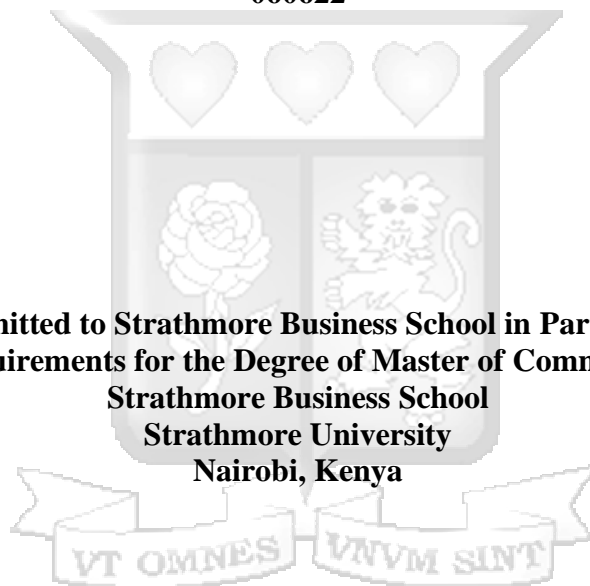
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**MODERATING EFFECTS OF INSTITUTIONAL OWNERSHIP ON DETERMINANTS
OF CASH HOLDINGS OF NON-FINANCIAL FIRMS LISTED ON NAIROBI
SECURITIES EXCHANGE**

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060622



**A Dissertation Submitted to Strathmore Business School in Partial Fulfilment of the
Requirements for the Degree of Master of Commerce
Strathmore Business School
Strathmore University
Nairobi, Kenya**

JUNE, 2023

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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DEDICATION

I am grateful to the Almighty for his guidance, strength, and wisdom during my study. I extend my appreciation to my supervisor, Dr. Farida Abdul, for her constructive suggestions, right criticisms and guidance that helped me stay on course to finish the project.

A special thanks to my family, for their boundless love and sacrifices, which made this endeavor possible and my friends, who provided laughter, camaraderie, and occasional distractions when needed.

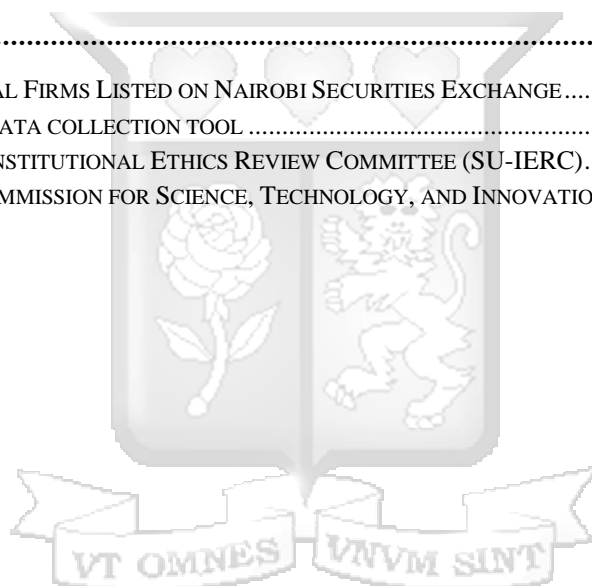
I am indebted to my colleagues for their understanding and consideration during my study period.



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DEFINITION OF TERMS

Cash holdings- Cash plus cash equivalents that can be converted into cash with minimal value variation (Chen & Wu,2019)

Non-financial firms- non-financial firms are businesses that provide goods or services for the marketplace rather than offering financial services such as banking, insurance, or investment management (Arikawa & Mitsudome ,2021)



ABSTRACT

Cash is very crucial for businesses, impacting liquidity, operational flexibility, and strategic decision-making. This study investigates the moderating effects of institutional ownership on determinants of cash holdings in non-financial firms listed on the Nairobi Securities Exchange (NSE), factoring the unprecedented challenges posed by the COVID-19 pandemic. The pandemic has significantly altered the economic landscape, prompting firms to reassess their cash management strategies. The objectives of the study were; to establish the effect of profitability on cash holding of non-financial firms listed on the NSE, to establish the effect of firm size on cash holding of non-financial firms listed on the NSE, to establish the effect of board size on cash holdings of non-financial firms listed on the NSE, to establish the effect of board gender on cash holdings of non-financial firms listed on the NSE, to establish the effect of growth opportunities on cash holdings of non-financial firms listed on the NSE, to establish the effect of dividend payment on cash holdings of non-financial firms listed on the NSE, to determine the moderating effect of institutional ownership on cash holding and the determinants on non-financial firms listed on the NSE. The study used shiftability theory, trade off theory, pecking order and agency theory. The research design used in this study was longitudinal. For the period 2011-2022, a population of 44 non-financial firms listed on the Nairobi Securities Exchange was conducted. Out of the 44 firms, the research managed to get data for 31 firms. The population of the study comprised of agricultural, commercial and services, automobile and accessories, construction and allied, energy and petroleum, investment and services, manufacturing, and real estate investment trusts. Secondary data was derived from yearly reports and financial statements. The methodology applied was Arellano bond dynamic panel data model to test determinants of cash holding using shiftability, the trade off, pecking order and agency theories. The study found firm size had a negative significant relationship with cash holdings that was consistent with shiftability theory while profitability, board size, growth opportunities had a positive significant relationship that were consistent with pecking order, agency, and trade off theory. The study recommends guidelines to be set for different size firms as one-size-fits-all policies may not be suitable, and larger firms might have different liquidity needs compared to smaller ones. The study also recommends enforcement of disclosure requirements that mandate companies to report on the influence of institutional ownership on financial decisions, including cash management.

CHAPTER ONE

INTRODUCTION

This chapter provides an overview of the study's background study. It presents an in-depth examination of the determinants of corporate cash holding the problem statement, objectives, scope of the study and the significance of the study.

1.1 Background of the study

In a business environment cash is known to be the king because it has a direct influence on the value of the firm and determines operations, investment, payouts, and financing (Chen et al.,2020). Cash holdings provide firms with capability of making independent decisions due to financial freedom and no external interference (Al-Najjar & Clark, 2017). Khuong, H., & Thu, P. A. (2019) state that cash is known to be one of the riskier liquid assets and an increase in cash flows helps an organization in making better decision practices. Further, Elbadry (2018) states that in recent years, cash holding management policies have become essential in organizations. Organizations may face bankruptcy if they cannot correctly maintain their liquidity position even if they are profitable. In addition, Gill and Shah (2012) mention that cash holdings are the liquid assets used to distribute among shareholders or finance positive net present value projects. Islam et al. (2020) argue that cash holdings sensitivity varies in emerging, frontier and developed markets as the development of financial aspect may bring down considerably the affectability of cash holdings.

Corporate cash holding is one of the most essential issues and strategies of corporate financial management, which not only relates to corporate operation and development but also relates to the corporate governance and the institutional environment (Zaheer, 2017). A cash holding strategy is an important financial decision for firms. However, Corporate cash holding pattern varies from one company to another. The rationale behind such decisions differs depending on the firm's capital structure. Most companies hold a high level of cash which has an additional cost (Pekyi&Wenfang,2020). There are generally six motives that explain why companies, especially non-financial, hold cash. The first three, precaution, speculative and transaction are based on the liquidity preference theory by (Keynes,1936). The other motives are tax motive advanced by (Hartzell, Titman&Twite,2007) especially in the US whereby American companies with

operations overseas held back huge cash balances with the subsidiaries in foreign countries to avoid their profits being taxed. The loan covenant motive whereby firms have been granted loans by financial institutions are bound by an agreement to hold certain amount of liquidity and this is a form of cash holding threshold for firms Wormald et al. (2015) and finally the agency motive developed by (Jensen,1986).

Cash holding decisions may be affected by market imperfections such as agency conflicts, financial distress, or information asymmetry (Garcia-Teruel & Martinez Solano,2008). Agency conflicts and information asymmetry between creditors and shareholders make it expensive for firms to obtain funds hence firms build up their monetary assets to reduce dependence on external financing. On the other hand, managers have the advantage to accumulate cash balances to increase the amount of cash under their control which may be detrimental to shareholders as they may not be paid dividends (Jensen,1986). Accumulation of cash holdings for non-financial firms may reduce the likelihood of financial distress (Garcia-Teruel & Martinez Solano,2008).

Cash has been identified as an important strategic tool (Fresand, 2010). A company may use cash for entry to new markets, to fund new products or channels, superior pricing leading to an increase in barrier entry to the markets among other strategic activities which lead to growth of the non-financial firms (Benoit,1984). Ongudipe et al. (2012) found uniqueness in their conclusion on factors affecting cash holding on Nigerian market whereby their results were almost consistent with previous studies except for findings of insignificant relationship between size and growth opportunities and cash holding in Nigeria which contradicts previous findings in other countries. The current data thus represent distinctive features of cash holdings of Nigerian enterprises.

In Kenya, Mwaniki (2022) states that Safaricom held the largest cash at 30.7B from 26.7B by the closure of its financial year in March 2022. This was due to the uncertainty of the economy brought by the COVID 19 pandemic. Further the Kenya financial stability CBK (2021) states during the pandemic, both the short term and long-term debt declined by 2.1 percent and 3.2 percent in 2020 respectively showing low solvency risk. In addition, firms were very cautious in accumulating debt during that period due to slow economic growth. The current assets to current liabilities declined to 3.2 percent in 2019 and 2020 from 4.7 in 2018, this shows, there was increase in liquidity risk for non-financial corporates listed on Nairobi Securities Exchange.

Across the span of national and international studies, the conclusions about the factors that influence cash holding have been the most disparate. So, this research seeks to establish the cash holding patterns of non-financial firms in Kenya as well as the determinants of the cash holdings and if the findings will be consistent as the international and African studies.

1.1.1 Determinants of Cash holdings

Larger companies typically hold more cash than smaller companies because they may have more investment opportunities and greater financial flexibility, which necessitates higher levels of cash reserves. Firms with higher profits tend to hold more cash because they have more financial resources to devote to cash reserves, and they may use their cash reserves to fund future. Firm size will be used as a proxy for a firm's ability to access capital markets in this study. According to Rashid and Ashfaq (2017), large firms can profit more through economies of scale, so holding more cash reserves is irrational.

In Kenya, (Samuel et al,2015) studied the determinants of corporate cash holdings of private manufacturing firms in Kenya and found firm size, leverage, cash flow variability and likelihood of financial distress as the determinants of cash holdings. Further Constantine (2018) studied determinants of corporate cash holdings of non-financial firms listed on NSE for a period of 2002 to 2017 and found leverage, firm size, and cash flows as determinants of cash holdings. The study will therefore adopt firm size and profitability. Firm size has changed over the years, and this is likely to add on to literature of studies done in Kenya. Profitability has not been studied locally and this study will provide insight into how it affects cash holdings.

When determining the amount of cash available, managers must make difficult financial decisions. When there is a separation between ownership and control, decisions about whether to increase or decrease cash holdings may result in free cash flow agency costs (Kalcheva et al., 2007); (Opler et al.,1999). The agency conflicts between shareholders and management are crucial in determining the optimal amount of cash under these conditions (Dittmar et al.,2003). Indeed, in the absence of viable investment opportunities, managers may choose to use liquid resources in a discretionary manner, and thus invest in unproductive ventures at the expense of company value (Pinkowitz et al.,2006). In this case, a strong corporate governance framework can aid in alleviating the agency issues that arise because of such liquidity (Dittmar et al.,2003).

Sharma et al. (2020) and Kakabadse et al. (2020) suggest that having more women on the board is associated with higher cash holdings because they bring diverse perspectives, skills, and experience that can improve strategic cash management decision-making. These researchers find that (Sharma et al.,2020) and (Kakabadse et al.,2020) gender-diverse boards are more risk-averse, which leads them to support higher levels of cash reserves to mitigate potential financial distress. However, the relationship between board gender diversity and cash holdings may be influenced by the firm's cultural and institutional context. Fernández-Méndez et al. (2018) found no correlation between gender diversity and cash holdings, while Yan and Wang (2021) found a negative correlation.

The amount of funds required in the future to support the company's growth is determined by the company's rapid growth. If a company's growth rate is consistent, funding can come from the capital market or foreign investment, allowing the company to pay high dividends (Adiputra & Nataherwin,2020). Several studies have shown that the greater the company's growth opportunity, the greater the cash held by the company (Opler et al.,1999). Growth opportunity has a significant and positive effect on cash holding, according to research by (Jinkar et al.,2013); (Syarief,2013).

The balance sheet and cash flow of a company are heavily influenced by its growth. The establishment of investment activities raises investors' expectations of a higher rate of return (Panghulu et al.,2015). The opening of investment opportunities in a company sends a positive signal to investors about the company's future growth, which indirectly affects its value.

The greater the investment opportunity, the greater the company's ability to generate returns that can be used as cash reserves. Companies with high-growth prospects will prefer to keep excess liquid assets on hand (Adiputra & Nataherwin,2020). Ullah et al. (2018) states that firms with risky debt and higher growth opportunities on their balance sheet are likely to face problems with under investment. Organizations with opportunities for growth accumulate extra cash to avoid getting into financial distress.

1.1.2 Cash holdings.

Cash being the most significant resource to start and keep a business running, every organization must make sure that it holds a sufficient level of cash for running their operations smoothly. Insufficient cash availability can disrupt organization operations leading to insolvency. Cash holding is characterized as the set of promptly accessible cash and assets easily convertible into cash with maturity less than three months.

Cash holdings enable a variety of investment opportunities and underpricing issues (Cossin & Hricko ,2004). A satisfactory cash level is required for the smooth operation of the business. Managers must be able to hold a significant amount of a firm's advantages of liquid assets to invest and keep cash within the organization (Masood et al.,2018). Cash holding is defined as money that is readily available for transfer among speculators and investment in physical assets. Cash holdings are defined as cash plus cash equivalents that can be converted into cash with little variation in value (Ross et al., 2004). According to Kariuki et al. (2015) cash holding will include cash on hand and the bank, as well as short-term interests in currency showcase securities, such as treasury bills.

Irfan (2021) states that cash holding enables the company to maintain a strong financial position and avoid potential financial distress. Financial distress is a condition in which a firm may have difficulty paying the interest and borrowed principal on time; therefore, the availability of cash helps firms avoid such difficulties. Further Ferreira and Vilela (2004) say the primary benefits of cash holding are to provide a security measure that protects the organization from selling its current resources. Holding a specific amount of cash enables businesses to deal with any unexpected unfavorable situation that necessitates immediate action.

Cash gives businesses financial freedom by allowing them to make financial decisions on their own without outside intervention, hence its worth and size cannot be downplayed (Al-Najjar & Clark, 2017). Cash is one of the riskier liquid assets, and an increase in cash flow can help with better decision-making processes, claim (Khuong et al.,2019). In this regard, Siddiqua et al. (2019) contend that the pattern of cash holding is often explained by the trade-off, pecking order, and cash flow theory. The factors that influence cash holding have been the subject of extensive research, but the literature from the past suggests that there is still more to learn about these ideas. Firms

should maintain an appropriate liquid position, according to An et al. (2013), to avoid costly external financing for operational and investment needs.

1.1.3 Moderating effect of institutional ownership on independent variables and cash holdings of non-financial firms listed on NSE in Kenya

Institutional ownership is an institution or entity that owns shares in a company (Alfian, 2019). According to Erawati & Wahyuni (2019), institutional ownership is when the government and institutions own shares in companies. Institutional ownership is external to companies such as banks, insurance, and other industries that have shares in the company until the end of the accounting period (Noviani et al., 2019; Wahyuni, 2020). Institutional ownership in the company will increase the monitoring of management performance to be more optimal and transparent (Wahyuni, 2020). Institutional ownership of the company will encourage managers to improve their performance. Research by Alfian (2019), Erawati & Wahyuni (2019), Agatha et al., (2020), and Wahyuni, (2020), measures institutional ownership using the percentage of share ownership by institutions.

Firms with concentrated ownership structure are likely to own a lower level of cash holdings. Large block holders exercise significant influence within their investee companies (Kuan et al., 2011). Large shareholders may closely monitor their companies compared with minority shareholders, resulting in lower agency costs and financing costs (Dittmar & Mahrt-Smith, 2007; Guney et al., 2007; Harford et al., 2008; Kuan et al., 2011). Ozkan and Ozkan (2004) document that the potential conflicts between large shareholders and minority shareholders might induce large shareholders to hoard large amounts of cash under their control, and they may attempt to increase their private benefits of control. The study by Boubakri, Cosset, and Saffar (2013) examines the relationship between institutional ownership and corporate cash holdings in China. Their results indicate a positive association between institutional ownership and cash holdings in Chinese firms. Specifically, the authors find that a one standard deviation increase in institutional ownership is associated with a 0.54 standard deviation increase in cash holdings. They also find that the strength of this relationship depends on the level of investor protection in China. Specifically, the authors find that the positive relationship between institutional ownership and cash holdings is stronger in firms with weaker investor protection. They interpret this finding as suggesting that institutional investors demand higher levels of cash holdings in firms with weaker

investor protection to mitigate agency costs and monitor corporate managers. Nyamongo et al. (2017) explores the relationship between institutional ownership and firm performance in Kenya. While it doesn't directly focus on the moderating role of institutional ownership, it provides insights into the influence of institutional investors on firm performance, which could indirectly inform discussions on moderation. Oduor et al. (2019) investigates the impact of institutional ownership on firm performance in Kenya. Although it doesn't specifically discuss moderation, it provides empirical evidence on the relationship between institutional ownership and firm performance, which could be relevant in understanding the potential moderating effects.

1.1.4 Nonfinancial firms listed on Nairobi securities Exchange.

In 2023, there are 63 corporations listed on the Nairobi Securities Exchange in Kenya. 59 of them have been actively trading for the last five years. The corporations operate in various segments which are agricultural, automobile and accessories, banking, commercial and services, construction and allied, energy and petroleum, insurance, investment, investment and services, manufacturing and allied, telecommunication and real estate investment trusts. The study will focus on the 44 listed non-financial firms that comprise of agricultural, commercial and services, automobile and accessories, construction and allied, energy and petroleum, investment and services, manufacturing, and real estate investment trusts. The 17 financial firms which comprise banks and insurance companies are excluded from the study as their cash holdings are regulated by banking act and insurance act respectively and thus the cash holding may not be a purely management decision.

The study focuses on non-financial firms listed on Nairobi Securities Exchange because NSE is an important indicator of Kenya's economic performance, with listed firms accounting for a significant portion of the country's economic activity. As a result, studying these firms' cash holdings can provide valuable insights into the overall health of the Kenyan economy.

The past few years, some companies have had financial problems which have led to suspension of listing, shutting down business and being placed under receivership. A few of the reasons are the inability to pay their suppliers and failure to honor bank commitments. These firms include ARM cement, Kenya airways, Uchumi supermarket and Mumias sugar company. The study seeks to

gain a better understanding of how these companies manage their cash reserves and how this affects their financial performance and investment opportunities.

1.2 Problem statement

Cash holding play a crucial role in the financial management of non-financial firms whereby it enables the firms to meet short term obligations such as paying salaries without relying on external financing. Despite the crucial role of adequate cash holdings in facilitating financial flexibility and mitigating liquidity risks, some non-financial firms, particularly those listed on the Nairobi Securities Exchange (NSE), continue to grapple with cash flow challenges. While established strategies exist to optimize cash management practices, such as investing idle cash in marketable financial assets, certain firms, exemplified by Kenya Airways, face persistent liquidity failures (CMA,2018). Kenya airways reported a net loss of Ksh.38.62B for the year 2022, an all-time high since 2013 when they started reporting losses. This is mainly attributed to a rise in financing costs (Alushula,2023).

Most studies, e.g., (Kusnadi & Wei, 2011; Bigelli & Sánchez-Vidal, 2012) have concentrated on developed markets such as the United States and Europe, which may not be representative of emerging markets. As a result, the findings may not be applicable to non-financial firms operating in emerging markets like Kenya, where cash management practices and market conditions differ significantly. In Kenya, (Samuel et al,2015) studied the determinants of corporate cash holdings of private manufacturing firms in Kenya and found firm size, leverage, cash flow variability and likelihood of financial distress as the determinants of cash holdings. Further (Constantine,2018) studied determinants of corporate cash holdings of non-financial firms listed on NSE for a period of 2002 to 2017 and found leverage, firm size, and cash flows as determinants of cash holdings.

This study seeks to investigate the cash holding practices of non-financial firms listed on the NSE to identify unique factors contributing to liquidity constraints. Drawing from prior research on corporate cash management determinants, the study aims to bridge the gap between theoretical frameworks and practical challenges faced by firms operating in emerging markets like Kenya. By examining recent events, such as the COVID-19 pandemic, the study aims to assess the impact of external shocks on cash holding behaviors and their determinants.

1.3 Research Objectives

1.3.1 General Objective

To investigate the determinants of cash holdings for non-financial firms listed on the Nairobi Securities Exchange in Kenya.

1.3.2 Specific Objectives

1. To establish the effect of profitability on cash holding of non-financial firms listed on the Nairobi Securities Exchange in Kenya.
2. To establish the effect of firm size on cash holding of non- financial firms listed on Nairobi Securities Exchange in Kenya.
3. To establish the effects of board size on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya.
4. To establish the effects of board gender on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya.
5. To establish the effects of growth opportunities and dividend payment on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya.
6. To establish the effects of dividend payment on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya.
7. To determine the influence of institutional ownership on cash holding and determinants of non-financial firms listed on the Nairobi Securities Exchange in Kenya.

1.4 Research questions

1. What is the effect of profitability on cash holdings of non- financial firms listed on the Nairobi Securities Exchange in Kenya?
2. What is the effect of firm size on cash holdings of non- financial firms listed on the Nairobi Securities Exchange in Kenya?
3. What is the effect of board size on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya?

4. What is the effect of board gender on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya?
5. What is the effect of growth opportunities on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya?
6. What is the effect of dividend payment on cash holdings of non-financial firms listed on the Nairobi Securities Exchange in Kenya?
7. What is the influence of institutional ownership on cash holdings and determinants of non-financial firms listed on the Nairobi Securities Exchange in Kenya?

1.5 Scope of the study

The study aims to establish the determinants of cash holding practices of non-financial firms listed on Nairobi Securities Exchange in Kenya. This research will cover 44 non-financial firms listed on Nairobi Securities Exchange for the period 2011-2022. This long-term study can aid in identifying changes in the determinants of cash holdings over time, as well as the economic and financial crises and their impact on firm cash-holding decisions. For example, the study can assess how the 2008 global financial crisis and the COVID-19 pandemic affected non-financial firms' cash-holding decisions in Kenya. Secondary data will be sourced from Nairobi Securities Exchange database, Capital Markets Authority database and firms' annual reports. The geographical scope will be limited to Nairobi County where most firms' headquarters are based. Theoretically, the study will be guided by shiftability, trade off, pecking order and agency theory. The independent variables; firm size, profitability, board size, board gender, growth opportunities and dividend payment against dependent variable, cash holding and moderating variable, institutional ownership.

1.6 Significance of the study

The research on motives for cash holdings of non-financial firms listed on the Nairobi Securities Exchange will be important to various stakeholders as follows.

1.6.1 Regulators

To help regulators understand the factors that influence non-financial firms' cash-holding decisions for them to design policies that encourage or discourage cash reserves. For example, if the study discovers that firms have excessive cash reserves, regulators may enact policies encouraging firms to invest in productive assets or pay dividends to shareholders. If the study finds that firms have insufficient cash reserves, regulators may implement policies that encourage firms to build up their cash reserves to prepare for potential economic shocks. Such insights can help regulators make decisions about capital requirements, stress testing, and other financial stability-promoting regulatory measures.

1.6.2 Finance Managers

The research can provide valuable insights into the factors that influence firms' cash-holding decisions, allowing managers to make more informed decisions about their cash reserves. The study can assist managers in benchmarking their cash holdings against peers in the industry and identifying best practices. Managers can use this to optimize their cash holdings, ensuring that they have adequate reserves to manage financial risks while also avoiding holding excess cash that could be better used elsewhere.

1.6.3 Investors

The study can help investors gain insights into how non-financial firms will perform financially in the future by studying the determinants of these firms. It will also assist investors assess the risk associated with investing in these firms.

1.6.4 Academics

The research will contribute to the literature on the determinants of cash holding in at least two ways; first. It focuses on non-financial firms listed on the Nairobi Securities Exchange, which is representation of the Kenyan economy, Second, this study will validate findings done by previous researchers by testing the relationship between growth opportunities, dividend payment, board size with cash holdings of the non-financial firms. Further, it will add value to the existing theories through using different econometric techniques.

1.7 Chapter summary

In this chapter the study discussed the background of study. The study aims to investigate the conundrum that corporate cash holding has become, given the current trend of increased cash holding recorded in many studies around the world.

The research problem was then created, focusing on the necessity for additional in-depth research into cash holding in the local setting. Because of the diverse research findings on the subject and minimal empirical evidence on local non-financial enterprises, the study's purpose was narrowed down to investigate the determinants of cash holdings.

The scope of the study was identified as the non-financial firms quoted on the Nairobi Securities Exchange.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of the study's theoretical foundations. It presents an in-depth examination of the empirical research on the determinants of corporate cash holding. The relationship between various determinants and corporate cash holding is then presented in a conceptual framework and finally the operationalization of variables.

2.2 Theoretical framework

Theoretical review provides a framework that variables in research are understood from a universal perspective. Creswell (2009) states that multiple theory approach in qualitative and quantitative research helps in formulating strong bases for analysis and extraction of constructs in the research. There are several theories that guide cash holding of firms, but this study will use four of them: shiftability theory, trade off model, pecking order, and agency theory.

2.2.1 Shiftability theory

It was proposed by Harold Moulton (1915). It offers insights into the inverse relationship between firm size and cash holdings. According to this theory, larger firms tend to maintain smaller cash reserves compared to smaller firms due to their enhanced access to external financing sources. These large corporations typically have well-established relationships with financial institutions and a proven track record of creditworthiness, enabling them to easily secure lines of credit to meet short-term cash needs or fund investment projects. Consequently, they can minimize their reliance on internal cash reserves for day-to-day operations (Ndegwa,2020). Small firms face difficulties in raising funds from the capital market as they are young, less known, and more sensitive to capital market imperfection (Almeida et al. 2002). Also, small firms suffer from information asymmetry problem as compared to large firms because small firms could not be able to catch the attention of the investors as a result external financing becomes costlier. Kim et al. (1998) used firm size as a proxy for cost of external financing. Further, as suggested by Miller and Orr (1996), there exist economies of scale in cash management and the large firm holds less cash than small firm as raising capital by the small firm is relatively costlier than large firm.

Chauhan et al. (2018), Hu et al. (2018), Nyborg & Wang (2014), Anjum & Malik (2013), Ali & Yousaf (2013), Gogineni et al. (2012), Gill & Shah (2012), Megginson & Wei (2012), Islam (2012), Bates et al. (2009), Drobetz & Gruninger (2006), Nguyen (2005), Ferreira & Vilela (2004), Opler et al. (1999), Kim et al. (1998), Al Najjar (2013), Sun et al. (2012) and Bashir (2014) reveal a negative association of size with cash holdings implying small firms hold more cash than large firms.

Shiftability theory primarily focuses on financial factors such as firm size and access to external financing in explaining cash holdings. However, it may overlook non-financial factors such as managerial preferences, corporate governance practices, and industry characteristics, which can also influence cash management decisions.

2.2.2 Trade-off theory

The trade-off theory of cash is attributed to Tobin (1956) and Miller and Orr (1966). According to the theory, firms must choose between holding cash and investing in profitable projects. Holding cash provides a firm with liquidity to meet its short-term obligations, but it comes at a cost because the cash could be invested in profitable projects that generate a return. As a result, firms must weigh the costs and benefits of holding cash versus investing in projects to maximize their financial performance.

Trade off theory argues that a firm will require to hold more cash to escape from financial distress in a time of better growth opportunities. Hence to maintain a strategic distance from any setback in cash is as per the transactional motive of cash (Opler et al., 1999). The second motive of staying away from financial distress is precautionary (Bates et al., 2009). But the negative influence of growth opportunities on cash holding is reported in a study conducted by (Bates et al., 2009), which is consistent with agency theory (M. Wang, 2015).

Following earlier studies, Firms need to enhance their investors' income by closely inspecting the costs and benefits of holding cash. Firms that acquire assets for the business will build benefits and bear the cost of debt (Manoel, Moraes, Santos, & Neves, 2018). Small firms dependably think that it is important to borrow high debt, but they can't bear the cost of paying more interest. Hence, according to trade off theory, organizations that have high instability, low capital, low premium will, in general, have a lesser amount in debt (Myers & Majluf, 1984). This leads them to hold more amounts in cash. As indicated by Bounker, Derouiche, and Nguyen (2015) expansion in cash holdings will reduce the dangers of bankruptcy, loss of liquidity, financial distress, and so on.

However, the cash holding will cause a few confinements. Consider the part of chance costs, organizations stock high cash will oversee some venture bargains. In any case, that would be productive for them later (Bounker et al., 2015). Trade off theory recommends the formula of holding optimal cash level through balancing between the marginal benefits of reducing the time and cost of issuing securities outside of the firm and the marginal cost of holding unutilized cash by the firm. (Nafees et al., 2017). Since the organizations operate their activities in an imperfect market, they often experience problems in accessing the capital markets or bearing the significant cost of external funding (Amahalu & Ezechukwu, 2017). If managers don't amplify investors' wealth, they raise their cash holding to develop resources they control to expand their managerial discretion. In this situation, the cost of cash holding will increase the agency cost of managerial discretion. This cost will be considered while trade-off between cost and benefit analysis to determine the ideal level of cash (Amahalu & Ezechukwu, 2017).

The trade-off model's strengths include its ability to provide a framework for understanding the determinants of cash holdings and its practical relevance for financial decision-makers. However, the model's assumptions, such as the assumption of constant cash flow, may not always be true. The theory oversimplifies the complexities of capital structure decisions, as it may not fully account for market imperfections and the difficulty in quantifying costs accurately.

Kaur and Goyal (2019) investigated the determinants of cash holdings of 216 Indian manufacturing firms from 2010 to 2017. According to the study, firms with higher growth opportunities hold less cash, while firms with higher financial distress risk and larger size hold more cash. The study also discovered that a firm's cash holding decisions are influenced by leverage, profitability, and tax rates.

Razak and Abdul Rahman (2020): This study examined the determinants of cash holdings of 440 Malaysian firms over the period 2009-2017. According to the study, firms with higher growth opportunities hold less cash, while firms with higher financial distress risk and larger size hold more cash. The study also found that profitability, tangibility of assets, and dividend payout ratio affect a firm's cash holding decisions.

Khaliq et al. (2021) investigated the determinants of cash holdings of 102 Pakistani firms from 2014 to 2018. According to the study, firms with higher growth opportunities hold less cash, while firms with higher financial distress risk and larger size hold more cash. The study also discovered that a firm's cash holding decisions are influenced by profitability, cash flow volatility, and asset

liquidity. Overall, these findings support the trade-off model's contention that firms must choose between holding cash and investing in profitable projects. They also emphasize the importance of growth opportunities, financial distress risk, and corporate governance in a firm's cash holding decisions.

According to the tradeoff theory, which is based on the cost-benefit tradeoff, companies with more women on their board of directors tend to hold the optimal amount of cash Khalifah Aizyadat, (2022). The gender board in research Khalifah Aizyadat, (2022) has a positive relationship to cash holdings.

2.2.3 Agency theory

Agency theory was developed by Jensen and Meckling in 1976. According to the theory, conflicts of interest arise between a firm's owners (shareholders) and managers due to differences in their goals and incentives. The managers may prioritize their own interests over those of shareholders, resulting in agency costs and, ultimately, reduced firm value. The owners of a firm (shareholders) appoint managers to act on their behalf, but managers may not always act in the best interests of shareholders, according to agency theory. Managers may be tempted to maximize their own utility or pursue objectives that differ from those of shareholders, which can result in agency costs. These expenses could include monitoring fees, bonding fees, and residual losses.

Jensen (1993) and Lipton and Lorsch (1992) argue that large boards of directors are less effective and easier for a CEO to dominate, as many directors tend to be "polite and courteous" rather than critical of management decisions. While large boards probably offer greater potential for knowledge and skills, their organizational deficiencies, increased potential for conflict, and the risk of the existence of stowaways appears to be much greater (Yermack 1996). This conclusion is supported by several empirical studies that demonstrate the negative impact of board size on firm performance on one hand, and the positive relationship between board size and cash holdings on the other (Gill & Shah, 2012; Jamil, Anwar, Afzaal, Tariq, Asif, 2016).

Literature on the agency theory reveals that one way to reduce agency conflicts between shareholders and managers is to monitor managers to encourage them to act in the interest of shareholders (Shafique & Ali 2020). Conscious of the costly expense involved, shareholders often look for another way to effectively restrict the discretionary space of managers, notably corporate governance mechanisms. In fact, in a world shaped by informational asymmetry and conflicts of

interest, corporate governance represents one of the most effective mechanisms for reducing the power of managers (Booth, L., V. Aivazian, A. Demircug-Kunt, and V. Maksimovic, 2014 and Ali & Shafique, 2020). Its ultimate objective is to provide shareholders with systematic control mechanisms to keep under control the manager's area of power that is outside their reach⁴. As liquid assets are probably the most exposed to opportunistic agents (Pinkowitz et al., 2006), the way in which they are allocated profitably for shareholders is central to any analysis of governance effectiveness.

Li et al. (2019) investigated the impact of board gender diversity on cash holdings for US firms in this study. According to the study, firms with more women on their boards tend to hold less cash, implying that gender diversity may improve board effectiveness and lower agency costs. Karpavičius et al. (2020): This study examined the impact of board size and gender diversity on cash holdings for European firms. The researchers discovered a negative relationship between board size and cash holdings, as well as a positive relationship between board gender diversity and cash holdings.

The strength of agency theory is that it provides a framework for understanding how conflicts of interest can arise between shareholders and managers, as well as how to mitigate these conflicts. The theory has numerous applications in corporate finance and governance. One flaw of agency theory is that it assumes shareholders are the only stakeholders in a company, which is not always the case. Furthermore, the theory ignores the role of other stakeholders such as employees, customers, and creditors.

2.2.4 Pecking order

It was first proposed by Stewart Myers in 1984. Due to information asymmetry and adverse selection problems, the theory suggests that firms prefer internal financing sources over external financing sources. This theory proposes that holdings cash before looking for expensive outside financing can diminish the expense of raising assets through external funding which can serve the investors' interest (Guariglia & Yang, 2018). Correspondingly in high cash streams, firms finance conceivable investment projects first, at that point reimburse debt when due, lastly accumulate unused cash. Reliable with such justification, Opler, Pinkowitz, Stulz, and Williamson (1999) argue that the level of cash holding is determined by the inflow and outflow of cash (M. S. Tahir & Alifiah, 2015). Due to information asymmetry, managers better understand the firm's business

and future profitable project than outside investors, if the project is promising, high fruitful, the most ideal approach to finance is to cash accessible from retained earnings (Thu & Khuong, 2018). The pecking order theory's strength is that it provides a simple and straightforward explanation for why firms prefer to use internal financing sources. In addition, empirical evidence from a few studies has supported the theory. The pecking order theory has a flaw in that it assumes firms have perfect information about the value of their investments and their financing needs, which is not always the case. Furthermore, the theory does not account for the fact that firms may issue new equity or debt for other reasons, such as strategic considerations.

Han et al. (2018) investigated the determinants of cash holdings for Korean firms from 2007 to 2016. According to the study, companies with higher levels of profitability and growth opportunities hold less cash, while companies with higher levels of financial leverage and investment opportunities hold more cash. The study also found support for the pecking order theory, as firms tended to fund their investments with internal financing sources. Sun and Wang (2020) investigated the determinants of cash holdings for Chinese firms from 2007 to 2016. According to the study, firms with greater financial leverage and investment opportunities tend to hold more cash, whereas firms with greater profitability and growth opportunities tend to hold less cash. The study also discovered that firms tended to fund their investments with internal financing sources, which is consistent with the pecking order theory. Overall, the study will provide insights into how listed Kenyan non-financial firms finance their investments and manage their cash holdings.

2.3 Empirical review

2.3.1 Corporate cash holding

(Gill & Shah, 2012) define cash as readily available for investment as well as repayment of short-term obligation and payment of dividends. In this study cash holding will comprise of cash in hand and bank as well as short term investment in money market securities like treasury bills. The international Accountants standards Board (IASB) states cash comprises of cash equivalents are short term investments which are highly liquid and can be easily converted to cash that are not subjected to insignificant risk of changes in value while cash comprise of cash in hand and demand deposits (IAS 7.6).

Non-financial firms' cash holdings can vary significantly depending on factors such as industry, size, profitability, growth prospects, and the macroeconomic environment. Larger and more profitable companies tend to hold more cash than smaller and less profitable companies. Furthermore, firms in highly competitive industries with low growth prospects tend to hold less cash than firms in less competitive and higher growth industries.

Cash holdings also have implications for the financial performance and investment decisions of non-financial firms. High levels of cash holdings can indicate that the firm has limited investment opportunities or that its financial management is conservative. Low levels of cash holdings, on the other hand, may indicate that the firm is aggressive in its investment and financing activities and may be exposed to liquidity and financial risks. Other consequences of poor cash holding practices include Inadequate cash reserves leading to financial distress, increasing likelihood of bankruptcy or insolvency in the event of a surprise event or economic downturn, a drop in investor confidence, resulting in a lower valuation and reduced access to capital markets. For instance, the negative working capital of ARM cement was attributed by unsustainable expansion strategy to Tanzania, Tanga cement plant which delay opening. ARM cement acquired USD 1M to finance the plant in 2008. The increase in debt led to decline in profitability for ARM, in 2015 made a loss of 2.9B, 2016 made a loss of 2.5B and 2017 made a loss of 6.5B. ARM was relying on short term debt financing as they waited for the long-term project of Tanga to complete that led to them struggling to meet their short-term obligations. In 2017, ARM proposed to sell its non-cement business, mavuno fertilizers, to reduce its debt burden but the transaction was cancelled by the Omya and Pinner heights Kenya in 2018. The default in loans led to the company being put under administration which led to suspension of 12 months trading on Nairobi securities exchange. ARM remained under administration for more than two years and in 2021, the liquidation process began.

According to (Business Daily,2022) ARM's creditors lost approximately Kshs 11.5 bn during the liquidation process, with Sayani Investments, an unsecured creditor, taking a 93.8% haircut of the amount claimed. BII, who held approximately 42% shares in the company, are also among the biggest losers in the firm (Business daily,2017 & Wafula, 2018), (Robert Karuiyi, Ann Wacera and Steve Ogada,2022). Overall, cash holdings management is an important aspect of non-financial firms' financial management. It necessitates a careful balance of managing liquidity

risk, investing in profitable opportunities, and increasing shareholder value. Studies have been conducted to investigate the factors influencing corporate cash holdings. For example, Li and Li (2020) discovered that cash holdings were positively associated with firm size, profitability, and growth opportunities, while financial leverage was negatively associated. Chen et al. (2019) discovered that firms with high levels of intangible assets held more cash, possibly to protect against the risk of asset impairment.

According to Zhao and Zhang (2021), firm size, leverage, and profitability are all positively related to cash holdings, whereas liquidity risk and investment opportunities are negatively related. Karami et al. (2020) discovered that firm size, profitability, growth opportunities, and financial constraints were all positively related to cash holdings, whereas liquidity risk and investment opportunities were negatively related. In contrast, Abdeldayem and Hagraas (2019) discovered that only liquidity risk and investment opportunities had a significant negative relationship with cash holdings, while firm size, leverage, and profitability were not. Similarly, Mensah et al. (2018) discovered that cash holdings were negatively related to investment opportunities and cash flow volatility, while firm size, leverage, and profitability were not significant determinants. While the findings of these studies differ in some ways, there is agreement on some factors that influence non-financial firms' cash holdings, such as investment opportunities and liquidity risk. The relationship between firm characteristics and cash holdings, on the other hand, may differ across industries and economic environments, highlighting the need for additional research in this area.

2.3.2 Firm size and cash holdings

Firms with a high level of debt tend to hold less cash because they may need to prioritize debt repayment over cash reserves, and highly leveraged firms may face higher borrowing costs, making large cash balances more expensive to hold. Dang, Nguyen, and Nguyen (2019) - "Firm Characteristics and Cash Holdings: Evidence from Emerging Markets" Using a sample of firms from Vietnam, this study investigates the determinants of cash holdings of non-financial firms in emerging markets. The authors discover that cash holdings are positively related to firm size, profitability, and liquidity, while leverage and growth opportunities are negatively related to cash holdings.

"The Impact of Firm Characteristics on Cash Holdings: Evidence from UK Non-Financial Firms" by Abdelsalam and El-Masry (2018) - Using a sample of firms from the FTSE 350 index, this study investigates the determinants of cash holdings of non-financial firms in the UK. The researchers discovered that cash holdings are positively related to firm size, profitability, and asset tangibility, while leverage and liquidity are negatively related to cash holdings.

(Opler et al., 1999) contend that larger firms are more diverse in their operations and have generally progressively reasonable cash flows. When it comes to financing a profitable project, larger firms have easier access to the cheaper debt market, making the cost of holding a large amount of cash irrational. Because of organizational economies of scale, larger firms can benefit from cheaper financing in a better and simpler manner (Z. Wang & Sarkis, 2017). Smaller businesses are less diverse and unpopular in the public eye, so the cost of financial distress is high. Because smaller firms have fewer assets, they cannot borrow more by pledging them. As their access to the debt market is reduced, smaller firms should hold more cash to fund upcoming profitable projects (Irfan et al., 2021).

Yamada and Kawakatsu (2019) published "Firm-Specific Determinants of Cash Holdings in Japan: Evidence from Panel Data." Using a sample of firms from the Nikkei 225 index, this study investigates the determinants of cash holdings of non-financial firms in Japan. The authors discover that cash holdings are negatively related to profitability and liquidity, which contradicts the general trend observed in other studies.

Kim and Park (2021) - "The Effect of Institutional Ownership on Corporate Cash Holdings" Using a sample of firms from the KOSPI index, this study investigates the effect of institutional ownership on cash holdings of non-financial firms in Korea. The researchers discovered that institutional ownership is negatively related to cash holdings, which contradicts previous research that found a positive relationship between cash holdings and firm size.

Most of the recent literature showed evidence in favor of negative impact of size on the cash reserves of the firm. (Magerakis, Gkillas, Tsagkanos, & Siriopoulos, 2020) examine the 6629 non-financial firms from 2010 to 2018 and report that smaller firms hold more cash as compared to their larger counterpart. The negative influence of cash holding is also reported by (Angelovska & Valen, 2020; Athar et al., 2020; D'Mello, Krishnaswami, & Larkin, 2008).

2.3.3 Profitability and Cash holdings

Profitability is measured by return on assets (Ali et al.,2020), and has an impact on the organization's cash holdings. A productive organization would generate consistent cash flow from its operations (Shabbir et al., 2016). It is anticipated that profitability has a positive impact on an organization's cash holdings. According to trade-off theory, holding too much cash has not only direct cost unused amount but the chances that this may motivate the managers to unnecessarily using the cash for their benefits or for investing in less profitable projects, cannot be ignored. This indirect agency cost of holding cash may be larger in magnitude than its direct cost thus overall costs of holding cash may outweigh its associate benefits. Therefore, trade-off theory predicts a negative relationship between profitability and cash holdings of the firm. Jebran et al. (2019) investigated the cash holding determinants of 280 nonfinancial firms listed on the Pakistan Stock Exchange from 2005 to 2014 and found leverage, size, liquidity, and tangibility as the prime cash holdings determinants. Ullah et al. (2018) again found a negative association between profitability and cash holdings. Whereas Aftab et al. (2018) found adverse results significantly bearing on cash holdings and profitability.

According to pecking order theory, very profitable organizations frequently have high cash holdings for reinvestment thus organizations used retained earnings to generate solvency and competitive advantage in their businesses, which is the motivating factor behind holding a higher level of cash to favor firm in this situation. In this way, profitability positively affects cash holdings (Alnori & Alqahtani, 2019). On the contrary, when the retained earnings are preferred for obligation reimbursement by the corporation, this diminishes the cash holdings of the corporations (Opler et al., 1999).

2.3.4 Board size and Cash holdings

A company's board of directors is crucial in shaping its strategic direction and resource allocation decisions, including cash holdings. When managers are faced with a difficult financial decision, one of the key corporate governance approaches under agency theory for ensuring that managers operate for the benefit of shareholders is the board of directors (Allen,2005). Jensen (1993) states small boards are more effective than larger boards because board members have more difficulty solving the agency problem hence smaller boards are preferred because they make better decisions, have better coordination, and have fewer communication issues. Recent empirical research has shed light on the impact of board characteristics on non-financial firms' cash holdings. Independent

directors are more likely to be vigilant and risk-averse, leading them to support higher levels of cash reserves to mitigate potential financial distress. In contrast, board size has produced mixed results, with some studies finding a positive relationship with cash holdings and others finding no significant relationship. A study by Wang et al. (2019) suggest that a larger board size is associated with greater cash holdings while Chen et al. (2021) found no statistical significance between board size and cash holding in non-financial firms.

2.3.5 Board gender and Cash holdings

According to one study, gender-diverse boards have higher cash holdings because they are more risk-averse and more likely to support higher levels of cash reserves to mitigate potential financial distress (Sharma et al., 2020). Another study discovered that boards with a higher proportion of women are more likely to support higher levels of cash reserves due to their risk-aversion and focus on long-term strategic planning (Kakabadse et al., 2020). According to a study by Chen et al. (2021), business innovation acted as a mediator in the association between board gender and cash holdings. In particular, the study discovered that, for companies with high levels of innovation, gender diversity on corporate boards was associated with lower cash holdings, but not for companies with low levels of innovation. Further research is needed to fully understand the impact of board gender on cash holdings. Gender diversity in top management increases decision-making independence (Carter et al., 2003). Board gender diversity is seen as an important component in improving corporate governance quality, with several corporate governance regulations in developed countries emphasizing the importance of gender diversity to reduce problems caused by like-minded individuals and thus improve board effectiveness (Aizyadat, 2022). According to a study by Farooq et al. (2018), gender-diverse boards were linked to lower levels of cash holdings for Australian non-financial enterprises. Similar findings were made by Boubakri et al. (2020), who discovered that companies with more female directors in Tunisia had lower levels of cash holdings. However, other studies have found no significant link between board gender diversity and cash holdings. For example, a European study found that board gender diversity had no effect on the level of cash reserves held by non-financial firms (Fernández-Méndez et al., 2018). Similarly, an Asian study discovered that board gender diversity was not significantly related to cash holdings (Yan and Wang, 2021).

Previous studies argue that the gender diversity of a corporate board has a positive impact on the quality of its discussion and its oversight ability (Adams and Ferreira, 2009, Gul et al., 2011, Brieger et al., 2019). It is claimed that the presence of female directors on the board improves the monitoring process of the board as they are more independent and risk-averse compared to male directors (Elmagrhi et al., 2019, Liu et al., 2020). Female directors are shown to be tough monitors and require greater accountability and fairness (Srinidhi et al., 2011). Such attributes are beneficial in mitigating agency relationships relating to cash holding.

Overall, the contradictory findings indicate that the relationship between board gender diversity and cash holdings is complex and varies depending on the specific context and sample characteristics. More research is needed to better understand the underlying mechanisms that drive the relationship between board gender diversity and non-financial firm cash holdings.

2.3.6 Growth opportunities and cash holdings

According to the tradeoff model, firms with growth opportunities have higher cash holdings because they use internal financing, preventing the need to access external financing that is more costly. Agency theory states that managers with poor investment opportunities hold more cash to invest in negative NPV projects that are not in favor of shareholders' wealth (Ferreira & Vilela, 2004 and Drobetz & Gruninger, 2007).

Studies by (Hu et al. 2018), (Chauhan et al.2018), (Maheshwari & Rao, 2017), (Nyborg & (Wang, 2014), (Sun et al.2012), (Kim et al.2011), (Bates et al. 2009), (Ferreira & Vilela ,2004) show a positive significant relationship between growth opportunities and cash holdings. On the other hand, studies by (Mugumisi & Mwanza ,2014), (Shah et al. 2012) and (Teruel et al. 2009) show a negative significant relationship between growth opportunities and cash holdings. However, studies by (Islam,2012) and (Drobetz & Gruninger,2006) show there is an insignificant relationship between growth opportunities and cash holdings.

Firms with more growth opportunities hold larger cash reserves hence declaring a small portion of their income in dividend (Wang,2015). It is hard for managers to realize the positive net present value due to estimated cash flows belonging to a risky future that can easily turn the positive net present value to negative (Ross et al., 2008).

A study on French firms by (Saddour,2007) found varying cash holding management practices among growing and mature companies, the study showed that growing companies required more

cash holdings than mature companies. Growth companies needed cash to fund their profitable investment projects without incurring transaction costs from external financing while mature companies needed funds to pay dividends to their shareholders.

According to (Tayem,2017) there is a direct relationship between cash flows and investment opportunities from a review of Jordanian firms that is consistent with both financial hierarchy and trade off theories.

2.3.7 Dividend payment and Cash holdings

According to the tradeoff theory, dividend payments have a negative relationship with cash holdings of a firm. Further (Ullah et al.,2018) found a negative relationship between cash holdings and dividend payments while (Julio &Yook,2012) found that liquid assets are adversely related to dividend payments. Furthermore, findings revealed that cash holdings and dividend payments are positively associated, implying that dividend payers are hesitant to pay dividends, which is why they hold large amounts of corporate cash (Ahmed et al., 2018); (Chireka & Fakoya, 2017); (Drobetz & Grüninger, 2007); (Shah, 2011). In contrast to the studies, the findings show that there is an indirect relationship between cash holdings and dividend payments, implying that dividend distribution to shareholders is aimed at minimizing the companies' liquid assets, implying that firms that distribute dividends hold less cash (Sheikh et al., 2018).

According to agency theory, maintaining a regular dividend distribution policy reduces the risk of overinvestment (Grossman and Hart, 1980; DeAngelo, DeAngelo and Stulz, 2006). To honor their commitment to shareholders, managers are obliged to make more profits, which of course requires optimal investment choices. Moreover, the payment of dividends can be seen as a device to reduce the discretionary power of managers by reducing the liquidity available under their control, and by forcing them to turn to bank loans to finance new investments (Couderc, 2006).

2.3.8 Moderating effect of institutional ownership on cash holdings of non-financial firms listed on NSE in Kenya

According to agency theory, institutional investors have the incentive and ability to monitor and discipline managers to align their interests with those of shareholders which can result in better governance and more efficient use of corporate resources. This implies that institutional ownership can serve as a mechanism to mitigate agency problems and reduce agency costs.

(Chen et al.,2018) investigated the impact of institutional ownership on the relationship between cash holdings and firm size, profitability, and growth opportunities in Chinese listed firms. The

researchers found that institutional ownership moderates the relationship between cash holdings and firm size, but not profitability or growth opportunities. Further, (Nguyen et al.,2018) examined the effect of institutional ownership on the relationship between cash holdings and firm size, profitability, and board size in Japanese listed firms. The researchers found that institutional ownership moderates the relationship between cash holdings and firm size and board size, but not profitability. On the other hand, (Perez et al.,2016) investigated the impact of institutional ownership on the relationship between cash holdings and firm size, profitability, and ownership concentration in Latin American listed firms. The researchers found that institutional ownership moderates the relationship between cash holdings and ownership concentration, but not firm size or profitability.

Institutional ownership will be measured as the percentage of shares held by institutional investors.

2.4 Research Gap

Table 2.1: Research Gap

	Author and year	Findings	Type of gap
1.	Constantine (2018)	Leverage and cash flows have a significant positive relationship against cash holdings while Market to book value and size have no significant relationship to cash holdings of the non-financial firms.	Knowledge Theoretical
2.	Kibaya (2019)	Cash holding and firm size produced a positive significant relationship against value of the firm while capital structure produced a negative relationship against value of the firm. The age of the firm produced no significant relationship	Knowledge Theoretical
3.	Ongudipe et al., (2012)	Leverage and return on assets had a positive significant relationship with cash holdings while net working capital had a negative relationship with cash holdings. Firm size had an insignificant relationship with cash holdings	Knowledge Theoretical
4.	Shabbir et al., (2016)	Company size, cashflow and profitability had a positive significant	Knowledge Theoretical

		relationship with cash holding while leverage and liquidity had a negative relationship with cash holding	
5.	Uyar &Kuzey (2014)	Cash flow had a positive significant relationship with cash holdings while capital expenditures, financial debt ratio and leverage had a negative relationship with cash holding	Knowledge Theoretical
6.	Chen, H., Yang, C., & Zhu, H. (2021).	CEO power and political connections positively affect corporate cash holdings.	Knowledge Theoretical
7.	Gao, P., Shen, Y., & Zhang, Y. (2020)	Financial flexibility and political connections have a positive impact on corporate cash holdings, and the effect is stronger for firms in industries with high regulatory uncertainty.	Knowledge Theoretical
8.	Akande, J.O. and Babajide, A.A. (2019)	Cash holdings have a positive relationship with firm performance, and this relationship is stronger when firms have better corporate governance practices.	Knowledge Theoretical
9.	Awolaja, A.M. and Fasina, O.S. (2018)	Cash holdings are positively related to firm size, profitability, and growth opportunities, but negatively related to leverage and liquidity.	Knowledge Theoretical
10.	Awojobi, O., Bein, M., and Fagbemi, T. (2019)	Cash holdings have a positive relationship with investment decisions, and this relationship is stronger for financially constrained firms.	Knowledge Theoretical
11.	Ben Mimoun, M.S., Ghadhab, I., and Belkhiria, J. (2019)	Cash holdings are positively related to political risk, suggesting that firms in politically risky environments hold more cash as a precautionary measure.	Knowledge Theoretical

Source: Author (2022)

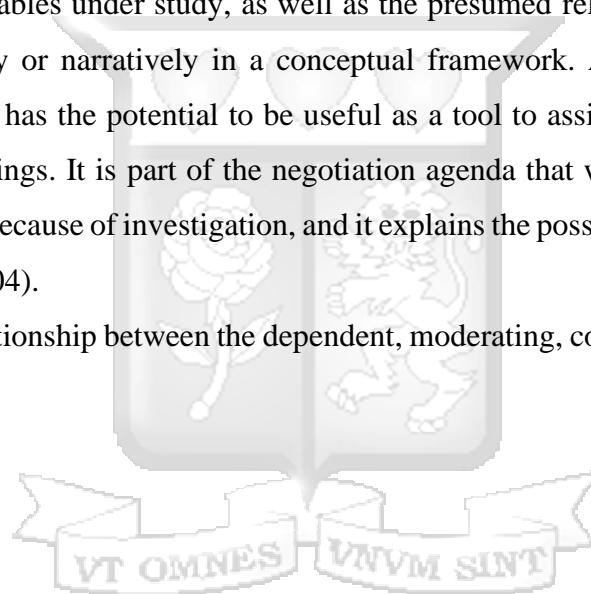
Few studies have examined the connection between the cash holdings of non-financial companies listed on the Nairobi Stock Exchange using board size, gender, dividend payments, and growth opportunities. There is minimal study on the connection between board gender and cash holdings, but previous studies have revealed conflicting results about the effect of board size on cash

holdings. Research is also required to examine how cash holdings of non-financial firms listed on the Nairobi Stock Exchange are affected by dividend payments and growth potential. Further investigation is therefore required to close this knowledge gap and provide a better understanding of the factors that determine the cash holdings of non-financial firms listed on the Nairobi Securities Exchange, including firm size, profitability, board size, board gender, dividend payments, and growth opportunities.

2.5 Conceptual framework

A conceptual framework is a collection of broad ideas and principles drawn from relevant fields of study that are used to structure a subsequent presentation (Kombo&Tromp, 2009). The main factors, concepts, or variables under study, as well as the presumed relationships between them, are explained graphically or narratively in a conceptual framework. A conceptual framework, when clearly articulated, has the potential to be useful as a tool to assist a researcher in making sense of subsequent findings. It is part of the negotiation agenda that will be scrutinized, tested, reviewed, and reformed because of investigation, and it explains the possible relationships between the variables (Smyth, 2004).

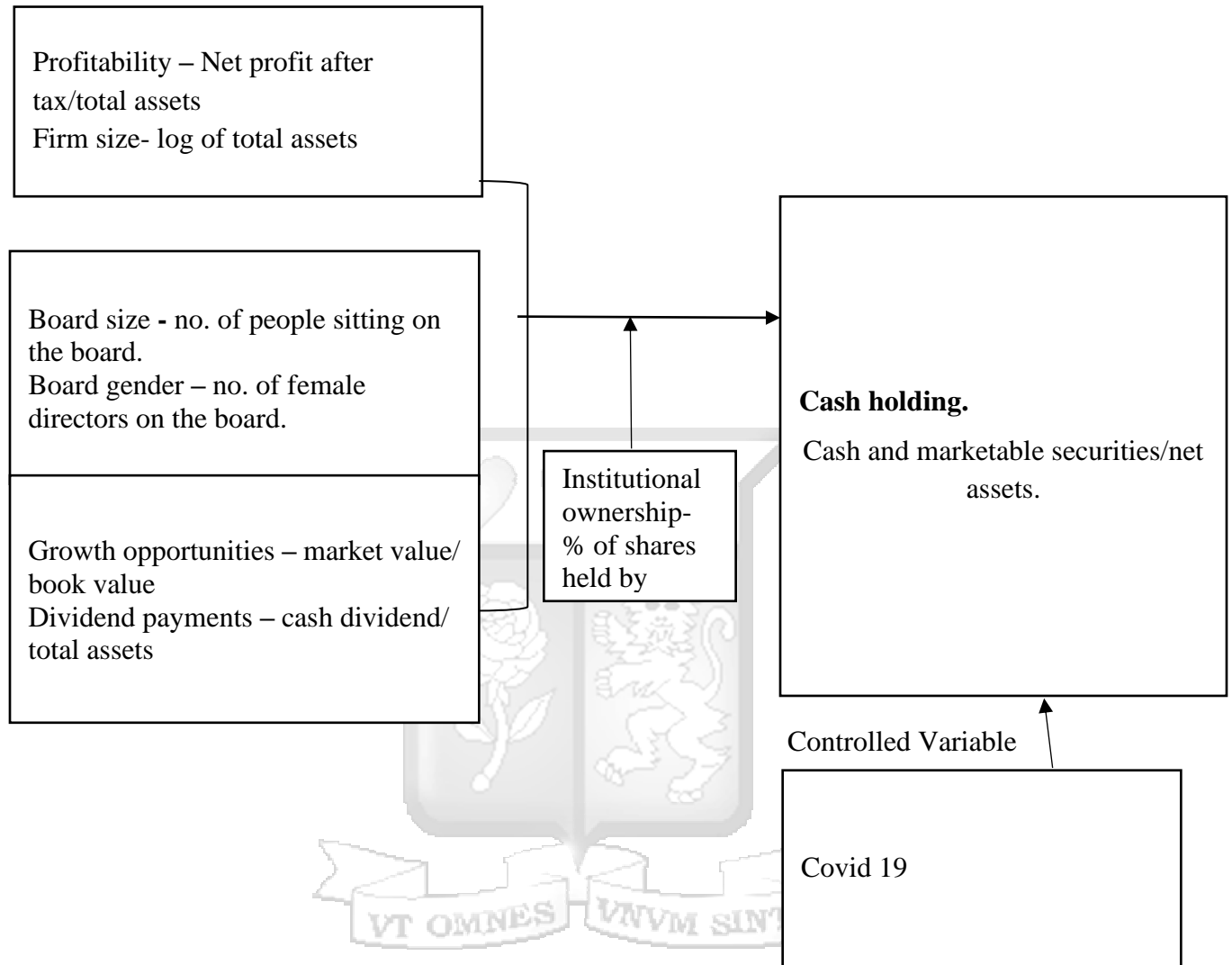
Figure 2.1 shows the relationship between the dependent, moderating, controlled, and independent variables.



Independent variables

Moderating variable

Dependent variable.



Reverse causality occurs when the relationship between two variables is incorrectly assumed to be causal, when in fact the causal direction is opposite. The study may be affected by reverse causality. Previous studies have highlighted the issue of reverse causality, for example, Chen, Harford, and Li (2007) found that high cash holdings are positively related to future profitability, but they also found evidence of reverse causality: firms with high profitability tend to have high cash holdings in the following year. Similarly, Opler, Pinkowitz, Stulz, and Williamson (1999) found that high cash holdings are positively related to future investment, but they also found evidence of reverse causality: firms with high investment tend to have high cash holdings in the following year. To address the issue of reverse causality, Chen, Harford, and Li (2007) used an instrumental variable approach to address the endogeneity of cash holdings, while Opler,

Pinkowitz, Stulz, and Williamson (1999) used a fixed effects model to control for unobserved firm-specific factors that could affect both cash holdings and investment. This study will use a fixed effect model to address reverse causality.

2.6 Operationalization of variables

This section describes how the variables (dependent and independent) to be used in the study will be measured. This is illustrated in table 2.1.

Table 2.2 operationalization of variables

Variable	Measurement	Supporting Literature	Data Source	Supporting theories
Cash holding	(Cash and marketable securities/net assets) *100	(Nasr et al.,2020)	Non-financial firms Annual Reports	Trade off
Firm size	In (total assets)	(Ali et al.,2016)	Non-financial firms Annual Reports	Shiftability Trade off
Profitability	(Net profit after tax/total asset) *100	(Husain &Sunardi,2020)	Non-financial firms Annual Reports	Pecking order
Board size	Number of people sitting on the board	(Aizyadat,2022).	Non-financial firms Annual	Agency
Board gender	Number of female directors on the board	(Aizyadat,2022).	Reports	Agency Trade off
Growth opportunity	(Market value/book value) *100	(Ozkan&Ozkan,2004)	Non-financial firms Annual	Pecking order
Dividend payout	(Cash dividend/net income) *100	(Kusuma&Semuel,2019)	Reports	Trade off. Agency
Institutional ownership	Percentage of shares held by institutional investors	(Chen et al.,2018)	Non-financial firms Annual Reports	Agency

Source: Author (2022)

2.7 Chapter summary

In this chapter the theoretical frameworks of this study were discussed. Shiftability theory, tradeoff theory, pecking order, and agency theory were compared based on the predicted relationship between the cash holding and the independent variables was explained.

The conceptual framework of the relationship between cash holding and the independent variables; firm size, profitability, board size, board gender, dividend payment and growth opportunities was explained with the moderating factor as institutional ownership.

After detailed review of key empirical findings on the variables of interest, operationalization of the research variables was done. The review indicated different findings across the study variables.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that will be used to carry out the study. The purpose of this chapter is to outline how data will be collected, tested, and analyzed. It further outlines research philosophy, a description of the population of study, research design, data collections and analysis which will be used to analyze data for the study.

3.2 Research Philosophy

Philosophy plays a crucial role in the research process because it helps researchers see new possibilities. This can improve their research abilities and their confidence in their choice of approach. Research philosophy is more focused on how knowledge is developed and how knowledge is formed (Creswell, 2009). Positivism (scientific) and interpretivist (anti positivist) research philosophies are two important ones (McMillan & Schumacher, 2010).

Positivism is a research philosophy that emphasizes the use of scientific methods to objectively observe and measure phenomena in the world. By analyzing the quantitative data, researchers can identify patterns and relationships among the variables and develop hypotheses about the determinants of cash holdings. This approach enables researchers to test their hypotheses using statistical methods, such as regression analysis, to determine which factors are most significant in explaining the variation in cash holdings among non-financial firms.

Research philosophies shape the research process through core beliefs and assumptions. There are competing perspectives on research philosophies. The study followed the positivist research philosophy. Positivist research emphasizes using empirical data to generate knowledge. According to Crossan (2013), positivist philosophy stands out for its use of quantitative methods to investigate phenomena. According to Park, Konge, and Artino (2020), positivism uses variables and metrics to validate assumptions or hypotheses. Positivism opposes interpretivism. The study studied the determinants of cash holdings on listed non-financial firms in Kenya. The study used a positivist research philosophy which guided the collection of data from non-financial annual reports and, which were then analyzed using dynamic panel regression. The positivist ideology was best suited for the study as it focused solely on measures and statistics.

3.3 Research Design

A research design is an arrangement of conditions for data collection and analysis that aims to combine relevance to the research with economy of procedure (Kothari, 2004). According to Cooper and Schindler (2003), the research design addresses issues such as data collection techniques, sampling strategies and tools, and how to deal with time and cost constraints. The study will use longitudinal research design. This design is inspired by the fact that 44 non-financial firms will be studied over an eleven -year period from 2011 to 2022. The study chose beginning period as 2011 to observe how companies handled cash holdings post-election period of 2007 and 2022 was to observe the pre and post pandemic COVID19. Longitudinal data is data that is collected for different firms over the same time. This is because it has both a time series dimension and a cross-sectional dimension. The term "cross section data" refers to observations made at a single point in time across many firms or units.

3.4 Population and sampling

A population, according to Lavrakas (2008), is any finite or infinite grouping of distinct constituents. A population, according to Hyndman (2008), is the total group of "things" that we are interested in. A population, according to Creswell (2009), is a large collection of people, things, or events that share some observable traits. All non-financial firms registered on the Nairobi stock exchange made up the relevant population for this study.

The study will use census sampling method. A census of non-financial companies listed on the NSE will be conducted. A census survey is preferred because it includes many firms with varying characteristics, so any individual firm biases will be eliminated by examining trends that cut across the firms studied, thus increasing the validity of the data collected. (Saunders et al.,2019). According to (Mugenda& Mugenda ,2003), census population studies are more representative because everyone has an equal chance of being included in the final sample drawn, and this method is appropriate for a small population under study. Non-financial firms are preferred in cash holding studies because financial companies' cash holding is regulated (Ongudipe et al., 2012). There are 44 firms (see appendix 1) sourced from Nairobi Securities Exchange website.

3.5 Data Collection Techniques

The study will use secondary data. The secondary data will be obtained from company annual reports that will be used in regression analysis. The data for all the variables will be extracted from published financial statements and annual reports of the listed non-financial firms in the NSE covering 2011-2022. The specific financial statements from which data will be extracted, statement of financial position, corporate disclosures, and financial statements. The data of interest will be cash and marketable securities, total assets, net profit after tax, the number of corporate board members, number of female board of directors, market value, book value and cash dividend.

3.6 Data Analysis

In this study, both descriptive and inferential statistics will be used. The maximum, minimum, mean, standard deviation, and skewness will be computed for each variable in the descriptive statistic. Regression and correlation analysis will be used in inferential statistics. Correlation analysis will entail the extent of relationship between the variables being studied while regression will establish the cause and effect between the dependent variable, cash holding and independent variables, firm size, profitability, board size, board gender, growth opportunities and dividend payment. The study will use a dynamic model.

3.6.1 Dynamic Panel Regression model

3.6.1.1 Model specification

Dynamic panel regression model is used to analyze data that contains both time-series and cross-sectional dimensions. The model is particularly useful when dealing with panel data, which consists of observations on multiple entities over multiple time periods.

The key feature of dynamic panel models is that they allow for the incorporation of lagged values of the dependent variable and/or the independent variables in the regression equation, considering the temporal dependencies in the data.

3.6.1.2 Justification for Arellano Bond dynamic model

The study will use Arellano–Bond dynamic panel-data model because it addresses the issue of endogeneity by using lagged values of the dependent variable as instruments for the endogenous variables. This approach helps deal with problems related to simultaneity bias and unobserved

heterogeneity that would otherwise be preeminent on the use of other panel regression methods such as OLS. The study used STATA version 17 software.

The regression model below will be used for the study.

$$\text{Cash holdings} = \beta_1 \text{profitability}_{it} + \beta_2 \text{board Size}_{it} + \beta_3 \text{board gender}_{it} + \beta_4 \text{firm size}_{it} + \beta_5 \text{Growth opportunities}_{it} + \beta_6 \text{Dividend payment}_{it} + a_i + \mu_{it} + \epsilon_{it}$$

Where,

$$Y_{it} = \beta_1 X_{it} + a_i + \mu_{it} \text{ [eq.1]}$$

Where,

- a_i ($i=1 \dots n$) is the unknown intercept for each entity (n entity-specific intercepts).
- Y_{it} is the dependent variable (DV) where i = entity and t = time.
- X_{it} represents one independent variable (IV),
- β_1 is the coefficient for that IV,
- μ_{it} is the between entity error term
- ϵ_{it} is within entity error

3.7 Research Quality

To confirm the research quality, the study will test some diagnostics tests which include Unit root test, Multicollinearity, normality, autocorrelation, and heteroscedasticity.

3.7.1 Unit-Root Stationary Test

To determine the most suitable regression model to use for the study, panel unit root test will be done to check if data is stationary or not. The study will use Augmented Dickey-Fuller- Fisher. The data is said to be stationary if the p-value is less than 5 percent for the variables hence integration order at 1. The reason for checking for unit roots is that the presence of unit roots frequently leads to spurious regression results, making the estimates obtained from regression analysis inefficient.

3.7.2 Tests for Random or Fixed effects

The choice of model in panel data must be based on information about the individual specific components and the exogeneity of the independent variables. The decision on the type of model

to be run is based on the Chow and Hausman specification test. The test is mainly based on whether pooled OLS, fixed or random effects model is appropriate, by identifying the presence of endogeneity in the explanatory variables. The test when used appropriately the random effects model gives the best linear unbiased estimates (BLUE). They are consistent, efficient, and unbiased. However, if there is correlation between the error term of the random effects model and the independent variables, its estimates would be inconsistent and thus fixed effects model would be preferred over the random effects model. The individual-specific component α might be correlated with the independent variables in the random effects model, if there are omitted variables, to which the fixed effect model is robust. The fixed effects model estimates are always consistent, but they are inefficient compared to the random effects model estimates.

3.7.3 Multicollinearity test

Multicollinearity is a statistical phenomenon that occurs when independent variables in a regression model are highly correlated with each other. This can lead to unreliable estimates of the regression coefficients, making it difficult to interpret the effects of each independent variable on the dependent variable. A multicollinearity test is used to detect the presence of multicollinearity in a regression model.

The study will test multicollinearity using variance inflation factor (VIF) test, which measures the degree of correlation between each independent variable and all other independent variables in the model. A VIF value of 1 indicates no correlation, while values greater than 1 indicate some degree of correlation. Generally, a VIF value greater than 5 or 10 is considered a cause for concern.

The presence of multicollinearity can have several negative effects on a regression model, including unstable or unreliable coefficients, reduced predictive power, and increased standard errors. Therefore, it is important to address multicollinearity to obtain accurate and reliable results. If the multicollinearity test indicates the presence of multicollinearity, there are several strategies that the study can use to address the issue. One common approach is to remove one or more of the highly correlated independent variables from the model. Another approach is to combine the highly correlated independent variables into a single variable using principal component analysis (PCA).

3.7.4 Normality test

A normality test is used to decide whether sample data has been drawn from a normally distributed population (Sekaran & Bougie, 2010). There are several methods of assessing whether data are normally distributed or not. They fall into two broad categories: graphical and statistical. Normality plays a vital role in predicting the scores of the dependent variable and in knowing the shape of the distribution (Paul & Zhang, 2009). This study adopted the Shapiro Wilk test to test for normality. It tells how well a theoretical distribution models the empirical data. Park (2003) states that the quantile-quantile plot compares ordered values of a variable with quantile of a specific theoretical distribution (i.e., the normal distribution). If two distributions match, the points on the plot will form a linear pattern passing through the origin with a unit slope.

3.7.5 Autocorrelation

Autocorrelation is a statistical concept that refers to the degree of correlation between values of a single variable over time. Autocorrelation tests are used to determine whether there is a significant correlation between observations of a variable at different points in time.

The autocorrelation test is significant because it helps to identify whether the values of a variable are dependent on the previous values. In many cases, such dependence violates the assumption of independence of observations, which is essential in statistical analysis. Autocorrelation can lead to biased estimates of regression coefficients, and inaccurate hypothesis testing results.

If the assumption of no autocorrelation is violated, the researcher needs to take appropriate steps to correct the problem. One approach is to use a different statistical method that can handle autocorrelation, such as generalized least squares or autoregressive integrated moving average (ARIMA) models. Another approach is to transform the data, such as taking first differences, which can help to eliminate the autocorrelation. In some cases, the study may need to collect additional data to reduce the impact of autocorrelation on the results.

The serial correlations tests will be done on the data to check whether the error terms are correlated across the period being studied. The study will use the Durbin Watson test whereby a value of 2 will show no autocorrelation.

3.7.6 Homoscedasticity test

A linear regression model, the error term is assumed to have a normal distribution with a constant variance and a mean of zero which is known as homoscedasticity (Chandran, 2004). When the

error term does not have a constant variance, it is said to be heteroscedastic. The study will use the Breusch-Pagan test.

The assumption of homoscedasticity is important in statistical analysis because violating it can lead to incorrect conclusions about the relationship between variables. If the assumption is violated, the study has several options, including transforming the data or using a different statistical method that does not assume homoscedasticity. Alternatively, the study could use a robust regression method that is less sensitive to violations of homoscedasticity assumptions.

3.8 Ethical considerations

In conducting this research, where external data will require external validation, those responsible will be informed of the need for the data and the expected contribution of this research to various stakeholders. The data was readily accessible through annual reports of the non-financial firms that were displayed on the respective companies' website. The researcher requested ethical approval from the University Institutional Ethics Review Committee (SU-IERC), and the National Commission for Science, Technology, and Innovation (NACOSTI). The approvals are attached in Appendix 3 and 4.

3.9 Chapter Summary

The chapter described the methodology that will be used in conducting the study. The study will use positivist philosophy.

The research population will constitute of 44 non-financial firms. The population of the study comprised of agricultural, commercial and services, automobile and accessories, construction and allied, energy and petroleum, investment and services, manufacturing, and real estate investment trusts. Secondary data was derived from yearly reports and financial statements. The methodology applied was Arellano bond dynamic panel data model to test for determinants of cash holding.

The main statistical software used was STATA version 17.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1. Introduction

This chapter presents the research findings and discussion. The research findings were analyzed as per the research objectives which were: to establish the effect of profitability on cash holding of non-financial firms listed on the NSE, to establish the effect of firm size on cash holding of non-financial firms listed on the NSE, to establish the effect of board size on cash holdings of non-financial firms listed on the NSE, to establish the effect of board gender on cash holdings of non-financial firms listed on the NSE, to establish the effect of growth opportunities on cash holdings of non-financial firms listed on the NSE, to establish the effect of dividend payment on cash holdings of non-financial firms listed on the NSE, to determine the moderating effect of institutional ownership on cash holding and the determinants on non-financial firms listed on the NSE. Therefore, this section analyses and interprets data collected from secondary sources in the period 2011-2012. The analysis is divided into three sections namely: diagnostic tests, descriptive statistics, and inferential statistics.

4.2 Descriptive Statistics

Table 4.1 presents the mean, standard deviation, minimum and maximum values of the variables. The variables are Cash holding, firm size, profitability, board size, board gender, growth opportunities, dividend payout and institutional ownership.

Table 4.1 Descriptive tests summary

	N	Minimum	Maximum	Mean	Std. Deviation
Cash holding (Percentage)	372	0	81.570	14.025	15.547
Firm size(log)	372	4.311	8.701	6.678	0.988
Profitability (Percentage)	372	- 50.318	276.031	5.977	17.177
Board size (no. people)	372	2.000	16.000	8.285	2.684
Board gender (no. people)	372	-	5.000	1.809	1.520

Growth opportunity (Percentage)	372	- 97.065	97.352	12.192	19.678
Dividend payout (Ksh.)	372	-	57.500	3.522	8.445
institutional ownership (Percentage)	372	-	98.250	65.500	23.614
Valid N (listwise)	372				

Source: Author Computation, 2023

The results indicate the average cash position is around 14.025%, with a standard deviation of 15.547%. The smallest cash holding is 0% (indicating that some businesses have no cash holdings) while the maximum cash holding is 81.570%. The average size of a firm is 6.678, with a standard deviation of 0.988. The minimum and maximum firm sizes are 4.311 and 8.701. The figures are log of net assets for the non-financial companies with smaller firms having sizes around 4.311, while larger ones have sizes around 8.701. The mean profitability is 5.977%, but the standard deviation is relatively large at 17.177%, showing significant variation among companies. The least profit is -50.318% (some firms may be losing money), while the largest profit is 20%. The average board size is 8 people, with a standard deviation of 2. The smallest observed board size is 2 people while the greatest observed board size is 16. The average board size is approximately 8, with a range from 2 to 16 people. This shows that companies in the dataset have different-sized boards of directors, which may impact their decision-making processes and governance. The average board gender is approximately 2, with a standard deviation of 1.520. The variable's range from 0 to 5 suggests variability in gender diversity. Some companies may have no gender diversity while others may have relatively higher gender diversity 5. The percentage of number of females in the firms vary between 31.25% and 62.5%. The average value of growth opportunities is 12.192%, with a large standard deviation of 19.678%, showing a diverse range of potential prospects. The minimum number is -97.065% (which could indicate that certain companies' opportunities for future growth are diminishing), and the greatest value is 97.352. The average dividend payout is ksh.3.5221, with a ksh.8.4447 standard deviation indicates variability in dividend payout policies. The minimum dividend payout is 0, showing that some companies do not pay dividends, while the largest dividend payout is ksh.57.5000. Institutional ownership has a standard deviation of 23.6%, the average is 65.5%. The lowest and highest percentages of ownership are 0.0000% and 98.250%,

respectively. This shows a relatively high average institutional ownership level, indicating significant institutional investor interest.

4.3 Diagnostic Tests

4.3.1. Heteroscedasticity

The null hypothesis is homoscedastic (lacks the problem of Heteroscedasticity) and alternative hypothesis is that data is heteroscedastic. This is shown in table 4.2.

Table 4. 2 Heteroscedasticity test

Heteroscedasticity Test: Breusch–Pagan/Cook–Weisberg test

Assumption: Normal error terms

Variable: Fitted values of Cash holding

H0: Constant variance

$$\text{chi2}(1) = 382.30$$

$$\text{Prob} > \text{chi2} = 0.0000$$

Source: Author Computation, 2023

The null hypothesis of the test states that all residuals are homoscedastic. The results indicated that the residuals are heteroskedastic in nature as indicated by a p-value less than the 5% critical value (p-value=0.00) and a chi-square value of 382.30 as reported in Table 4.3. Since the assumption of homoscedastic residuals is violated. The study therefore conducted panel corrected standard error (PCSE) model which overcome the heteroskedasticity issues. PCSE preserves the weighting of observation for autocorrelation but uses a sandwich estimator to incorporate cross-sectional dependence when calculating standard errors (Mantobaye Moundigbaye, William S. Rea, 2017). Thus, this study run the PCSE model based on the recommendation of Gujarati (2004) and (Aliyu et al.,2020).

4.3.2. Auto correlation Test

Table 4. 3 Woolridge test for Auto correlation findings

H0: no first order autocorrelation

$$F(1, 30) = 1.446$$

$$\text{Prob} > F = 0.2385$$

Source: Author Computation, 2023

The study performed the Wooldridge test for autocorrelation of panel data to test for auto correlation where the null hypothesis is that there is no auto correlation. The results indicated that

the residuals are not auto correlated (p-value=0.2385) and its F-stat was 1.446 as reported in table 4.3.

4.3.3. Multicollinearity test

The results are shown in table 4.4.

Table 4. 4 Multicollinearity test

Variable	VIF	1/VIF
Board size	2.22	0.451
Board gender	1.81	0.552
Firm size	1.38	0.727
Institution ownership	1.08	0.927
Covid_19	1.02	0.978
Profitability	1.02	0.983
Growth opportunities	1.02	0.983
Dividend payout	1.02	0.985
Mean VIF	1.32	

Source: Author Computation, 2023

The results indicate the VIF for all variables was below 10 and hence the problem of multicollinearity is absent. A VIF greater than 10 is a common threshold for detecting severe multicollinearity (Chatterjee and Price, 1990; O'Brien, 2007)

4.3.4 Normality test

A normality assessment is conducted to determine whether the data set is well modelled by a normal distribution (Paul & Zhang, 2010). This is shown in table 4.5.

Table 4. 5 Normality test findings

	Shapiro-Wilk			Sig.
	Statistic	Statistic	df	
Cash holding	0.360	0.249	372	0.000
Firm size	0.068	0.976	372	0.000
Profitability	0.456	0.048	372	0.000
Board size	0.096	0.978	372	0.000
Board gender	0.208	0.891	372	0.000
Growth opportunity	0.467	0.042	372	0.000
Dividend payout	0.338	0.457	372	0.000

institutional ownership	0.134	0.891	372	0.000
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Source: Author Computation, 2023

The normality test results indicate that the data was not normally distributed. Data is not normally distributed and since the p-values are lower than 0.05 at 95% level of significance. Data transformation was done using natural logs and since n is large, the assumption is that the data tends to be normal (Rummel, 1988). Since the sample is large, using central limit theory, the data will be normal.

4.4 Dynamic Panel Regression model

4.4.1 Data analysis

This subsection contained both the pre-estimation and post-estimation tests carried out prior and after estimation of the model respectively.

4.4.2 Pre-estimation tests

Before the estimation of the model, the study carried out a correlation analysis and an ADF stationarity test on the variables used in the study.

4.4.2.1 Correlation Test

Before regression analysis, correlation analysis was conducted to establish the association between variables. Pairwise correlation was used to establish this association. The results are shown in table 4.6.

Table 4. 6 Correlation test findings

Spearman's rho Correlations										
		Cash holding	Firm size	Profitability	Board size	Board gender	Growth opportunity	Dividend payout	institutional ownership	Covid_19
Cash holding	r	1.000	0.044	.333**	.183**	0.080	0.090	.349**	-0.019	0.023
Firm size	r	0.044	1.000	0.074	.557**	.306**	-.321**	.114*	.249**	0.026
Profitability	r	.333**	0.074	1.000	0.101	-0.001	0.034	.479**	-0.082	-.161**
Board size	R	.183**	.557**	0.101	1.000	.675**	-.248**	.189**	.235**	0.047
Board gender	R	0.080	.306**	-0.001	.675**	1.000	0.002	-0.010	.253**	.132*
Growth opportunity	R	0.090	-.321**	0.034	-.248**	0.002	1.000	-.325**	.106*	-0.033
Dividend payout	R	.349**	.114*	.479**	.189**	-0.010	-.325**	1.000	0.041	-0.064

institutional ownership	R	-0.019	.249**	-0.082	.235**	.253**	.106*	0.041	1.000	0.068
Covid_19	R	0.023	0.026	-.161**	0.047	.132*	-0.033	-0.064	0.068	1.000
** <i>. Correlation is significant at the 0.01 level (2-tailed).</i>										
* <i>. Correlation is significant at the 0.05 level (2-tailed).</i>										

Source: Author Computation, 2023

Profitability has a positive correlation with cash holding. This suggests firms with more cash holdings tend to be more profitable. Board size has a positive correlation with cash holding. This indicates larger boards tend to hold more cash. Board gender has a very weak positive correlation with cash holding. This suggests a very weak positive relationship, with cash holding tending to increase slightly as the board gender increases. Growth opportunity has a weak positive correlation with cash holding. This indicates a very weak positive relationship between cash holding and growth opportunity. As cash holding increases, growth opportunity tends to increase slightly. Dividend payout has a positive correlation with cash holding. This suggests firms with more cash holdings tend to pay dividends.

4.4.2.2. Unit-Root Stationary Test

Panel data contains both cross-sectional and time series. The study first does a univariate analysis to explore stationarity properties for each of the series of variables used in the study. Estimating models without accounting for the non-stationarity of data can result in erroneous conclusions (Gujarati, 2003). The Fisher-unit root test, specifically the Augmented Dickey fuller and Pasaran test, was used in this study to test unit root tests for panel data. The reason for screening for unit roots is that the presence of unit roots frequently leads to misleading regression findings, making the estimates derived via regression analysis wasteful.

Using Augmented Dick Fuller and Pasaran test, the results are as below table 4.1.

Table 4.7 Unit Root Stationary test findings

Variable	Statistic	Value	P-value
Cash holding	Inverse chi-squared (62) P	205.0036	0
	Inverse normal Z	-6.1572	0
	Inverse logit t (159) L*	-8.346	0
	Modified inv. chi-squared Pm	12.8421	0
Firm size	Inverse chi-squared (62) P	90.0644	0.0115
	Inverse normal Z	0.058	0.5231

	Inverse logit t (159) L*	0.0563	0.5224
	Modified inv. chi-squared Pm	2.5203	0.0059
Profitability	Inverse chi-squared (62) P	232.6493	0
	Inverse normal Z	-6.5795	0
	Inverse logit t (159) L*	-9.6344	0
	Modified inv. chi-squared Pm	15.3248	0
Board size	rho Z	-4.4748	0
Board gender	rho Z	-1.8406	0.0328
Growth opportunity	Inverse chi-squared (62) P	160.0557	0
	Inverse normal Z	-2.5548	0.0053
	Inverse logit t (154) L*	-4.5327	0
	Modified inv. chi-squared Pm	8.8057	0
Dividend payout	Inverse chi-squared (62) P	108.6613	0.0002
	Inverse normal Z	-3.0826	0.001
	Inverse logit t (144) L*	-3.4413	0.0004
	Modified inv. chi-squared Pm	4.1903	0
institutional ownership	Inverse chi-squared (62) P	239.5681	0
	Inverse normal Z	-4.4802	0
	Inverse logit t (149) L*	-9.8361	0
	Modified inv. chi-squared Pm	15.9461	0

Source: Author Computation, 2023

The p value for the above is below 0.05 meaning the data is stationary.

4.4.3 Post estimation tests

Diagnostics tests were carried out to validate the results from system Arellano Bond dynamic.

These tests are for validity of instruments and test for serial autocorrelation in the error term.

4.4.3.1 Test for serial correlation in the error term

Arellano–Bond test for zero autocorrelation in first-differenced errors. It is a statistical test commonly used in the context of dynamic panel data models to assess whether there is significant autocorrelation in the first-differenced errors.

H0: No autocorrelation

Order	z	Prob > z
1	-0.9203	0.3574

2	0.39448	0.6932
3	-1.0033	0.3157
4	0.50608	0.6128

Source: Author Computation, 2023

The P values above are greater than 0.05, the null hypothesis will not be rejected. This implies that there is no significant autocorrelation in the first-differenced errors at these lags.

4.4.4 Arellano–Bond dynamic panel-data estimation

Table 4.8: Arellano–Bond dynamic panel-data estimation

	(1) Cashholding	(2) Cashholding	(3) Cashholding	(4) Cashholding	(5) Cashholding
Lag Cash holdings	-.345*** (.001)	-.341*** (.002)	-.335*** (.003)	-.334*** (.004)	-.357*** (.011)
Firm size	-63.175*** (1.342)	-68.661*** (1.59)	-59.174*** (3.716)	-46.777*** (11.482)	
Profitability	.289*** (.004)	.296*** (.003)	.273*** (.01)	.237*** (.028)	
Covid_19	12.199*** (.092)	10.025*** (.611)	10.864*** (.219)	11.334*** (1.328)	11.179*** (.545)
Board size		3.661*** (.806)	4.157*** (.799)	4.398*** (.908)	
Board gender		-.028 (.412)	-.7 (.854)	-3.963 (2.512)	
Growth opportunity			.014*** (0)	.014*** (0)	
Dividend payout			-.002 (.067)	.036 (.051)	
Institutional ow ~p				.243*** (.063)	
Firm size z					-51.038*** (11.973)
Profitability z					77.991*** (18.1)
Board size z					-13.94 (11.375)
Board gender z					10.276* (5.449)
Growth opportunity ~z					38.741*** (6.453)
Dividend payout z					-5.973 (4.004)
Institutional ow ~z					19.74** (7.955)
Firm size _io					8.542 (10.874)
Profitability _io					-69.186*** (10.037)
Board size z _io					-19.325** (8.118)
Board gender z _io					-9.962* (5.466)
_cons	440.034*** (9.733)	443.124*** (10.432)	375.453*** (21.896)	277.42*** (73.64)	20.201*** (5.815)

Observations	310	310	310	310	310
Number of Company	31	31	31	31	31
Sargan tests	26.763	25.601	25.243	23.815	18.011
Chi ²	154822.42	92088.657	7262844.4	4072422.2	121726.59
P	0.0000	0.0000	0.0000	0.0000	0.0000
firm characteristics	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes
board characteristics	NO	Yes	Yes	Yes	Yes

Standard errors are in parentheses

**** p<.01, ** p<.05, * p<.1*

Source: Author Computation, 2023

From Table 4.8 in model 1, firm size (-63.175) has negative and is highly significant with cash holdings as the p value is than 0.01 at 99% level of significance. This implies that for each unit increase in firm size, cash holding decreases by 63.175 units suggesting that larger firms tend to hold less cash relative to their size. Profitability (0.289) has a positive and is highly significant to cash holding as the p value is than 0.01. This implies an increase in profitability of one-unit results in a 0.289-unit increase in cash holding indicating that more profitable firms tend to hold more cash. COVID 19 (12.199), the controlled variable has a positive and highly statistically significant effect on cash holding leading to a 12.199-unit increase in cash holding for each unit change, suggesting that firms increased their cash reserves during the COVID-19 pandemic.

In model 2, firm size, profitability, COVID 19 is like model 1 but with different coefficients. Board size (3.661) has a positive effect and is highly significant to cash holdings as the p value is less than 0.01. A one-unit increase in board size is associated with a 3.661-unit increase in cash holding, indicating that firms with larger boards tend to hold more cash. Board gender (-0.028) has a negative relationship meaning as the gender composition of the board increases, cash holding decreases by 0.028 units. Board gender is not statistically significant to cash holding.

In model 3, firm size, profitability, COVID 19, board size and board gender are like model 2 but with different coefficients. Growth opportunity (0.014) has a positive effect and highly significant to cash holding meaning for each unit increase in growth opportunity, cash holding increases by 0.014 units. This implies firms with greater growth opportunities tend to hold more cash, possibly to finance future expansion or to mitigate risk associated with growth. Dividend payout (-0.002) has a negative relationship with cash holding but it is not statistically significant to cash holding. This indicates as the dividend payout increases, cash holding reduces by 0.002 units.

In model 4, firm size, profitability, COVID 19, board size, board gender and growth opportunity are like model 3 but with different coefficients. This is except for dividend payout (0.036) has a positive relationship with cash holding but no significant relationship. Institutional ownership (0.243) moderating effect is positive and highly significant. This suggests that firms with higher institutional ownership tend to hold more cash. Institutional investors, such as mutual funds or pension funds, may influence a firm's financial decisions, including cash management strategies.

In model 5, firm size, profitability, and growth opportunity is like model 4 with different coefficients. Board size (-13.94) has a negative relationship and is not statistically significant while board gender (10.276) has a positive relationship and is somewhat significant to cash holdings. Dividend payout (-5.973) has a negative relationship and is not statistically significant to cash holdings.

Overall, the relationship between firm size and cash holding of listed non- financial firms is negative and the highly significant negative coefficients for firm size suggest that larger firms tend to have lower cash holdings. This might be because larger firms have more investment opportunities and are less reliant on holding excess cash for financial stability. This finding conforms to trade off theory that postulates that there are economies of scale in cash management. This thus implies that larger firms hold less cash than smaller firms. There exists a positive and significant relationship between profitability and cash holding.

From the regression result, board size has a positive and significant relationship with cash holding which implies larger boards hold more cash.

Board gender has a negative relationship with cash holding. This may indicate that companies with more gender-diverse boards are making financial decisions that result in lower cash reserves. The results show there is a significant and positive relationship between growth opportunity and cash holdings. Firms may need more cash on hand to invest in growth projects or manage potential financial risks associated with expansion.

Dividend payout has a positive and is not statistically significant effect on cash holding. This implies that companies with higher dividend payouts tend to hold more cash.

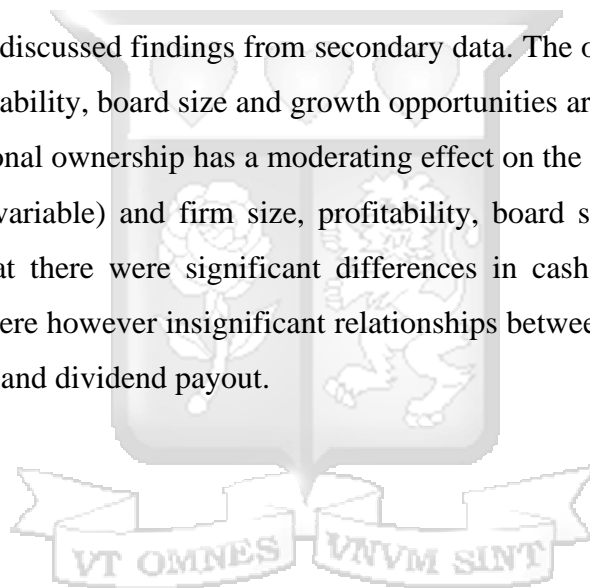
From the above model the controlled variable COVID 19 has a positive and statistically significant effect on cash holding. During the pandemic, companies increased their cash reserves to navigate economic uncertainties, cover operational expenses, and manage potential disruptions in their cash

flow. This suggests that COVID-19 had a significant controlling effect on cash holdings, influencing firms to hold more cash as a risk mitigation strategy. This finding is consistent with (Simpson,2020) who studied “how do firms learn? Evidence from corporate cash holdings during the COVID-19 pandemic” found that greater pandemic exposure is associated with higher corporate cash holdings and that firms learn from prior experiences as they manage their cash policies. Further a study by (Chung et al.,2022) on impact of the Covid 19 pandemic on corporate cash holdings: Evidence from Korea found that firms reserved more cash and the marginal value of cash to shareholders was higher in 2020 due to the pandemic.

The moderating effect of institutional ownership is positive and statistically significant.

4.5 Chapter Summary

In this chapter, the study discussed findings from secondary data. The overall results of the study indicated firm size, profitability, board size and growth opportunities are significant determinants of cash holding, Institutional ownership has a moderating effect on the relationship between cash holding (the dependent variable) and firm size, profitability, board size, growth opportunities (dependent variable), that there were significant differences in cash holding across different industry sectors. There were however insignificant relationships between cash holding and board gender and Cash holding and dividend payout.



CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The general objective of the study was to investigate the determinants of cash holdings for non-financial firms listed on the Nairobi Securities Exchange in Kenya. Hence based on the comparative analysis of the objectives, this study provided answers to research questions in chapter one. The answers to the research questions are based on descriptive statistics, correlation analysis and regression analysis discussed in this chapter. The discussions on the findings of this study are organized based on research questions. This chapter summarizes the findings of the study through the analyzed variables in this study. Thereafter, conclusions are made and finally policy recommendations and areas of further research are suggested.

5.2. Discussion of the Findings

The study sought to investigate the determinants of cash holdings for non-financial firms listed on the Nairobi Securities Exchange in Kenya. The study used profitability, firm size, board size, board gender, growth opportunities and dividend payments as determinants. The findings with respect to each variable are discussed below.

5.2.1 Effect of Firm size on Cash holdings

This study sought to determine the effect of firm size on cash holdings. The study measured size by the Natural Logarithm of total assets. Based on Arellano–Bond dynamic panel-data regression analysis findings showed that firm size has significant and negative relationship with cash holdings. The findings are consistent with shiftability and trade off theory whereby large firms hold less cash as they have access to better external financing options and investment opportunities. Case in point large companies like Safaricom has access to larger external pool of creditors as compared to Flame tree. Findings contrast with Barasa (2018) whose study established that firm size has a positive and insignificant effect on cash holdings. The findings above are consistent with previous findings by Ferreira & Vilela (2004), Nguyen (2005), Drobetz and Gruninger (2007), and Yamada and Kawakatsu (2019), (Angelovska & Valen, 2020; Athar et al.,

2020; D'Mello, Krishnaswami, & Larkin, 2008) all who reported negative relationship between cash holding and size of the firm.

5.2.2 Effect of Profitability on Cash holdings

Findings established that in relation to cash holdings, profitability has a positive and significant relationship with cash holdings. Meaning profitability was a significant determinant of cash holding of non-financial firms listed on the NSE. The findings are consistent with pecking order theory that states profitable firms generate higher internal funds through their operations, mainly in the form of profits or free cash flow. These internal funds can be used for various purposes, including investments, debt repayment, or distribution to shareholders. However, before resorting to external financing, such firms may choose to retain a portion of their profits as cash reserves. Additionally, profitable firms often maintain higher cash reserves to enhance financial flexibility. This finding supports studies of Dang, Nguyen, and Nguyen (2019) Abdelsalam and El-Masry (2018), (Alnori & Alqahtani, 2019) and Jebran et al. (2019) who reported a positive significant relationship with cash holdings.

5.2.3 Effect of Board size on Cash holdings

The findings established board size is positive and significant to cash holdings. This shows board size was a significant determinant of cash holdings on non-financial firms listed on NSE. The findings were consistent with agency theory. Larger boards may lead to more risk-averse decisions, including holding higher cash reserves. This finding supported by several empirical studies that demonstrate the negative impact of board size on firm performance on one hand, and the positive relationship between board size and cash holdings on the other (Gill & Shah, 2012; Jamil, Anwar, Afzaal, Tariq, Asif, 2016 and Wang et al. 2019) while Chen et al. (2021) findings contrasted showing board size has no significant relationship with cash holdings.

5.2.4 Effect of Board gender on Cash holdings

The findings of the study show board gender have a negative and insignificant relationship with cash holding. The findings support the study of Li et al. (2019) who investigated the impact of board gender diversity on cash holdings for US firms in this study. According to the study, firms with more women on their boards tend to hold less cash, implying that gender diversity may

improve board effectiveness and lower agency costs. Sharma et al. (2020) and Kakabadse et al. (2020) findings contrasted that having more women on the board is associated with higher cash holdings because they bring diverse perspectives, skills, and experience that can improve strategic cash management decision-making. The study contrasted trade off theory which is based on the cost-benefit tradeoff, corporations with more females on their boards of directors tend to hold the optimal amount of cash. Furthermore, firms with a higher percentage of female employees have lower agency costs (Jurkus et al, 2011). The study had insignificant results due to no female or at least one across the companies.

5.2.5 Effect of Growth opportunities on Cash holdings

The findings of the study show growth opportunity is positively related to Cash holding and is highly statistically significant. A positive relationship has been found to support the pecking order theory in that firms with plenty of investment opportunities will hold more cash. Most of the previous studies find a positive and significant relationship between growth opportunities and corporate cash holding. (Hu et al. 2018), (Chauhan et al.2018), (Maheshwari & Rao, 2017), (Nyborg & (Wang, 2014), (Sun et al.2012), (Kim et al.2011), (Bates et al. 2009), (Ferreira & Vilela ,2004).

5.2.6 Effect of Dividend payout on Cash holdings

The finding of the study show dividend payout is positively related to Cash holding, and statistically insignificant. Meaning dividend payout was not a significant determinant of cash holding of non-financial firms listed on the NSE. This relationship might be explained by the fact that companies with a history of paying dividends may maintain higher cash reserves to meet dividend obligations to shareholders. The study conforms to the findings of (Ahmed et al., 2018); (Chireka & Fakoya, 2017); (Drobetz & Grüninger, 2007); (Shah, 2011).

The findings contrast the tradeoff theory, dividend payments have a negative relationship with cash holdings of a firm but were consistent with (Ahmed et al., 2018); (Chireka & Fakoya, 2017); (Drobetz & Grüninger, 2007); (Shah, 2011) that established cash holdings and dividend payments are have a positive relationship.

5.2.7 Moderating effect of Institutional ownership on Cash holdings and independent variables

The final objective was to establish whether institutional ownership had a mediating effect between the independent variables and cash holding of non-financial firms listed on the NSE. The results show that institutional ownership has a positive and significant moderation on the relationship between cash holding and the independent variables. The findings were consistent with agency theory which states that institutional ownership can serve as a mechanism to mitigate agency problems and reduce agency costs. The findings supported (Chen et al.,2018), (Perez et al.,2016), and (Nguyen et al.,2018) that reported institutional ownership moderates between cash holdings and firm size, board size, profitability.

5.3 Conclusion

The findings of this study provide valuable insights into the determinants of cash holdings for non-financial firms listed on the NSE. Four theories were tested, including the pecking order theory, shiftability theory, trade-off theory, and agency theory. Overall, the study both supports and advances these theories in some fields while also presenting contradictions in others.

Firstly, the pecking order theory received substantial support from the findings. The positive and significant relationship between profitability and cash holdings aligns well with this theory, indicating that profitable firms tend to prioritize internal financing and retain higher levels of cash reserves. Similarly, the positive relationship between growth opportunities and cash holdings supports the notion that firms with ample investment opportunities hold more cash, as predicted by the pecking order theory.

Additionally, the findings regarding the effect of firm size on cash holdings provide support for both the shiftability theory and the trade-off theory. The negative relationship between firm size and cash holdings suggests that larger firms, with better access to external financing options and investment opportunities, hold less cash. This observation is consistent with both theories, which emphasize the flexibility of larger firms in accessing external financing and the trade-off between holding cash and investing in profitable ventures.

However, there were also instances where the findings contradicted certain theories. For example, the positive and significant relationship between board size and cash holdings contrasts with the prediction of the trade-off theory, which suggests that larger boards may lead to more risk-averse

decisions, including holding higher cash reserves. Similarly, the insignificant relationship between dividend payout and cash holdings contradicts the trade-off theory, which posits that dividend payments have a negative relationship with cash holdings. The study contradicted the theory as some large companies pay little or no dividend hence making it insignificant.

Previous studies like (Gill and Shah, 2012) on Determinants of Corporate Cash Holdings: Evidence from Canada showed that market-to-book ratio, cash flow, net working capital, leverage, firm size, board size, and the CEO (chief executive officer) duality significantly affect the corporate cash holdings in Canada, the findings were consistent with the study.

Furthermore, the findings regarding the effect of board gender diversity on cash holdings present a nuanced picture. While the negative and insignificant relationship observed in this study contradicts the expectations of some theories, such as the trade-off theory, it aligns with the findings of previous research suggesting that gender diversity on boards may influence cash management decisions in complex ways. The study contradicted the theories due to no female or at least one female on the board across companies hence making it insignificant.

5.4 Recommendation

The inverse relationship between firm size and cash holdings indicates that larger firms, as measured by their size or total assets, tend to hold less cash relative to their size compared to smaller firms. Therefore, larger firms should optimize cash management strategies based on the specific needs and financial characteristics of the firms. The study recommends guidelines to be set for different size firms as one-size-fits-all policies may not be suitable, and larger firms might have different liquidity needs compared to smaller ones. Also, small firms should implement risk management strategies to protect against potential cash flow disruptions and ensure business continuity.

It was established that profitability is a significant determinant of cash holdings, which was consistent with pecking order theory and therefore managers in nonfinancial listed firms should prioritize effective cashflow management. Cash management strategies to align with the profitability of the business while considering investment opportunities and risk mitigation. The study recommended non-financial firms, especially those with higher profitability, to invest in productive and value generating activities.

The study indicates that board size is a significant determinant of cash holdings. The positive relationship means a larger board size is associated with larger cash holdings. The study recommends firms to continuously review and assess the effectiveness of your board's involvement in cash management. They should ensure that the board's role aligns with the company's strategic goals and evolving financial needs. Also developing guidelines for board size that consider specific characteristics like company size by avoiding one-size-fits-all approach and allow companies flexibility in determining their optimal board size.

In Kenya most listed non-financial firms have few females on board. The study recommends non-financial firms to continue to promote gender diversity on the board of directors as a matter of good corporate governance and inclusivity. Diverse perspectives can contribute positively to decision-making and governance. A diverse board can lead to improved corporate culture, better risk management, and enhanced stakeholder trust.

Growth opportunities are a significant determinant of cash holdings meaning that as growth opportunities increase, firms tend to hold more cash relative to their size. The study recommends non-financial firms to assess the potential risks and uncertainties associated with growth opportunities. While maintaining cash reserves for strategic investments, develop robust risk management strategies to navigate uncertainties and ensure financial stability.

Dividend payment was an insignificant determinant. The study recommends non-financial firms should strike a balance between returning value to shareholders through dividends and reinvesting in the company's growth. Careful evaluation of investment opportunities is essential to optimize cash usage.

Institutional ownership has a significant moderation on the cash holding and firm, board, investment characteristics relationships. The study recommends fostering collaboration and effective communication between institutional owners and company management. The study also recommends enforcement of disclosure requirements that mandate companies to report on the influence of institutional ownership on financial decisions, including cash management. Transparent reporting can provide investors with insights into how institutional ownership moderates the relationship between independent variables and cash holdings.

5.5. Limitation of the study

Obtaining comprehensive and reliable data on cash holdings and related determinants was challenging due to limited disclosure by firms. Additionally, non-financial firms operate in diverse industries with varying business models and cash flow dynamics that led to heterogeneity across industries. The dynamic nature of cash management decisions and their responses to evolving economic conditions was overlooked in cross-sectional studies. Strategic considerations, such as risk management and investment opportunities, were not fully captured by traditional financial determinants, necessitating a deeper understanding of managerial motivations. Agency costs and governance mechanisms played a role in cash management decisions, but quantifying these factors empirically posed challenges.

Arellano–Bond dynamic panel-data model was applied as consequence of heterogeneity issues that arises when using OLS. While Sargan tests are used to assess the validity of instruments in instrumental variable models, their interpretation depends on underlying assumptions. Overreliance on instrumental variables requires careful consideration of their relevance and validity.

5.6. Contribution to Knowledge

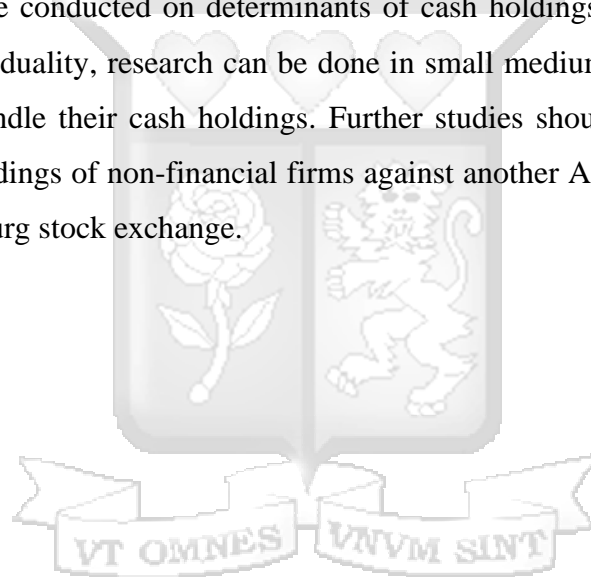
The identified negative relationship between firm size and cash holdings aligns with trade off theory emphasizing the role of firm size in determining access to external financing, providing empirical support for these theoretical perspectives. Moreover, the positive correlation between profitability and cash holdings corroborates pecking order theory highlighting the strategic use of cash by more profitable firms, aligning with the broader literature on cash holdings but contradicted findings of (Constantine,2018).

The insights into board characteristics, such as the positive relationship between board size and cash holdings and the nuanced impact of board gender diversity, offer guidance for firms in tailoring their governance structures to align with desired financial strategies. This practical understanding of how board composition influences cash management could inform corporate decision-makers seeking to optimize their financial positions and enhance shareholder value. The study aligns with agency theory. The study provided insight locally as previous studies were done globally. The study aligned with Wang et al. (2019), Yan and Wang (2021), Fernández-Méndez et al (2018).

The findings also hold significant implications for policymakers in the Nairobi Securities Exchange and similar markets. The observed positive relationship between institutional ownership and cash holdings suggests that policymakers should consider the impact of institutional influence on corporate financial decisions. This insight may inform regulatory frameworks aimed at balancing the interests of various stakeholders while fostering a conducive environment for corporate financial health and stability. The study provided insight locally as most previous studies were done globally and the study aligned with (Perez et al.,2016), (Nguyen et al.,2018) and (Chen et al.,2018).

5.7. Recommendation for Further Study

Similar studies should be conducted on determinants of cash holdings and include more board characteristics like CEO duality, research can be done in small medium sized firms in Kenya to investigate how they handle their cash holdings. Further studies should be done in comparing determinants of cash holdings of non-financial firms against another African listed non-financial firms like the Johannesburg stock exchange.



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APPENDICES

Appendix 1: Non-financial Firms Listed on Nairobi Securities Exchange

Sector	Company
Agricultural	Eaagads Ltd.
	Kapchorua Tea Kenya Plc.
	Kakuzi Plc
	Limuru Tea Co. Ltd
	Sasini Plc.
	Williamson Tea Kenya Plc.
Automobiles and accessories	Car & General (K) Ltd.
Commercial and services	Express Kenya Plc.
	Homeboyz Entertainment Plc.
	Sameer Africa Plc
	Kenya Airways Ltd.
	Nation Media Group Plc.
	Standard Group Plc.
	TPS Eastern Africa (Serena) Ltd.
	WPP Scan group Plc.
	Uchumi Supermarket Plc.
	Longhorn Publishers Plc.

	Deacons (East Africa) Plc.
	Nairobi Business Ventures Ltd.
Construction and allied	ARM Cement Plc.
	Bamburi Cement Ltd.
	Crown Paints Kenya Plc
	E.A Cables Ltd.
	E.A Portland Cement Ltd.
Energy and Petroleum	Total Kenya Ltd.
	KenGen Plc.
	Kenya Power & Lighting Plc.
	Umeme Ltd
Investment	Olympia Capital Holdings Ltd.
	Centum Investment Plc
	Trans - Century Plc.
	Home Afrika Ltd.
	Kurwitu Ventures Ltd.
Investment services	Nairobi Securities Exchange Plc.
Manufacturing and allied	B.O.C Kenya Plc.
	British American Tobacco
	Carbacid Investments Plc.
	East African Breweries Ltd
	Mumias Sugar Co. Ltd

	Unga Group Ltd
	Eveready East Africa Ltd.
	Kenya Orchards Ltd.
	Flame Tree Group Holdings Ltd
Telecommunication	Safaricom Plc.



Appendix 2: Secondary data collection tool

Name of the Company-----

Sector -----

Year	Cash holding	Firm size	Profitability	Board size	Board gender	Dividend	Growth opportunities
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							



Appendix 3: University Institutional Ethics Review Committee (SU-IERC)

RHInO Ethics - SU-ISERC1806/23 - 1 of 1 - Date Issued: 2023-06-29

Strathmore University Institutional Scientific and Ethical Review Committee (SU-ISERC)



Final Decision

This is to certify that the application for ethics clearance submitted by:

Principal Investigator: Ms. Ongwae, Judy

Reference number: SU-ISERC1806/23

For Study: "Cash Holdings on non-financial firms"

Was reviewed and received the following status: "done"

Reviewer Comments

The SU-ISERC wishes you all the best with this research undertaking.

29 June 2023 09:38:03

Appendix 4: National Commission for Science, Technology, and Innovation (NACOSTI)



REPUBLIC OF KENYA

Ref No: 706770



**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Date of Issue: 17/July/2023

RESEARCH LICENSE



This is to Certify that Miss. Judy Ongwae of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Determinants of cash holdings on non financial firms listed on Nairobi Securities Exchange, for the period ending : 17/July/2024.

License No: NACOSTI/P/23/27663

Applicant Identification Number

706770



Director General
**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION**

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