

**THE EFFECT OF LIQUIDITY ON FINANCIAL PERFORMANCE
OF AGRICULTURAL COMPANIES LISTED AT THE NAIROBI
SECURITIES EXCHANGE**

BY

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D61/77588/2015

**A RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION
AT THE SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

OCTOBER 2018

DECLARATION

This research proposal is my original work and has not been presented for a degree in any other university.

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This research project has been submitted for presentation with my approval as the university supervisor.

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ACKNOWLEDGEMENT

Much appreciation to my supervisor Dr. Winnie Nyamute for her professional advice, guidance, support and encouragement which enabled timely and successful completion of this research.

I am also thankful to my moderator Dr.Iraya for the constructive criticism and encouragement, and the University of Nairobi for providing a conducive study environment.

I wish to thank friends in Agricultural companies for their support in obtaining the data and research material without which, I would not have completed my research.

Much love and gratitude to my family for their support, prayers and understanding throughout the study period, especially my young Children Ian and Ivy. They made it easy for me to conveniently continue with my research by ensuring minimal interruptions during my study time.

Above all, I am grateful to the Good Lord, for blessing me with good health, sober mind and favor throughout my research.

DEDICATION

I dedicate this project to my spouse, Geoffrey K Rono, for consistently pushing and challenging me to be better. I would not be where I am today without the pressure and continuous demand for excellence from him. He never once gave up on me, or stopped expecting better even when I was not at my best, and from that, I got to discover I could achieve anything I set my mind to.

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ABSTRACT

The objective of the study was to determine how and the extent to which agricultural firms listed at the Nairobi Stock Exchange (NSE) are impacted by liquidity. It also aimed at reviewing the increasing body of theoretical and empirical studies that have endeavored to examine the range of magnitude and effects of liquidity on firm performance. This study adopted an exploratory research design combining both descriptive and causal types of analysis. It was a longitudinal research with the scope being a case study of all the seven listed agricultural firms at the NSE. The target population was the seven listed firms NSE. Secondary sources of data were employed, and data was collected on; profit after tax, total assets, current assets and liabilities, inventory, prepayments, cost of sales, firm size, long-term debt, and total shareholders' funds. The unit period of analysis was annually, and data was collected for the period from January 2008 to December 2017. The study applied correlation analysis, and linear regression with the technique of estimation being Ordinary Least Squares (OLS) so as to establish the relationship of liquidity and firm performance. The study determined that there is a significant positive relationship between liquidity and performance of firms quoted in the NSE. A unit increase in the quick ratio variable indicating liquidity would lead to a 0.271 increase in the firm performance. However, this happens after the introduction of the control variables; inventory turnover and firm size. These act as moderating variables because they affect the strength of the relationship between liquidity and firm performance. The study concluded that increase in liquidity can lead to enhanced firm performance in presence of the moderating variables, inventory turnover and firm size. The study recommended that; the government through its various arms can formulate rules, regulations and policy that revitalize financial performance of agricultural firms which can boost the overall economy, and the management of agricultural firms can adjust their liquidity so that it promotes their company's financial performance.

LIST OF ABBREVIATION AND ACRONYMS

KPI Key Performance Indicator

NSE Nairobi Securities Exchange

ROA Return on Asset

ROE Return on Equity

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Liquidity is referred to as the capability of an enterprise to handle short term financial debts through changing of the short term assets into cash devoid of incurring at all loss. Assets are regarded as liquid assets of high-quality when they could be readily and instantaneously changed into cash at minimal or without a loss of value at all. Markets are regarded as liquid when those with assets holdings are able to sell them without substantial losses in order to benefit the finances they require to realize other obligations (Holmström & Tirole, 2011). Financial performance is referred to as the evaluation of results of an enterprise's policies as well as operations monetarily. It assesses the overall financial strength at a given time period. Organizations have a number of measures of financial performance. However, the basic measures include the Return on Assets (ROA) and Return on Equity (ROE). Various studies have established a positive link between liquidity and financial performance. Firms therefore strive to control their liquidity in order to enhance their financial performance and to continue being competitive (Venanzi, 2011).

Numerous theories have been set forth to show the connection between liquidity and financial performance. This study will rely on the trade-off theory, liquidity preference theory and the Baumol Inventory Model. Trade-off theory was instituted by Modigliani and Miller in 1958 under the conventions that capital markets are perfect and it proposes that companies target an optimal liquidity level to balance the advantage and cost of retaining cash (Mahfoudh, 2013). The Liquidity preference theory was established by Keynes (1936) in his research "The general concept of interest, employment as well as money (Nyabate, 2015). The theory suggests three

drives for holding on to cash; transaction motive, precautionary motive as well as the speculative motive. The theory will be applied in the study because investors of agricultural firms listed at the NSE, putting all things equal prefer liquid investments. The Baumol Inventory Model established autonomously by William Bamoul (1952) as well as James Tobin (1956), was advanced to evaluate the sum of cash that ought to be held by an entity. It is centered on Economic Order Quantity whose aim is to establish the ideal target cash balance (Schonfelder, 2012).

Agriculture is a key sector in the global economy as it contributes to food security which is basic to the world population. Agricultural companies globally face challenges in performance with some on the verge of collapse. Due to the global competitiveness of the business environment, agricultural firms seek out to achieve the goals of liquidity and improved financial performance through selection of varied and balanced asset portfolio in the framework of the regulators. Profitability is enhanced by holding liquid assets, though, there is an extent whereby additional retaining of liquid assets decreases these firm's profitability or it remains constant (Marr, 2013). These firms are similarly required to have a particular percentage of their liquid assets. This could possibly lead to an opportunity cost of holding assets instead of venturing into investment. Financial managers of these firms therefore seek out to attain a balance between liquidity and profitability (financial performance) (Agbada, & Osuji, 2013). A solution as to how much liquidity is necessary for optimal financial performance is an important issue given the significance of the agricultural segment for the economy. This study hence strives for examining the impact of liquidity on financial performance in order to provide the agricultural

companies with a basis on which to improve financial performance through liquidity considerations.

1.1.1 Liquidity

Allen, Carletti and Krahen (2011) define liquidity as having sufficient cash flow that permits the enterprise to make obligatory payments and safeguard continued operations. It relates to the solvency of a company's overall financial position. Liquidity according to Duttweiler (2011) is a ratio between the total current assets and the total current obligations or obligations within a year or the normal operational cycle of the company whichever is greater. Liquidity is therefore the enterprise's ability to meet its short term debt. Holmström and Tirole (2011) further refer to liquidity as an enterprise's capability to settle its short- term debts through the conversion of its short term assets into cash without incurring losses. High quality current assets are assets that can easily be convertible into cash with slight or without any loss in value. Liquid assets are described by a high trading activity level and play an important part in the financial markets operations. Liquidity is vital in safeguarding effective enterprise's operation.

Basically, liquidity is essential for firms as it enables them to meet current claims and obligations as and when they are due. Firms therefore preserve their liquidity position by converting their assets into cash. By a firm being liquid, it is able to remain solvent and avoid bankruptcy, hence safeguarding the firm's investments or fixed assets that would have been otherwise sold to maintain liquidity (Holmström & Tirole, 2011). Liquidity similarly enables firms to take the advantage of a number of profitable openings for instance favorable discount offered by the suppliers. Liquidity is also

important in enabling a firm maintain the daily operational undertakings. Liquidity is important in aiding the firm pay creditors in time for their interest or principal. Additionally, liquidity enables a firm pay its shareholders' dividends in time thereby safeguarding control of their ownership (Karmakar, 2018).

Quick ratio similarly referred to as acid-test ratio or quick asset ratio is a liquidity measure that evaluates firm's capability to utilize its highly liquid assets to instantaneously handle its short-term financial obligations. It indicates the firm's wealth as well as financial flexibility and evaluated by dividing the aggregate of cash, marketable securities as well as accounts receivables by the current liabilities. Quick ratio can therefore be said to be a realistic measure of an entity's short term liquidity. A higher quick ratio signifies a better position of a company in terms of liquidity (Gerber, 2018). Working capital is also another measure of liquidity that shows the cash that is instantaneously available. It is determined by deducting the current obligations from current assets. It entails held cash, accounts receivable, short-term investments accounts payable, accrued expenses as well as loans (Duttweiler (2011). Liquidity is also measured using current ratio that shows how well firm is positioned to go through its financial debts constantly and promptly as well as to safeguard a credit rating level necessary for business growth. It is evaluated by dividing total assets by liabilities (Holmström & Tirole, 2011).

1.1.2 Financial Performance

Marr (2012) defines the term financial performance as an evaluation of a company's general financial strength over a specified period of time assessed through its capacity to encounter its financial as well as operational objectives. Venanzi (2011) defines

financial performance as an individual assessment of in what way an entity can properly utilize assets from its major business approach and make profits. According to Verma (2017), financial performance refers to the evaluation in monetary terms the results of an entity's policies as well as operations. These outcomes are mirrored in the entity's ROI, ROA as well as the VAT. Financial performance, therefore, entails the evaluation of company's policies as well as operations in monetary terms.

Profitability ratios for evaluating financial performance include: Gross profit margin that indicates the cash sum made when direct costs of sales have been regarded, or the contribution. Operating expenses margin which is between the gross as well as net profit determinants. Overheads are considered, but not interest and tax payments, hence it is similarly termed as the EBIT (earnings before interest and taxes) margin. Net profit margin is a considerably contracted evaluation of revenues, because it considers all expenses including all overheads and interest as well as tax expenses in calculation of profit. Return on capital used determines net revenue as a percentage of the aggregate capital engaged in the firm. It indicates how satisfactorily the funds put in in the firm is performing matched with alternative investments it may perhaps be made with for instance putting it in the bank (Verma, 2017). Accounting ratios for measuring financial performance include: liquidity which evaluates the capacity to meet short-term financial debt, solvency evaluates long-term debt compared to assets as well as equity to evaluate the financial firmness and lastly, efficiency which evaluates for instance stock turnover to evaluate how well the enterprise is utilizing its assets (Gerber, 2018).

Financial performance measurement entails analysis of financial statements in such a way that it embarks on complete analysis of firm's profitability as well as financial soundness. A number of interrelated groups are affected by an organization's financial performance. The sort of evaluation depends on the concern of the party involved: Financial performance measurement is therefore important to: trade creditors who are interested in the firm's liquidity (evaluation of firm's liquidity). It is similarly important to bond holders who are concerned about the firm's cash-flow ability (evaluation of the enterprise's capital structure, the key sources as well as utilization of funds) (Marr, 2012).

To the investors financial performance is important as it enables them evaluate present as well as expected future earnings and stability of these earnings (assessment of profitability as well as financial state of a firm. To management financial performance measurement is also important as they are concerned about internal control, better financial state of affairs as well as enhanced performance (assessment of organization's present financial condition, assessment of prospects with regard to this present position, ROI given by a number of firm's assets (Verma, 2017).

1.1.3 Liquidity and Financial Performance

Salim and Mohamed, (2016) reveals that liquidity positively influences the financial performance as observed in Banks in Omani. They added that current ratio as well as debt to equity ratio as measures of liquidity positively influence the financial performance of non-banking institutions. A rise in ratio of operating cash flow (OCF) similarly certainly influences the financial performance of non-financial corporations at the NSE. Salim and Mohamed, (2016) indicate that liquidity certainly influences

the financial performance of construction and allied corporations at the NSE. They further noted that, current ratio, operating cash flow ratio have a positive impact of the financial performance; a rise in OCF ratio certainly influences the financial performance and that a rise in the debt to equity ratio as well as increase in total assets negatively affects the financial performance.

Akenga (2015) similarly noted that liquidity indeed affects financial performance as she established on companies quoted at the NSE. She noted that current ratio and cash reserves have a substantial influence on financial performance. She also indicated that debt ratio does not have substantial influence on financial performance. Agbada and Osuji (2013) similarly note that Liquidity has positive and substantial effect on banks' ratios and that liquidity similarly has positive as well as substantial influence on return on capital employed as they observed with deposit money banks in Nigeria.

Hence, for financial managers it is essential that they strike a suitable balance between the sufficient liquidity as well as a realistic return for the organization. The choice regarding the level of liquidity ought to be on the basis of the following tight spot: The more the utilized funds in current assets, the smaller the profitability (but similarly is lesser the solvency risk); conversely, a lower net working capital level similarly enhances the profitability as well raises the solvency risk of the business, by decreasing the long term finances that may be moved to assets that are less profitable (Gerber, 2018). Therefore, achieving the ideal level of liquidity ought to push the organization's decision processes that desires to indicate enhanced financial performance. Similarly, as stated by the economic theory, risk as well as profitability

are clearly related (the more risky the investment, the greater the profitability), hence as higher liquidity indicates less risk, it would as well indicate lesser profitability.

1.1.4 Agricultural firms in the Nairobi Securities Exchange

The NSE was founded back in 1954 through incorporation as a deliberate organization of stock brokers. It facilitates exchange in securities issued by publicly listed companies and government of Kenya. The NSE currently lists a total of 61 companies in the various categories as at August 2013 with agricultural sector listing seven companies. The NSE has three market segments namely: Major Investments Market Segment (MIMS); Other Investments Market Segment (OIMS); and the Fixed Income Securities Market Segment (FISMS). Listed companies under MIMS are classified into eleven categories specifically: agricultural; automobile and accessories; banking; commercial and services; construction and allied; energy and petroleum; insurance; investment; manufacturing and allied; telecommunication and technology and finally growth enterprise market segment (NSE, 2013).

The liquidity of agricultural firms is determined by the saleable current assets, i.e. the time they are traded, as well as the time that the full price be attained? For instance, silage or hay could perhaps not be relatively saleable, grain sales could possibly be dependent on delivery limitations as well as short-term as well as ultimate payments, and fall-applied fertilizer may possibly not be changed into cash. Hence, the current ratio could possibly be inadequate compared to the value indicated by the ratio. Interpretation of this ratio could be key as is the ratio's arithmetical value. The working capital ratio is an adjustment of the current ratio and merely takes into account the saleable assets with regards to the current liabilities. Saleable assets

would ignore, for instance, fall-applied fertilizer, farm purchases, as well as feed not held for resale. It measures the enterprise's capacity to meet its entire debt commitments, if every asset was to be sold. Indicates the entity's capacity to carry on in the occurrence of terrible financial hard times as a result of perils for instance famine, excessive moisture or a drop in prices of commodity (Beranová & Basovníková, 2014).

The agricultural firm's financial performance is empirically determined by a number of non-financial factors which cannot be managed from the side of an enterprise. Distinctive instance of such effect is the weather, however an agricultural enterprise's financial performance is determined by the general natural state of affairs. The financial performance of agricultural firms is substantially hinged on profitability. The net operating profit of agricultural firms comprise of the profits from subsidies. The removal of these subsidies could possibly result in unprofitability of agricultural business activities. The agricultural production subsidies are the key financial source of agricultural firms. The subsidizations are similarly stated as key source of operational risk (Waithaka, 2012).

1.2 Research Problem

Liquidity substantially influences the organizations' financial performance when an incongruity exists between assets and obligations. This could possibly make firms susceptible to financial risks. This risk emanates from the nature of undertakings. It could possibly influence the whole capital as well as return of firms. Liquidity, being a firm characteristic that affects financial performance is therefore an important subject of study. Liquidity is therefore important for firms as it enables them to meet

current claims and obligations as and when they are due. Firms therefore preserve their liquidity position by converting their assets into cash. This could lead to enhanced financial performance which is essential to a number of stakeholders of the organization (Gerber, 2018).

The agricultural sector in Kenya remains an important area. Agriculture has been for a number of years the determination of the country's economy constituting nearly thirty per cent of the Gross Domestic Product (Mahfoudh, 2013). Agricultural firms' financial performance is substantially hinged on profitability. The net operating profit of agricultural firms comprise of the returns from subsidies. The removal of these subsidies could possibly result in unprofitability of agricultural business activities. The agricultural productions subsidies are the key financial source of agricultural entities. The subsidizations are similarly stated as key source of operational risk. Researches have established a positive correlation between liquidity and financial performance. Enterprises therefore strive to control their liquidity in order to enhance their financial performance so as to continue being competitive (Venanzi, 2011).

Many researchers have in the past examined the connection between liquidity and financial performance both globally and locally. Globally, Kartal (2016) investigated the influence of liquidity on financial performance in the Turkish retail sector. The study aimed at investigating the influence of liquidity on financial performance with regards to profitability through a study of the Turkish retail sector comprising of Borsa Istanbul quoted retailing companies. Salim and Mohamed (2016) studied the influence of liquidity management on Omani Banking Sector's financial performance. The study aimed at investigating the liquidity status and its influence on the financial

performance. The study found significant relationship between liquidity position and ROA. Kibachia (2017) studied the influence of liquidity management on Rwanda's commercial banks financial performance. The research established that liquidity risk management has a substantial negative correlation with financial performance. From the study also holding more liquid assets as compared to total assets leads to lower returns.

Locally, Banafa (2016) investigated the influence of leverage, liquidity, as well as size of the firm on financial performance of non-financial corporations quoted in Kenya. The study concluded that the connection between liquidity and financial performance is conclusive. Mwaura (2015) studied the influence of liquidity on the financial performance of construction and allied firms quoted at the NSE. The research ascertained that current ratio positively influences the financial performance of construction and allied firms quoted at the NSE. Nyabate (2015) studied the influence of liquidity on the financial performance of financial corporations quoted in the NSE. The research ascertained that the association between liquidity and financial performance is insignificant and that capital structure has a significant correlation with ROA. The studies above have considered the link between liquidity and financial performance. While the researches indicate the existence of a relationship they remain unclear on its extent and nature. The studies have also not dealt with agricultural companies listed at the NSE. This provides a niche which this study seeks to fill by answering the question: What is the influence of liquidity on the financial performance of agricultural entities quoted at the NSE?

1.3 Research Objective

To establish the influence of liquidity on financial performance of agricultural firms quoted at the NSE.

1.4 Value of Study

This paper will assess the impact of liquidity on financial performance of agricultural enterprises quoted at the NSE. These findings will be significant to the management of the companies under study since they can adjust their liquidity such that it promotes their company's financial performance. Through the findings of this study, management can create and adjust their business models so as to achieve optimum financial performance.

The research will be of value to policy makers within the government as they will be provided with important information to be used for rules, regulations and policy formulation that can engage agricultural companies quoted at the NSE. Through the results of this research, more informed policies and mechanisms that promote the financial performance of the agricultural companies can be formulated.

The study findings also contribute to the pool of knowledge available on the influence of liquidity on financial performance. The findings also serve to offer strength and/or criticism to existing theories. This study is therefore useful to scholars and academicians since from it they can draw citation. The findings of this study can also be used as foundation for future research by scholars and from them can be drawn a niche for further researches.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section contains a review of literature on liquidity and financial performance. The chapter contains a theoretical review in which concepts that have been suggested to describe the connection between liquidity and financial performance are reviewed. The chapter also looks into the determinants of financial performance and empirical researches on the subject of liquidity and financial performance, both global and local. The chapter ends with a summary after which the research gap to be filled is brought out.

2.2 Theoretical Review

Numerous theories have been proposed to show the connection between liquidity and financial performance. This study will rely on the trade-off theory, liquidity preference theory and the Baumol Inventory Model.

2.2.1 Trade-Off Theory

The concept was instigated by Modigliani and Miller in 1958 on the conventions that capital markets are flawless and that neither tax, transaction costs nor agency costs and determine that financial structure is impartial with reference to the firm's worth (Adair & Adaskou, 2015). The concept proposes that companies aim to have an ideal liquidity level to counterbalance the advantage and expense of retaining cash (Mahfoudh, 2013). The expense of retaining cash takes account of low return rates of these assets as a result of liquidity premium and probably tax shortcoming. The advantages of holding cash are in double specifically, the company saves transaction costs to solicit finances and it does not require assets liquidation to make payments,

and the company can employ liquid assets to fund its undertakings as well as investment if alternative resources of backing are unavailable or are very costly.

As stated by Niresh (2012) upholding a suitable liquidity shows that resources are locked up in liquid assets hence rendering them unobtainable for use in operations or for investment objectives for greater returns. Hence, companies ought to continuously make every effort to retain a balance between differing goals of liquidity as well as profitability. The company's liquidity ought to be neither too high nor too low. This explains that as much as liquidity is desirable, a high liquidity is as detrimental as low liquidity. To ensure high profitability and consequently financial performance companies need to maintain optimum liquidity. This theory in essence suggests that agricultural companies need to maintain optimum liquidity to experience a positive connection between liquidity and financial performance past which the relationship will be negative.

The concept is pertinent to this research as the value of indebted firms including agricultural is the same as that of a non-corporate debt, added to the present value of the tax savings from debt and subtract the present value of costs regarding possible financial troubles. Therefore, since interest are deducted from taxable incomes, agricultural businesses develop an inducement to utilize debt instead of equity (Adair & Adaskou, 2015).

2.2.2 Liquidity Preference Theory

The Liquidity preference theory was established by Keynes (1936) in his research "The general concept of interest, employment as well as money". He instituted the

concept to justify the interest rate's role on the money supply as well as demand. It is therefore also referred to as the Keynesian Theory of Money. This theory explains that firms have a need to hold on to cash. The theory suggests that the three motives for keeping hold of cash are the transaction, precautionary, and speculative motive (Gerber, 2013). Firms hold on to cash for the purpose of carrying out their everyday economic transactions. The precautionary motive on the other hand is when firms keep liquid cash for the purpose of meeting unexpected crises, possibilities and mishaps. With the speculative motive firms hold on to cash to aid them in exploiting adjustments in costs of bonds and securities.

According to this theory, liquidity preference otherwise known as the money's demand as well as the supply influence the interest rate. The higher the liquidity preference, as a result of the supply of money, the higher will be the interest rate. Also, when given the liquidity preference, the higher the supply of money, the lower will be the interest rate and vice versa (Mwaura, 2015). The liquidity preference referred to in this study is mostly speculative. However, this theory has been criticized for looking at interest purely in terms of monetary forces. The theory ignores real forces such as productivity of capital and thrift. Keynes in this theory looked at interest not as a reward for saving or cost-cutting however a reward for parting with liquidity. This theory suggests the connection between liquidity and financial performance. It suggests the need for the agricultural companies to uphold a certain liquidity level to meet the three needs. The implication of this is that an organization requirement to maintain a liquidity level to remain profitable.

The theory is relevant to the study because investors in agricultural firms listed at the NSE, putting all factors constant, prefer liquid investments to illiquid. This is because they prefer cash and because of that, they have a preference of investments not to be far from cash as possible. Consequently, investors want the best for holding up cash in an investment that is illiquid. This premium gets greater because investments that are illiquid tend to take longer to mature (Tily, 2007).

2.2.3 Baumol Inventory Model

The Baumol–Tobin model is a fiscal model of the trades of demand for money as instituted autonomously by William Bamoul (1952) and James Tobin (1956). The model was advanced to establish the volume of cash a business ought to hold. It is a model centered on Economic Order Quantity whose aim is to ascertain the optimum target cash balance (Mwaura, 2015). Its aim is to ascertain the target cash balance that is optimal. In his model Baumol made a number of assumptions; The company is capable of forecasting its cash needs with confidence and obtain a certain volume at fixed intervals; The company's cash payments takes place evenly over a period of time specifically; a regular cash outflows rate; the foregone cost of retaining cash is identified and doesn't vary with time; retaining incur an opportunity cost as opportunity foregone; the company will incur a similar transaction cost each time it changes securities to cash.

The Baumol model on the other hand has its shortcomings, namely; assumes an unvarying rate of disbursement; in reality however, cash outflows take place at separate periods, separate due dates, it assumes no cash receipts throughout the projected time, but evidently cash is moving in and out on a regular basis; no safety

stock is taken into account, because it just takes a short time period to trade marketable securities (Vrindavan, 2014). This theory implies that a firm needs a target cash balance to be upheld. This possibly will however have a negative influence on the entity's profitability due to the retaining of idle cash.

The Baumol model is relevant to this study as it helps companies to identify their required cash level balance under conditions of certainty. Currently a number of firms listed at the NSE seek to minimize the costs incurred by holding cash. They similarly seek out to spend less money on conversion of marketable securities to cash, hence the application of Baumol model of cash management in this study (Schonfelder, 2012).

2.3 Determinants of Financial Performance of Agricultural firms

Agricultural businesses' financial performance is determined by a number of aspects, among them include liquidity, leverage, firm size and inflation rate.

2.3.1 Liquidity

Firm's liquidity is its capability to settle current debts (Mahfoudh, 2013). Ratio analysis is used to determine the liquidity position of a company. These ratios are current ratio, quick ratio and OCF ratio. Current ratio is evaluated by dividing total current assets by the total short-term debts. The quick ratio on the other hand is computed by subtracting inventories from current assets and then dividing the remainder by the short term debts. OCF is evaluated by dividing OCF by short-term debts. The OCF ratio measures the liquidity of a firm. If the OCF does not exceed 1, the firm has made a smaller amount cash during the period than it requires to settle its

current debt obligations. This could be an indicator for more capital requirement. Liquidity according to Mwaura (2015) is considered as an indication of the financial strength of a firm.

2.3.2 Leverage

Firm's leverage is ratio of its total liability to total assets (Omondi & Muturi, 2013). It is an indication of the level to which the total assets are funded by loans. It is important since it affects shareholder returns and risks and the market value of a firm. A growth in leverage indicates the dependence of a firm on external debt financing and bigger score being provided to the company by debt providers. This though, could curtail the autonomy of company due to the restrictive conditions enacted by debt providers and could in the worst case scenario result into financial solvency. According to studies, leverage influences financial performance. However, contradictory findings have been put forward on the relationship with Zeitun and Tian (2007) establishing a negative connection between level of leverage and financial performance and Berger and Patti (2006) established a positive one.

2.3.3 Firm Size

According to studies a firm's size can be utilized to foresee stock price (Omondi & Muturi, 2013). A positive connection exists between firm size and performance. Bigger companies are more profitable than smaller ones since they can harness economies of scale. Another interpretation is that large companies have access capital at lesser costs than small ones. However, when firms become extremely large the benefit could diminish making the relationship negative. This could result from factors such as the resulting bureaucracy.

2.3.4 Inflation Rates

Inflation refers to the level at which the general goods as well as services price level is escalating and therefore, buying influence is decreasing (Mwaura, 2015). High inflation rates can have undesirable effects on a company's financial performance. An increasing theoretical literature illustrates ways whereby even anticipated rise in inflation rates impede the financial sector's ability to effectively distribute wealth (Mahfoudh, 2013). More precisely, current concepts focus on the significance of informational unevenness in credit markets and show how escalations in the inflation rates undesirably influences frictions in the credit market with negative effects on financial markets (both banks as well as equity market) performance and hence long-run actual activity. As a result of inflation commodities prices rise and hence decrease of the revenue margins, thereby depressing the firm's financial performance.

2.4 Empirical Studies

This section discusses literature with regard to liquidity and financial performance. The literature will cover both global and local studies. The global studies include: Kibachia (2017) did a study in Rwanda to ascertain the influence of liquidity management on financial performance of Rwandan commercial banks. The research attempted to explore the impact of cash management, loan repayment, investment in non-core business, liquidity decisions, and competency of management on financial performance. The study used ROE as the measure for financial performance. Descriptive research was adopted and the population of the study entailed 14 Rwandan commercial banks in which a sample of 42 respondents was taken. Data was gathered using structured questionnaires and an analysis of financial reports. Data analysis was conducted by way of descriptive and inferential statistics, and multiple

regression analysis employed to determine the connection between liquidity management and financial performance. The research established a substantial positive connection between liquidity management as well as financial management. The research therefore concluded that there is need for the commercial banks to take a keen interest in liquidity risk management in order to increase their returns.

A study conducted in Turkey by Kartal (2016) sought after ascertaining the influence of liquidity on financial performance in the Turkish retail sector. The study aimed at investigating the impact of liquidity on financial performance with regards to profitability through a study of the Turkish retail industry comprising of Borsa Istanbul quoted retailing companies for an 18 year period which is in between 1998 and 2015. The study had liquidity and growth as independent variables and profitability as the dependent variable. The research used advanced econometric instruments specifically, the unit root test, co-integration test, dynamic OLS method and bootstrap causality test. The study determined that a substantial positive correlation exists between financial performance and liquidity. The study however found that the findings were applicable to the retail industry among other service industries but could not accurately predict the relationship in other sub-sectors. The study also noted the neglect of operational dimension of liquidity that is, cash conversion cycle and/or operating cycle.

Salim and Mohamed (2016) also carried out a research in Oman to evaluate the influence of liquidity management on financial performance in Banking Sector in Oman. The study aimed at investigating the liquidity state and its influence on the financial performance. The study used a sample of 4 local commercial banks for a 5

year period which is from 2010-2014. The research adopted a multiple regression analysis to obtain data from the annual reports. The research found a substantial correlation between bank loans to total assets ratio, illiquid assets to liquid liabilities ratio as well as bank's ROA; liquid assets/deposits; liquid assets/ current debts and ROE; and bank's loans /total assets, loans/deposits and current debt obligations. The study however found no significant connection between liquidity position and New Interest Margin (NIM).

Local studies include the following: Vieira (2010) conducted a study in Kenya to analyze the association between liquidity and profitability. The study used descriptive research design, a sample of 41 corporations at the NSE between 2004 and 2006 was utilized. Regression analysis of (ROA) as a determinant of profitability and Current Ratio (CR) as a measure of liquidity was conducted. One way ANOVA was similarly employed to test whether a low liquidity level will unsettle the upkeep- of high profitability. The research aimed to attest the connection between liquidity and profitability over the short and medium term. The results established that throughout the researched period a substantial as well as positive connection existed between the variables of liquidity and profitability in the short-term. The findings similarly ascertained that on the short term the higher the firm's liquidity level, the greater its profitability. The study further determined that a positive link exists between indicators of liquidity and indicators of profitability on the medium to long term. The conclusions according to the study are however only limited to the group of firms studied and the period in which the study was done.

Banafa (2016) similarly conducted a study in Kenya to investigate the influence of leverage, liquidity, as well as firm size on financial performance of quoted non-financial Kenyan corporations. The research aimed to measure the influence of Leverage, Liquidity and Firm Size of non-financial firms quoted at Nairobi Stock Exchange during the period 2009-2013. Panel data over the five year period was used and regression coefficients interpreted using E-views software output. The study used causal research design and targeted all 42 non-financial firms listed at Nairobi Stock Exchange on which random sampling was done. The study findings established that the connection between liquidity and financial performance is positive. It was concluded that, effective management of liquidity enables financial managers to invest in available financial opportunities and hence increase their firm's asset base enabling them to acquire more loans when need arises.

Another study was conducted in Kenya by Mwaura (2015) who sought to explore the impact of liquidity on the financial performance of construction and allied firms quoted at the NSE. The coverage of the research was for the period between 2005 and 2014. The research employed a descriptive research design. The research similarly obtained secondary data from the NSE. Multiple regression analysis was used to analyze data. The research determined that current ratio positively influences the financial performance of construction and allied firms quoted at the NSE. The findings of the research similarly determined that a rise in operating cash flow ratio as well as total sales also positively affect financial performance. It was concluded that rise in debt to equity and that of total assets however negatively influence financial performance of construction and allied corporations at the NSE.

Nyabate (2015) similarly did a research in Kenya to examine the influence of liquidity on the financial performance of financial corporations quoted in the NSE. The research adopted a descriptive research and gathered secondary data from income statements, balance sheets as well as notes of nineteen financial corporations at the NSE. The research covered the period between 2010 and 2014. A regression model was used to determine that connection between the variables with capital structure as the control variable. Analysis was done using Pearson's correlation as well as regression analysis. The findings of the research determined that the association between liquidity and financial performance is weak or insignificant and that capital structure has a substantial connection with ROA. The study further established a negative link between cash position indicator and ROA for the financial institutions listed at the NSE. The study however recommended the incorporation of more variables in further research on the link between liquidity and financial performance.

Akhwale (2014) similarly conducted a study in Kenya to investigate the association between liquidity and profitability for firms quoted at the NSE. The research was carried out by way of a diagnostic research design. The secondary data was taken from the yearly financial reports of the sampled Kenyan quoted companies over a period of 5 years which is 2009-2013. The study determined that cash conversion period as well as the current ratio as liquidity indicators negatively influenced the profitability of the companies quoted in the NSE in the 5 year period whereas the quick ratio as a liquidity determinant did not considerably influence the profitability of the companies quoted in the NSE in that period. The study determined that a substantial connection exists between liquidity and profitability of the Kenyan quoted firms. The research proposed that the management of the firms quoted in the NSE

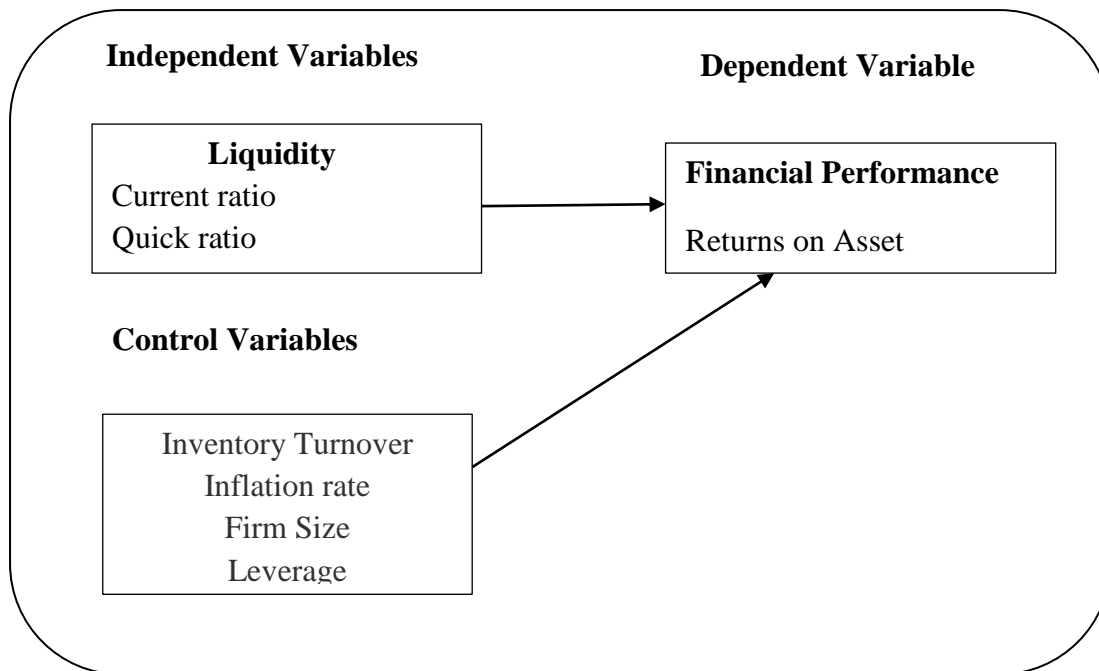
ought to institute effective cash administration practices that would assist lower the period of cash conversion. Further, the research proposed that the administrators of the enterprises quoted in the NSE ought to make every effort to realize and retain an optimal liquidity position that holds sufficient cash/liquid resources.

2.5 Summary of Literature Review

This chapter has looked into theories that suggest a link between liquidity and financial performance. The chapter has also looked into other factors, apart from liquidity, that determine financial performance. Empirical studies have also been reviewed. From the studies a connection exists between liquidity and financial performance. However, while the studies indicate the existence of a relationship they remain unclear on its extent and nature. The studies have also not dealt with agricultural companies listed at the NSE. The studies reviewed show the impact of liquidity on financial performance of financial, non-financial and even construction and allied companies. This leaves a research gap which this study seeks to fill.

2.6 Conceptual Framework

Figure 2.1: Conceptual Framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section encompasses the research design plus the methodology that will be employed by the researcher to collect, analyzes, present and deliberate the results of the research, data collection instruments to be used data collection procedures and finally the analytical model adopted for this research.

3.2 Research Design

A research design outlines how investigation of the research will occur which comprises how data will be obtained, what instruments will be used and how they will be used. This study will adopt an exploratory research design combining both descriptive and causal types of analysis. It will be a longitudinal research with the scope being a case study of all the seven listed agricultural firms at the NSE. The study environment will be a field setting and the unit of analysis will be country wide. It will be justified to use a census method because it will increase confidence level as it will result in enough respondents to have a greater level of statistical confidence in the survey results as every firm will be surveyed to attain statistical confidence. It will similarly give an opportunity to the researcher to have a rigorous study concerning the problem. The researcher will similarly gather plenty of knowledge through this method. As the universe comprises of seven firms, there will be high level of accuracy due to the small number (Lavrakas, 2008).

3.3 Population of the Study

The target population is one the researcher wants to take a broad view of the study result. The study population will include all the 7 agricultural enterprises at the NSE.

The target period for the research will be from the year 2013 to 2017. The researchers will therefore, do a census study due to the small number of respondents in the target population whose responses are important in this study (Mugenda & Mugenda, 1999).

3.4 Data Collection

The research will utilize secondary data, this is because all agricultural firms quoted at the NSE are obligated to announce their audited financial statements as well as other Disclosures in a newspaper of countrywide circulation and also put them out on their websites. Of main examination will be the statement of financial position (from which current assets, current liabilities, total debt, total equity, prepayment and average inventory as well as the statement of income (from which amounts of profit after tax for the period 2013-2017 will be collected in order to evaluate the Return on Assets). The study will adopt quantitative approach because of the nature of variables applied in the analysis. The researcher will gather data on total assets, cash reserves, current assets, current liabilities as well as total liabilities. The data will be obtained by way of the handbook of NSE.

3.5 Data Analysis

As stated by Mugenda (2003), data ought to be refined, coded as well as appropriately analyzed so as to get a significant information. The obtained data will be arranged as well as categorized prior to taking it to Statistical Packages for Social Sciences (SPSS) for analysis.

3.5.1 Analytical Model

The multiple regression models to determine the connection between liquidity and financial performance on agricultural enterprises quoted at the NSE. The model of this research is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon$$

Where: Y = Dependent variable (financial performance determined by Return on Assets)

X₁, X₂, X₃, and X₄ = Independent variables

X₁ = Current ratio measured by Current assets/Current liabilities

X₂ = Quick ratio measured by {(Current assets- inventory-prepayment)/Current liabilities}

X₃ = Inventory turnover ratio determined by cost of goods sold/Average inventory

X₄ = Size measured by log of total assets

X₅ = Leverage measured by debt to equity ratio

X₆ = Inflation rate measured by annual rate of inflation

α = Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Regression coefficients or change indicated in Y by each X value

ϵ = error term

The dependent variable is financial performance of the agricultural companies listed in NSE whereas the independent variables are the liquidity practices.

3.5.2 Tests of Significance

The study will perform significance testing using Analysis of variance (ANOVA). ANOVA measures differences between variables. Correlation coefficient (R) will evaluate the strength as well as direction of linear correlation between variables. Coefficient of determination (R^2) will give the proportion by which liquidity (x) predicts financial performance (y). (R^2) is such that $0 < r^2 < 1$, and denotes the strength of the linear connection between X and Y. The higher the (R^2), the greater percentage of points the line passes through after plotting the data points as well as line. If the coefficient is 0.80, then 80% of the points ought to fall within the regression line. Values of 1 or 0 would show the regression line signifies all or not any of the data, respectively. A greater coefficient implies the observations better goodness of fit. The study will use T statistic since the population is at 95% confidence level. A t-test's statistical significance will indicate whether or not the difference between two variables' means most probably replicates a "real" difference in the population from which the sets were selected.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.0 Introduction

In this chapter, a presentation, interpretation and discussion of the findings are done. The chapter will be divided into three sections. It will include; correlation analysis statistics, regression analysis, and the interpretation and discussion of findings. In summary, the chapter showcases data analysis, presentation, and interpretations of the study.

The study analyzed analyze the impact of liquidity on the firm performance in isolation, and then introduce the control variables, inventory turnover, firm size, leverage, and inflation. The study was conducted for a period of ten years, from January 2008 to December 2017. Data on return on assets, current ratio, quick ratio, inventory turnover, firm size, and leverage was obtained from the individual agricultural firms audited financial statements and notes found on their annual reports. The annual reports are contained in their websites and in case of unavailability, efforts were tried to locate them on the NSE or Capital Market Authority's websites. Data on inflation can be obtained from the Consumer Price Index (CPI) information available from the Kenya National Bureau of Statistics (KNBS) publications.

4.1 Descriptive Statistics

A descriptive study tries to explain or describe a subject frequently by establishing an outline of a collection of problems, individuals, or events, by collecting data and the tabulation of the frequencies of research variables or their relationship. It provides a range of research objectives such as; explanation of an event or characteristics linked

with a subject population, approximation of extent of the population that possesses these features, and unearthing of linkages among varying variables (Ngechu, 2004). In this study, descriptive research design was selected since it will enable the generalization of the findings of the population; it will allow analysis and relation of variables.

Table 4.1: Descriptive Statistics

	Financial Performance	Current Ratio	Quick Ratio	Inventory Turnover Ratio	Firm Size(KES '000')	Leverage	Inflation
N STATISTIC	67	67	67	67	67	67.0000	67.0000
MINIMUM STATISTIC	-0.1185	1.0745	0.5204	0.0000	57,775	0.0000	0.0396
MAXIMUM STATISTIC	0.6590	18.7609	17.5776	2099.1667	16,818,463	0.1282	0.2624
MEDIAN STATISTIC	0.1000	3.9021	2.7813	5.0291	2,797,430	0.0000	0.0688
MEAN STATISTIC	0.1181	5.1982	4.2088	75.8869	4,055,830	0.0101	0.0947
STANDARD DEVIATION	0.1350	4.2147	4.0544	324.8391	4,032,294	0.0240	0.0591
SKEWNESS	1.3941	1.6522	1.7910	5.1562	1	3.1483	2.0461
KURTOSIS	3.3625	2.3834	2.8707	27.4054	2	10.7366	3.4694

From the findings in Table 4.1 above, the highest value for financial performance is 65.9% while the lowest value is -11.85%. The following measures of central tendency were exhibited; a mean of 11.81%, and a median of 10%. Also, the value of the standard deviation depicts variability in the stock returns of $\pm 13.5\%$. The data in the series seems not to have a normal distribution because it does not have skewness ranging from -0.8 to +0.8, and a kurtosis within the range -3 to +3.

From the findings, the highest value for the current ratio variable is 18.76 while the lowest value is 1.08. The following measures of central tendency were exhibited; a mean of 5.2 and a median of 3.9. The data in the series does not exhibit normal distribution because its skewness lies slightly out of the range of -0.8 to +0.8, but the

kurtosis lies within the range -3 to +3. In addition, the value of the standard deviation depicts variability in the variable of ± 4.22 .

Further results from the findings indicate that the highest value of the quick ratio is 17.58 while the lowest value is 0.52. The following measures of central tendency were exhibited; a mean of 4.21, and a median of 2.78. In addition, the value of the standard deviation depicts variability in the variable of ± 4.05 . The data in the series does not exhibit a normal distribution because it has skewness that is out of the range of -0.8 to +0.8, but the kurtosis is within the range of -3 to +3.

The highest value for the inventory turnover ratio is 2099.17 while the lowest value is 0. The following measures of central tendency were exhibited; a mean of 75.89, and a median of 5.03. Also, the value of the standard deviation depicts variability in the variable of ± 324.84 . The data in the series seems not to have a normal distribution because it does not have skewness ranging from -0.8 to +0.8, and a kurtosis within the range -3 to +3.

The highest value for the firm size variable is KES 16.818 billion while the lowest value is KES 57.775 million. The following measures of central tendency were exhibited; a mean of 4.056 billion and a median of 2.797 billion. The data in the series does not exhibit normal distribution because its skewness lies slightly out of the range of -0.8 to +0.8, but the kurtosis lies within the range -3 to +3. In addition, the value of the standard deviation depicts variability in the variable of ± 4.032 billion.

The findings indicate that the highest value of the leverage variable is 12.82% while the lowest value is 0%. The following measures of central tendency were exhibited; a mean of 1.01%, and a median of 0%. In addition, the value of the standard deviation depicts variability in the variable of $\pm 2.4\%$. The data in the series does not exhibit a normal distribution because it has skewness that is out of the range of -0.8 to +0.8, but the kurtosis is within the range of -3 to +3.

The final results from the findings point out that the Consumer Price Index (CPI) variable is 26.24%, while the lowest value is 3.96%. The following measures of central tendency were exhibited; a mean of 9.47%, and a median of 6.88%. Also, the value of the standard deviation depicts variability in the variable of $\pm 5.91\%$. The data in the series does not have a normal distribution because it has skewness that lies out of the range of -0.8 to +0.8, and a kurtosis out of the range of -3 to +3.

4.2 Correlation Analysis

Correlation analysis is used to establish if there exists a relationship between two variables which lies between (-) strong negative correlation and (+) perfect positive correlation. Pearson correlation was employed to analyze the level of association between firm performance and liquidity, as well as the association between firm performance and the control variables. The study employed a Confidence Interval of 95%, as it is the most utilized in social sciences. A two tailed test was utilized.

Table 4.2: Correlation Analysis

		Financial_ Perf	LogCurrent _Ratio	LogQuick _Ratio	LogInvTurnOver_ Ratio	LogFirm_ Size	Leverage	LogInflation
Financial_Perf	Pearson Correlation	1	.256*	.279*	-.264*	-.254*	-.036	-.032
	Sig. (2-tailed)		.044	.028	.038	.046	.782	.805

	N	62	62	62	62	62	62	62
	Pearson Correlation	.256*	1	.906**	.158	-.235	-.251*	-.182
LogCurrent_Ratio	Sig. (2-tailed)	.044		.000	.221	.067	.049	.157
	N	62	62	62	62	62	62	62
	Pearson Correlation	.279*	.906**	1	.303*	-.203	-.269*	-.135
LogQuick_Ratio	Sig. (2-tailed)	.028	.000		.017	.113	.035	.294
	N	62	62	62	62	62	62	62
	Pearson Correlation	-.264*	.158	.303*	1	-.149	-.114	-.042
LogInvTurnOver_Ratio	Sig. (2-tailed)	.038	.221	.017		.247	.379	.743
	N	62	62	62	62	62	62	62
	Pearson Correlation	-.254*	-.235	-.203	-.149	1	.216	-.155
LogFirm_Size	Sig. (2-tailed)	.046	.067	.113	.247		.092	.230
	N	62	62	62	62	62	62	62
	Pearson Correlation	-.036	-.251*	-.269*	-.114	.216	1	.306*
Leverage	Sig. (2-tailed)	.782	.049	.035	.379	.092		.016
	N	62	62	62	62	62	62	62
	Pearson Correlation	-.032	-.182	-.135	-.042	-.155	.306*	1
LogInflation	Sig. (2-tailed)	.805	.157	.294	.743	.230	.016	
	N	62	62	62	62	62	62	62

*. Correlation is significant at the 0.05 level (2-tailed).

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

The study findings in Table 4.2 above indicate that financial performance is significantly correlated at the 5% significance level to the two indicators of liquidity; current ratio and quick ratio. The findings imply that there is a positive relationship between both pairs of the variables. The findings further reveal that financial performance is also significantly correlated at the 5% significance level to turnover ratio and firm size. The findings exhibit a negative positive relationship between both pairs of the variables.

The significant correlation at the 5% significant level between the predictor variables; current ratio and leverage, quick ratio and inventory turnover, quick ratio and leverage, and leverage and inflation, indicates multi-collinearity. Multicollinearity is a statistical phenomenon in which there exists a perfect or exact relationship between

the predictor variables. When there is a perfect or exact relationship between the predictor variables, it is difficult to come up with reliable estimates of their individual coefficients. Thus, it will result in incorrect conclusions about the relationship between outcome variable and predictor variables.

4.3 Regression Analysis

The financial performance variable was first regressed against the liquidity indicator variables, current and quick ratios, using simple linear regression since they are the main variables of interest in the study. Then the control variables were introduced and the financial performance variable was regressed against six predictor variables; current ratio, quick ratio, inventory turnover, firm size, leverage, and inflation using multiple linear regression. The logarithmic function was introduced to the current ratio, quick ratio, inventory turnover, firm size, and inflation series in order to linearize them and also to make them have a normal distribution. The regression analysis was undertaken at 5% significance level. The critical value obtained from the F test and T test were compared with the values obtained in the analysis.

4.3.1 Main Predictor Variables

Regression analysis was first done for the response variable firm performance being regressed against the indicators of liquidity, current ratio and quick ratio. The findings are exhibited in the subsequent page.

Table 4.3: Main Predictor Variables Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.279 ^a	.078	.046	.13504	1.060

a. Predictors: (Constant), LogQuick_Ratio, LogCurrent_Ratio

b. Dependent Variable: Financial_Perf

R squared, being the coefficient of determination indicates the deviations in the response variable that is as a result of changes in the predictor variables. From the outcome in Table 4.3 in the previous page, the value of R square was 0.078, a discovery that 7.8% of the deviations in financial performance is explained by the variables that are indicators of liquidity. Other variables not included in the model justify for 92.2% of the variations in the performance of the seven agricultural firms listed in the NSE.

To test for autocorrelation, Durbin-Watson statistic was applied which gave an output of 1.060 as displayed in Table 4.3 in the preceding page. The Durbin-Watson statistic is always between 0 and 4. A value of 2 means that there is no autocorrelation in the sample. Values from 0 to less than 2 indicate positive autocorrelation and values from more than 2 to 4 indicate negative autocorrelation. A rule of thumb is that test statistic values in the range of 1.5 to 2.5 are relatively normal. Values outside of this range could be cause for concern. Field (2009) however, suggests that values under 1 or more than 3 are a definite cause for concern. Therefore, the data used in this panel is not serially autocorrelated since it meets this threshold.

Table 4.4: Main Predictor Variable Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.091	2	.045	2.486	.092 ^b
Residual	1.076	59	.018		
Total	1.167	61			

a. Dependent Variable: Financial_Perf

b. Predictors: (Constant), LogQuick_Ratio, LogCurrent_Ratio

A rule of thumb indicates that a model is significant if the p value obtained from the study findings in Table 4.4 in the previous page is less than the critical value of 0.05 or the F value obtained is greater than the critical value of 2.76. The study indicates a p value of 0.092, which is more than the critical value. The study also gives an F value of 2.486, which is less than the critical value. This implies that the model is not statistically significant in predicting how liquidity affects the performance of the seven agricultural firms listed in the NSE.

Table 4.5: Main Predictor Variable Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.077	.042		1.815	.075	-.008	.162
LogCurrent_Ratio	.009	.130	.020	.069	.945	-.251	.269
LogQuick_Ratio	.097	.110	.260	.880	.382	-.123	.316

a. Dependent Variable: Financial_Perf

From the results contained in Table 4.5 above, it is evident that the predictor variables that indicate liquidity; current ratio and quick ratio do not have a statistically significant relationship at the 5% level of significance with stock returns. They have a p-value which is greater than the critical value of 0.05. The Coefficients are used as an indicator of the magnitude and direction of the relationship between the independent variables and the response variable. The p-value is used to establish the significance of the relationship of the independent variable to the dependent variable. A confidence interval of 95% was utilised and hence, a p-value of less than 0.05 was interpreted as a measure of statistical significance. As such, a p-value above 0.05

indicates a statistically insignificant relationship between the dependent and the independent variables.

4.3.2 Inclusion of the Control Variables

Regression analysis was then done for the response variable firm performance being regressed against the main variables together with the control variables which were introduced into the model. The findings are indicated below.

Table 4.6: Inclusion of Control Variables Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.549 ^a	.301	.225	.12177	1.453

a. Predictors: (Constant), LogInflation, LogInvTurnOver_Ratio, LogFirm_Size, LogCurrent_Ratio, Leverage, LogQuick_Ra

b. Dependent Variable: Financial_Perf

From the findings in Table 4.6 above, the value of R square was 0.301, a discovery that 30.1% of the deviations in financial performance is explained by the variables that are indicators of liquidity and the control variables. Other variables not included in the model justify 69.9% of the variations in the performance of the seven agricultural firms listed in the NSE. The Durbin-Watson statistic gives an output of 1.453 Thus, the data used in this panel is not serially autocorrelated since it meets this threshold of not being under the value of 1 or above the value of 3.

Table 4.7: Inclusion of Control Variables Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.351	6	.059	3.947	.002 ^b
	Residual	.816	55	.015		
	Total	1.167	61			

a. Dependent Variable: Financial_Perf

b. Predictors: (Constant), LogInflation, LogInvTurnOver_Ratio, LogFirm_Size, LogCurrent_Ratio, Leverage, LogQuick_Ratio

The study findings in Table 4.7 in the preceding page indicate a p-value of 0.02, which is less than the critical value. The study also gives an F value of 3.947, which is greater than the critical value. This implies that the model is statistically significant in predicting how liquidity and the control variables that include; inventory turnover, firm size, leverage, and inflation affect the performance of the seven listed agricultural firms in the NSE.

From the results as displayed in Table 4.8 in the subsequent page, it is evident that one variable indicating liquidity, quick ratio, has a statistically significant positive relationship at the 5% level of significance with firm performance. It has a p-value of 0.016 which is less than the critical value of 0.05. Also, two control variables that include; inventory turnover, and firm size, have a statistically significant negative relationship at the 5% level of significance with firm performance. They have a p-value of 0.01 and 0.16 respectively, the p-values are less than the critical value of 0.05. The regression equation below was thus estimated:

$$Y = -0.582 + 0.271X_1 - 0.197X_2 - 0.074X_3$$

Where;

Y = Firm Performance

X₁ = Quick Ratio

X₂ = Inventory Turnover Ratio

X₃ = Firm Size

Table 4.8: Inclusion of Control Variables Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.582	.199		2.931	.005	.184	.980
LogCurrent_Ratio	-.175	.126	-.398	-1.385	.172	-.428	.078
LogQuick_Ratio	.271	.109	.731	2.492	.016	.053	.490
LogInvTurnOver_Ratio	-.107	.029	-.461	-3.684	.001	-.165	-.049
LogFirm_Size	-.074	.030	-.307	-2.482	.016	-.133	-.014
Leverage	.586	.693	.107	.846	.401	-.802	1.975
LogInflation	-.068	.081	-.105	-.841	.404	-.230	.094

a. Dependent Variable: Financial_Perf.

4.4 Interpretation and Discussion of Findings

The study specifically sought to establish how liquidity impacts firm performance, however control variables, were introduced in order to determine how they affect the relationship between the response variable and the main predictor variables. The main predictor variables that indicated liquidity were ratio and quick ratio. The control variables were inventory turnover, firm size, leverage, and inflation. The effect of each of the independent variable on the dependent variable was analyzed in terms of strength and direction.

The descriptive statistics in Tables 4.1 reveal that the response and all the predictor variables do have a normal distribution. This is indicated by their medians being far away from their means, and also by the skewness and kurtosis statistics. This necessitated the introduction of a logarithmic function in the current ratio, quick ratio, inventory turnover, firm size, leverage, and inflation statistics when conducting regression analysis.

In the test for correlation in Table 4.2, it indicates that there is a significant correlation at the 5% significance level of firm performance to the two indicators of liquidity; current ratio and quick ratio. The findings imply that there is a positive relationship between both pairs of the variables. The findings further reveal that financial performance is also significantly correlated at the 5% significance level to turnover ratio and firm size. The findings exhibit a negative positive relationship between both pairs of the variables. This implies that the two main response variables indicating liquidity, and the two control variables have an impact on financial performance among agricultural firms listed at the NSE. The significant correlation found among the independent variables suggested existence of multi-collinearity.

The relationships between the response variable and the various predictor variables exhibited in the correlation, were interrogated further using regression analysis. This is because correlation analysis only establishes a relationship, it does not explain a cause and effect of the relationship which regression analysis does. In the regression analysis, the analysis of variance where only the main predictor variables were included in the model whose results are contained in Table 4.4 shows that the model developed is insignificant as evidenced by the F and P values obtained when compared to the critical values. On the other hand, the analysis of variance which was conducted after inclusion of the control variables, as indicated in Table 4.7, shows that the model developed is significant. This implies that the control variables inventory turnover and firm size influence the relationship between liquidity and firm performance. The aforementioned control variables are moderating variables since they are able to alter the effect that the independent variables have on the dependent variable.

The model coefficients in Table 4.8 developed when the control variables are introduced, exhibits that the variable indicating liquidity, quick ratio, has a positive significant relationship at the 5% significance level to performance of agricultural firms listed at the NSE. The two control variables, inventory turnover and firm size, exhibit a negative significant relationship at the 5% significance level to performance of agricultural firms listed at the NSE. The model developed implies that; the constant 0.582 shows that if the predictor variable had a zero value, the dependent variable would equal to the value exhibited by the constant. The quick ratio coefficient shows that a unit increase in the predictor variable would lead to an increase in the response variable by 0.271. The inventory turnover ratio coefficient shows that a unit increase in the predictor variable would lead to a decrease in the response variable by 0.107. The firm size coefficient displays that a unit increase in the predictor variable would lead to a decrease in the response variable by 0.074. However, when the control variables are not introduced in the model, it is not significant as exhibited in Table 4.4, and so it cannot predict changes in firm performance. Additionally, the model coefficients are not significant as showcased in Table 4.5. This implies that the control variables do influence the relationship between firm performance and liquidity.

The study findings also resonate with those of the study conducted by Kartal (2016) in Turkey to ascertaining the influence of liquidity on financial performance in the Turkish retail sector and the study determined that a substantial positive correlation exists between financial performance and liquidity. The current study findings are also in agreement with a study conducted by Vieira (2010) in Kenya to analyze the association between liquidity and profitability. The study used descriptive research

design, a sample of 41 corporations at the NSE between 2004 and 2006 was utilized. The results established that throughout the researched period a substantial as well as positive connection existed between the variables of liquidity and profitability in the short-term. The findings similarly ascertained that on the short term the higher the firm's liquidity level, the greater its profitability. The study further determined that a positive link exists between indicators of liquidity and indicators of profitability on the medium to long term. The findings in the study are similar to the results obtained in the current study.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the summary of the findings and offers conclusions and recommendations of the study on the effect of liquidity on the firm performance. It further goes on to state the limitations of the study and provide suggestions for further research.

5.1 Summary

This study aimed at determining the effect of liquidity on performance of agricultural firms listed in the NSE. The unit period of analysis was annually, and data was collected for the period from January 2008 to December 2017. Secondary data was collected on; profit after tax, total assets, current assets and liabilities, inventory, prepayments, cost of sales, firm size, long-term debt, and total shareholders' funds from the financial statements of the seven agricultural firms. Data on the consumer price index was also collected for the ten years. The study employed the use correlation analysis and regression analysis to determine the effect of liquidity on firm performance.

The study established in the correlation analysis that the effect of liquidity on firm performance exhibits a positive significant relationship between the two variables. The study found out that the indicators of liquidity, mainly current and quick ratios, do not impact firm performance. The introduction of the control variables, mainly inventory turnover and firm size, enable one indicator of liquidity, quick ratio, to have a significant positive relationship with the response variable. They are moderating

variables because they affect the strength of the relationship between the predictor variables and the response variables. The model applied in the study showed that a unit increase in the quick ratio variable would result in an increase in the performance of the agricultural firms listed in the NSE by a factor of 0.271.

The current study is therefore in agreement with the one conducted by Banafa (2016) which sought to investigate the influence of leverage, liquidity, as well as firm size on financial performance of quoted non-financial Kenyan corporations. Panel data was utilized over a five year period from 2009 to 2013 and it established that a positive relationship between liquidity and financial performance. The current study findings are also collaborated by the studies by Kartal (2016) in Turkey to ascertaining the influence of liquidity on financial performance in the Turkish retail sector and by Vieira (2010) in who analyzed the association between liquidity and profitability by examining 41 corporations listed at the NSE between the years 2004 and 2006.

5.2 Conclusion

From the above findings, it can be concluded that certainly, liquidity and firm performance have a significant relationship. However, for this relationship to exist there must be other specific factors present, which are denoted by the control variables. Thus, the control variables enable the quick ratio to have a significant positive relationship with firm performance with stock market returns with a higher quick ratio leading to a higher return on asset value.

This study therefore concludes that main independent variable selected for this study, liquidity, to a moderate extent influences performance of agricultural firms listed in

the NSE but only in the presence of certain control variables. This is as evidenced by p value and F value in the analysis of variance table when the control variables are introduced. However, the fact that the variables in the model variable explain 30.1% of changes in firm performance implies that the variables not included in the model explain 69.9% of changes in the firm performance. Thus, liquidity and the control variables influence the response variable, but only to a moderate extent.

5.3 Recommendations

Agriculture is the backbone of the Kenyan as well as other developing countries economies. It contributes the biggest chunk of the GDP and a majority of Kenyans are directly or indirectly employed in the agricultural sector (OTIENO, 2015). Policy recommendations are that since liquidity has been established to have a significant positive influence on performance of firms quoted at the NSE, the government through its various arms can formulate rules, regulations and policy that revitalize financial performance of agricultural firms. The firms can re-invest the excess profits by expanding their scope and in the process employing more individuals. They can also give back to the society by conducting Corporate Social Responsibility (CSR) activities.

Recommendations can also be made to the management of the agricultural firms, they can adjust their liquidity so that it promotes their company's financial performance. Through the findings of this study, management can create and adjust their business models so as to achieve optimum financial performance.

5.4 Limitations of the Study

Due to time and cost limitations, the scope of the study has been limited to ten years, between 2008 to 2017. Thus, it has not been determined if the result findings would hold for a longer time period. Furthermore, it is uncertain whether similar findings would result beyond 2017. Since the study employed secondary sources of data, some of this data was not readily available, and it took great lengths to obtain it. Most of the data obtained could also not be used in its raw form, for instance return on assets and inventory turnover, the ratios had to be calculated. Thus, delays were imminent as data was to be edited and processed further before the researcher could be able to compile it.

5.5 Recommendations for Further Study

The study findings contribute to the pool of knowledge available on the influence of liquidity on financial performance. The findings also serve to offer strength and/or criticism to existing theories. This study is therefore useful to scholars and academicians since from it they can draw citation. The findings of this study can also be used as foundation for future research by scholars and from them can be drawn a niche for further researches.

On the basis of information gathered and the knowledge gained in this study, the researcher has suggested some areas for further research. First, there are many variables impacting financial performance, apart from liquidity. Further research can be done to identify these factors. The current study's scope was limited to ten years, further research can be done beyond ten years to ascertain if the findings would hold. Thus, future studies may use a range of many years, for instance, from 1980 to date

and this can be helpful to confirm or disapprove the findings of this study. The scope of the study was also limited to the Kenyan context where agricultural firms quoted at the NSE were examined. Researchers in other East African, African, and other global countries can conduct the study on impact of liquidity on financial performance of agricultural firms in these jurisdictions to ascertain whether the current study findings would hold.

Secondary data was solely utilized in the study, alternative research can be employed using primary sources of data like in-depth questionnaires and structured interviews to be administered key personnel in the listed agricultural firms. These can then approve or disapprove the current study findings. Linear regression and correlation analysis were used in this research, further studies can incorporate other analysis methods like factor analysis, cluster analysis, and discriminant analysis.

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APPENDICES

Appendix I: Agricultural Companies Listed at the Nairobi Securities

Exchange

- 1 Eaagads Limited
- 2 Kapchorua Tea Co. Limited
- 3 Kakuzi Limited
- 4 Limuru Tea Co. Limited
- 5 Rea Vipingo Plantations Limited
- 6 Williamson Tea Kenya Ltd
- 7 Sasini Ltd

Appendix II: Research Data

Number	Firm	Year	Financial Performance	Current Ratio	Quick Ratio	Inventory Turnover Ratio	Firm Size (KES '000')	LOG FIRM SIZE	Leverage	Inflation
1	Eaagads Limited	2008								0.2624
		2009								0.0923
		2010								0.0396
		2011	0.2023	5.9438	5.5611	23.0497	354,922	5.5501	0.0000	0.1402
		2012	0.0380	18.7609	16.8612	15.0009	573,356	5.7584	0.0000	0.0938
		2013	-0.1185	1.3317	0.7196	11.5167	499,561	5.6986	0.0000	0.0572
		2014	0.0900	10.8807	12.9562	9.7600	445,793	5.6491	0.0000	0.0688
		2015	0.1000	7.9380	10.6574	5.8561	429,934	5.6334	0.0000	0.0658
		2016	0.0500	5.7284	0.6342	0.9422	761,165	5.8815	0.0000	0.0630
	2017	0.1700	12.8295	2.5310	0.5727	922,802	5.9651	0.0000	0.0798	
2	Kapchorua Tea Co. Limited	2008	-0.0711	1.7729	1.2424	10.6687	982,058	5.9921	0.0025	0.2624
		2009	0.0854	1.6829	1.0885	5.4601	1,167,797	6.0674	0.0025	0.0923
		2010	0.1331	1.6410	1.1748	4.5511	1,498,931	6.1758	0.0013	0.0396
		2011	0.1709	2.1013	1.5840	9.5793	1,570,203	6.1960	0.0000	0.1402
		2012	0.0397	1.6463	1.3624	5.4326	1,962,897	6.2929	0.0000	0.0938
		2013	0.0900	2.1166	1.6195	5.6151	2,078,475	6.3177	0.0000	0.0572
		2014	0.0700	5.1013	3.3546	5.0291	1,929,161	6.2854	0.0000	0.0688
		2015	-0.0100	5.6295	3.1518	5.5993	1,983,239	6.2974	0.0000	0.0658
		2016	0.0500	4.2586	2.7813	3.1568	2,144,587	6.3313	0.0000	0.0630
	2017	-0.0300	3.4628	2.7020	5.1143	2,030,309	6.3076	0.0000	0.0798	
3	Kakuzi Limited	2008	0.1466	1.0745	0.7066	8.7197	2,662,519	6.4253	0.0695	0.2624
		2009	0.1945	1.4969	1.1384	8.0757	2,873,255	6.4584	0.0000	0.0923

		2010	0.1721	2.0735	1.6998	9.1512	3,218,591	6.5077	0.0000	0.0396
		2011	0.1704	3.3451	2.8330	4.6791	3,817,320	6.5818	0.0000	0.1402
		2012	0.1342	8.4745	8.0264	13.6830	3,571,700	6.5529	0.0000	0.0938
		2013	0.0500	7.9539	7.4282	12.5693	3,717,543	6.5703	0.0000	0.0572
		2014	0.0400	6.6569	6.3068	18.2313	3,857,454	6.5863	0.0000	0.0688
		2015	0.1200	4.4438	3.9179	6.8301	3,025,108	6.4807	0.0000	0.0658
		2016	0.1100	4.9176	4.1084	4.2393	5,064,414	6.7045	0.0000	0.0630
4	Limuru Tea Co. Limited	2017	0.1000	3.9021	3.3476	4.5619	5,746,126	6.7594	0.0000	0.0798
		2008	0.2637	3.9509	3.9509	0.0000	57,775	4.7617	0.0000	0.2624
		2009	0.4568	3.8366	3.8366	0.0000	84,794	4.9284	0.0000	0.0923
		2010	0.6590	7.9695	7.9695	0.0000	158,305	5.1995	0.0000	0.0396
		2011	0.3130	18.2869	17.5776	0.0000	191,242	5.2816	0.0000	0.1402
		2012	0.3182	12.4098	12.3783	2099.1667	320,023	5.5052	0.0000	0.0938
		2013	0.0800	16.8692	16.4617	1400.6272	343,007	5.5353	0.0000	0.0572
		2014	-0.0010	8.0832	8.0739	976.4380	338,600	5.5297	0.0000	0.0688
		2015	0.0100	5.8029	5.8028	125.4920	313,768	5.4966	0.0000	0.0658
		2016	-0.0800	5.1654	4.5943	55.2290	282,193	5.4505	0.0000	0.0630
5	Rea Vipingo Plantations Limited	2017	-0.0700	3.5568	3.1869	81.3971	262,009	5.4183	0.0000	0.0798
		2008	0.1392	1.4469	0.8070	2.0971	1,631,964	6.2127	0.0374	0.2624
		2009	0.1514	2.2393	0.9569	2.4767	1,414,084	6.1505	0.0223	0.0923
		2010	0.0609	1.3425	0.5204	2.7812	1,707,016	6.2322	0.0344	0.0396
		2011	0.2041	2.1027	0.8177	1.9728	2,288,740	6.3596	0.0625	0.1402
		2012	0.1601	3.4094	1.4481	3.0229	2,376,618	6.3760	0.0282	0.0938
		2013	0.1582	4.7171	2.5746	3.2098	2,797,430	6.4468	0.0137	0.0572
		2014	0.1100	6.5050	3.7630	3.0013	3,203,131	6.5056	0.0000	0.0688
		2015	0.3007	6.7695	4.7798	2.4013	4,881,218	6.6885	0.0000	0.0658
		2016	0.4376	13.8792	9.7925	1.7643	4,782,097	6.6796	0.0000	0.0630
		2017	0.2829	14.1989	10.5666	2.7684	4,609,500	6.6637	0.0000	0.0798

