Financial Structure on Liquidity of Manufacturing Firms Listed in the Nairobi Securities Exchange, Kenya

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Abstract- Liquidity of a manufacturing firm means a lot for it provides a cushion that would enable the company to survive a period of low earnings during which the company might be unable to access capital. Studies, both theoretical and empirical, demonstrate that a firm's financial structure affects the firm's liquidity. However, as a corporation`s liquidity desires are mainly impacted through the character of its operations, a corporation`s liquidity call for will range relying on its unique circumstances. Specifically, the look at was looking to; discover the impact of brief time period debt, long time debt capital and equity capital on liquidity of manufacturing corporations indexed in Nairobi Security Exchange, Kenya.The usage of corporation size forms the moderating factor/ variable. The look at can be pegged on 5 major theories which encompass the Working Capital theory, Modigliani-Miller theorem, the Pecking Order Theory, the Bird in Hand Theory, and the Theory of Optimal Firm Size. The positivist philosophy and Explanatory research design were used in the investigation. Nine Firms listed under the Manufacturing and allied sector of the Nairobi Securities Exchange were used as the study population. Census was utilized because the target population was below the central limit theorem threshold of normal population. Using a data extraction tool, information on accruals, leases, debentures, preference shares, retained earnings, reserves, cash balances, bank balances, and account payables was gathered from the monetary statements of the diverse manufacturing establishments and NSE reports. Diagnostic tests for the study were Multicollinearity test, heteroscedasticity test, normality test and stationarity test was done to reduce data 'noise'. Data was analyzed by the use of inferential statistics which included bivariate analysis using Pearson correlation and multivariate analysis using static panel regression. Robust Static Panel selection was done using Hausman test, in addition to descriptive statistics, inclusive of mean, mode, general deviation. Finally, the data analysis output was presented by the use of tables. The study concluded that financial structure affects liquidity of listed manufacturing firms in Kenya. Short-term debt is the main factor of financial structure that affects the liquidity of listed manufacturing firms in Kenya. The study further concludes that short-term debt significantly affects liquidity of listed manufacturing firms in Kenya. From the regression analysis, short-term debt showed a strong significant negative effect on cash ratio of the listed manufacturing firms in Kenya. The study concludes that long-term debt has a positive effect on liquidity of listed manufacturing firms in Kenya. Thus, increased long-term debt increases the liquidity of listed manufacturing firms in Kenya. The study concludes that Equity have a significant effect on liquidity of listed manufacturing firms in Kenya. In accordance to the findings in the regression analysis, the study concludes that firm size has a positive effect on the liquidity of listed manufacturing firms in NSE, Kenya. Thus, increased assets base improves the liquidity of manufacturing firms listed in Kenya.

Index Terms- Short Term Debt, Long Term Debt, Equity Capital, Firm Size and Liqudity

I. INTRODUCTION

The company's financial policy has two primary objectives. Each company's fundamental short-term financial purpose is to maximize the revenue surplus over expenses. Profitability should ideally be linked with the ability to maintain short-term liquidity (Brealey 2016). Liquidity is a company's capacity to satisfy its short-term financial obligations by turning its short-term assets into cash without incurring a loss (Akenga, 2017). On the global financial markets, assets that are considered to be of high quality are those that can be easily converted into liquid (Basel Committee on Banking Supervision, 2013). A highly liquid company has the benefit of being able to meet its long term as well as its short term obligations by paying its debts when they are due. The level of a company's liquidity is an important financial indicator that determines whether a firm has the capacity to pay its debts by calculating the ratios of its total debt, short-term debt, and long-term debt. The companies' various methods of financing are comprised of this mixture of capital, which includes both liabilities and equity in their entirety. Because it has an effect on the liquidity, risk, and value of any firm, every company needs to monitor the liquidity relationship with the financial structure and common equity.

Both theoretical and empirical research shows that the financial structure of a company has an effect on the company's liquidity (Salman, 2019). The proportion of a company's assets that are held in debt versus equity is one factor that can influence a company's liquidity. Recently, this relationship has been receiving a significant amount of attention from academics located all over the world. According to Amihud and Mendelson (1986), businesses have an incentive to select corporate policy that increases the liquidity of their securities because liquidity contributes to an increase in the value of the business. There is a correlation between the various components of a company's capital structure and the shock to its cash flow. Therefore, the optimal level of liquidity for companies would be achieved through a compromise between the low return on current assets and the advantage of reducing the amount of money that would have to be borrowed from outside sources (Mathuva, 2010).

Outecheva (2019) is of the opinion that over the course of the last few decades, the world has seen numerous cases of reputable businesses failing due to liquidity issues, which has had a devastating effect on the world. For example, Delta Air Lines, Enron, and WorldCom are just some of the iconic corporations that have declared bankruptcy in recent years. This is directly related to the issue of inadequately designed financial structures (Outecheva, 2019).

1.1   Financial Structure

According to Abor (2017) in its most basic form, financial structurei is a term that describes the proportion of a company's assets and operations that are financed by long term and short-term debts in comparison to equity.Because of its influence on profitability and the degree of risk that the company is exposed to as a result of its reliance on and expansion of debt, a company's financial structure is of critical importance in the decision-making process regarding investments and financing. Financial structure includes the process of making judgments on the elements of both long-term and short-term funding (Bhutta & Hasan, 2013). Whether the firm will have enough cash flows to pay its short-term and long-term financial commitments depends in large part on its financial structure (Akoto, Awunyo & Angmor, 2013).

The use of a company's retained earnings, which is the profit that is left over after all expenses have been deducted and dividends have been paid, is the most cost-effective source of financing for a business. Retained earnings represent the profit that is left over after a company has paid dividends (Dinayak, 2014). According to Oketah and Ekweronu (2020), the term "retained earnings" describes the portion of a corporation's net profit after taxes that is not paid out to shareholders in the form of dividends but rather is used to reinvest in the company. When companies choose to keep a portion of their profits for operational expenses, it makes them less reliant on funds obtained from outside sources to meet their ongoing financial obligations (Masood, 2017). The amount of a company's earnings that are kept by the company after all

dividends have been distributed to shareholders is referred to as the retention ratio. The formula for calculating the earnings retention ratio is as follows: Earnings Retention Ratio = 1 - Dividend Pay-out Ratio, where Dividend Pay-out Ratio is the ratio of dividends paid to profits for the year. Earnings retention ratio is the ratio of retained earnings to net income, which indicates the percentage of a company's earnings that are not distributed as dividends but are credited to retained earnings. It also indicates the percentage of a company's earnings that are credited to retained earnings.

Accounts payable constitute a further significant source of working capital (Priya, 2013). Account payables, accrual, and bank overdraft all contribute to a company's short-term liabilities, which we refer to as "short term debts." Customers who are willing to or have already provided the organization with goods and services on credit terms are considered to be the institution's accounts payable (Pandey, 2010). They consist of a company's trade credit as well as any expenses that have already been accrued, both of which work together to provide ongoing financing for a company's operations. The majority of businesses are forced to offer trade credits despite the fact that they would prefer to sell their products or services for cash rather than on credit. Trade credit, in contrast to the credit offered by financial institutions, does not require any formal collateral but instead relies on trust and reputation. The payables turnover ratio was used in order to determine how much of an impact the firm's accounts payable have on its liquidity. The cost of goods sold at the end of the fiscal year was divided by the average inventory to arrive at a figure that can be used to calculate the payables turnover ratio.

Last but not least, an external source of financing is equity. The form that equity capital takes is that of shares, and these shares may be issued either to the shareholders who are already a part of the company or to a new shareholder (Clive, 2010). Share capital is the portion of a corporation's equity that has been derived from the issuance of shares in the corporation to a shareholder. This portion of the corporation's equity is referred to as "share capital." There are two types of share capital that can be utilized to represent equity: ordinary share capital and preference share capital. Prior to the ordinary shareholders receiving their dividends at the rate that was agreed upon, the preference shareholders receive their dividends at the agreed upon rate, and any unappropriated profit is retained for the firm's expansion programs (Titman et al., 2011). The value of a company's share capital is typically included on the statement of the company's financial position under the heading of the equity capital section. According to Korczak and Phylaktis (2010), preference share capital is measured by comparing the market value of the shares with the firms' value. The firms' value is something that is always indicated in the financial reports of the company, whereas Korczak et al. (2010) made the suggestion that the value of ordinary share capital should be determined by comparing the current market price of a company's shares to the value of the company as reported in its financial statements.

Therefore, equity capital will be determined by dividing the value of equity capital by the total assets.

1.2 Liquidity

Both theoretical and empirical literature have shown the importance of liquidity to the analysts of a company-both internal and external-due to its impact on the daily business operations. This is the case regardless of whether the liquidity is being measured internally or externally (Bhunia *et al.,* 2011). For example, Salman (2019) found that tobacco companies are highly liquid, which allows them to achieve a good market position and enjoy high profits. On the other hand, Reschiwati, Syahdina, and Handayani (2020) found that liquidity, profitability, and firm size have a significant influence on the firm's capital structure. In accounting, the term "liquidity" can also be defined as the capability of meeting short-term obligations as they come up for payment (Award & Al-Ewesat, 2012). The institution is said to have a liquidity problem if it does not have sufficient cash on hand or liquid assets to meet its cash requirements (Singh & Shahid, 2016).

Liquidity management is an essential function for all types of institutions (Kungu, Njui & Kimani, 2014). This is due to the fact that liquid assets provide a cushion that would enable the company to survive a period of low earnings during which the company might be unable to access capital markets or could only do so at a very high cost. The reason for this is because liquid assets provide a cushion. Therefore, having a greater number of non-liquid assets is likely to result in a reduction in income. On the other hand, Njuguna (2015) contends that it may be counterproductive for businesses to maintain a level of liquidity that is higher than what is adequately required by the companies to finance their operations. The choice at the top-quality degree of liquidity calls for sound liquidity control as it performs a critical position This is due to the fact the effects of the bankrupt threat may be extremely "expensive" or even result in bankruptcy (Hristova, Stevcevska-Srbinoska, Mileva & Zafirova, 2019).

A company faces a type of risk known as liquidity risk if there is a possibility that it will be unable to meet all of its current financial obligations on time because there are insufficient current financial resources available (Abudy & Raviv, 2016). When it comes to making management decisions, such as whether or not the company should take out short-term or long-term bank loans to finance some new projects, this risk is considered to be one of the most important factors. Therefore, liquidity is a very important financial indicator because it determines whether or not the company is able to fulfill its debt commitments based on its ratios of short-term debt, long-term debt, and total debt without suffering unanticipated losses (Ghasemi & Razak, 2016). Traditional methods of measuring liquidity include the current ratio, cash ratio and the quick ratio. Alternative methods of measuring liquidity include the comprehensive liquidity index, the cash conversion cycle, the net liquid balance, and working capital requirements.

1.3 Firm Size

Firm size is a crucial aspect in the manufacturing firms for it is throught its metrics are reflected on the company's annual financial statements that make the firms learn of their market trends (Frank & Chongyu, 2013). Small firms have more severe information asymmetries (Koshio and Cia, 2003), more financial constraints (Kuan, Chu, Hsu and Li, 2009), and (Kusnadi, 2003), and as a result, they are more likely to suffer financial distress (Lee and Song, 2007) and are more likely to go bankrupt (Kusnadi, 2003). Firm size is an important factor in determining cash holdings (Mikkelson and Partch, 2003). A significant portion of the costs associated with the issuance of securities are fixed, which results in scale economies that bring about lower costs for larger companies when it comes to the cost of obtaining external financing.

Because more tangible businesses may use their assets as security to borrow more money and obtain tax benefits at a lower cost, the trade-off theory hypothesizes a positive relationship between tangibility and profitability. According to the findings of Vithessonthi and Tongurai (2015), there is a dynamic link between financial leverage and performance, the magnitude of which shifts as one moves along the spectrum of company size. When a company grows in size, its ability to borrow money also grows, and this gives businesses the ability to increase their leverage ratio. Therefore, in addition to the financing decision, the size of a company has an effect on their liquidity. According to Muigai and Muriithi (2017), long term debt has a positive and significant effect among large-scale firms, whereas short term debt is significantly detrimental. This finding recommends that drawn out obligation affects the liquidity of enormous scope organizations. Their study reported that while concluding which kinds of influence to use for their associations, directors of concrete assembling organizations ought to constantly consider the size of their organizations.

Wilkins and Wayongah (2019) noted that the connection between financial aspects and financial structure is determined by it's size. Their study reported that the size of an organization impacts the connection between a free factor and a reliant variable. Measures of a company's size that are used frequently include the number of employees and the raw materials that it uses, among other factors. Total asset is a trustworthy and, as a result, the most appropriate measure of business size, according to the findings of this study. This conclusion were drawn using the natural logarithm of the total assets held by these companies.

1.4   Manufacturing Firms Listed in the Nairobii Securities Exchange

The Nairobi Securities Exchange (NSE) is currently home to the listings of nine different manufacturing companies (Capital Market Authority,2022). There are nine manufacturing firms listed in the Nairobi Securities Exchange. Over the past decade, Kenya's manufacturing sector has been singled out as a critical factor in the country's overall success in maintaining an annual increase in GDP of at

least 10%. From the growth of 3.4% in 2018 to the growth of 5.6% in 2019, the real production of the manufacturing sector increased (Economic survey report, 2020). It is widely acknowledged that the manufacturing industry in Kenya is one of the most important components of the economy. A further necessity for achieving the goals of the strategy is the manufacturing sector's expansion at a pace of 8% yearly throughout the course of the following 20 years, according to Kenya's Vision 2030 blueprint. This can only be accomplished if there is an increase in the profits that the industry as a whole generates, and this in turn will be contingent on the identification of all the factors that can influence the profits that a particular company generates, including the management of its liquidity. The manufacturing process of a firm will be disrupted as a result of measures like labor strikes and supplier blacklists if it is unable to meet its liquidity commitments. In addition, these businesses are characterized by high intensive requirements for working capital and high competition as a result of high technological change (Kenya's Economic Outlook, 2011).

The managers of manufacturing companies face a significant challenge in striking a balance between their liquid and fixed assets due to the intensive working capital requirements of their companies. This is due to the fact that the majority of the assets held by manufacturing companies are either fixed assets, raw material, or work in progress, all of which take some time to convert into liquid assets. As a result, these manufacturing companies need to devise the most prudent method of managing their liquidity because research has shown that liquidity has an influence on the growth of the economy, the profitability of the companies, and their ability to remain in business. Wamugo, *et al.,* (2014) observed that most finance manager focus more on other financial decision such as investment decision, capital budgeting decision, and dividend decision, completely ignoring the effect that each financial decision has on the liquidity of the firms. This explanation helps to explain why the majority of companies have not found or formulated an appropriate financial structure that could maximize their profits.

1.5   Statement of the Problem

A significant number of failed businesses have been attributed to the owners' inability to properly plan and control their operations within their own companies (Afza & Nazir,2018). The liquidity of companies is one of the most significant areas of concern. Majority of manufacturing firms that are listed in the NSE are struggling with issues that are related to their liquid levels, which is one reason why the liquidity of the companies that are listed on the NSE has been a major cause for concern over the past several years. For example, according to the NSE reports, the average quick ratio for companies that were listed on the securities exchange in the manufacturing sector was 3.30 in 2016 (NSE, 2016), but it fell to 2.49 in 2017. (NSE, 2017). Additionally, the values fell to 2.21 in the year 2018 (NSE, 2018), then improved to 2.26 in the year

2019 (NSE, 2019), before falling to 2.07 in the year 2020. (NSE, 2021). It's possible that this is due to difficulties brought on by the Corona Virus Disease-2019 (COVID-19). Although there were fewer COVID-19 instances filed in 2021, the quick ratio which is computed by dividing current assets by current liabilities fell even lower to 1.59 in that year (NSE, 2021).

The aforementioned evidence, in consideration of KNBS reports, is supported by empirical evidence on the financial structure and liquidity of the market. For instance, Jimena (2019) demonstrated that tangibility, profitability and longterm debts all had a negative influence on the company's liquidity. Firms liquidity which majorly include long term capital was major focus by Jimena (2019). This is a topic that has received an excessive amount of previous research. As a result, a knowledge gap that is informed by an empirical gap has arisen. In order to fill this gap, financial structures of those firm listed in the manufacturing sector in NSE will be the focus of this study. Dang *et al.* (2019) concentrated their research on the liquidity of stock markets and how it is affected by leverage to create a conceptual void. In order to close the gap, the focus of this research is going to be on liquidity as the dependent variable.

The aforementioned studies offer valuable insight into the effect that a manufacturing company's financial structure has on the liquidity of the NSE-listed firms they operate. However, these studies only provide empirical evidence that financing structure is a key determinant of liquidity. They did not link the financial structure of manufacturing firms with their liquidity, which created a gap in the context of the discussion. Some of the studies were conducted in other industries, which is an indication that there is a context mismatch. In addition, certain studies have only stated that financial structure has an effect on liquidity, but they have not stated the significance of the relationship or the direction in which it runs, resulting in a gap in the empirical evidence. The goal of the current study was to close these gaps, by establishing the effect of financial structure on liquidity of manufacturing firms listed in NSE, Kenya.

1.6 Research Objectives and Hypotheses

The research objectives are: to determine the effect of short-term loan capital on the liquidity of manufacturing firms listed on Kenya's Nairobi Securities Exchange; to evaluate the effect of long-term loan capital on the liquidity of manufacturing firms listed on Kenya's Nairobi Securities Exchange; to investigate the effect of equity capital on the liquidity of manufacturing firms listed on Kenya's Nairobi Securities Exchange; and to ascertain the moderating effect of firm size on the relationship between the financial structure and liquidity of manufacturing firms listed on the Nairobi Securities Exchange in Kenya.

II.   LITERATUREı REVIEW

2.1   Theoretical eviews

The theories that follow hereunder served as the foundation for the theoretical review that this study was conducted. These theories provided support for the concept of financing structure and liquidity. The Working capital management theory, the Modigliani–Miller Theorem, the Pecking Order Theory, the Bird in Hand Theory and the Theory of Optimal Firm Size are some of the theories that have been developed.

Working Capital Management Theory is attributed to works by (Smith, 2004). The theory is concerned with the set of operations conducted by a corporation to guarantee that it has adequate funds for ongoing operational costs while maintaining beneficial resource investments (Smith, 2004). The working capital management hypothesis is founded on two competing ideas, the static view and the dynamic view. The static method places complete reliance on the liquidity ratios that are obtained from the balance sheet of the entity, such as the current and fast ratios, which are determined solely by the information that is on record. It has been said that the dynamic technique is beneficial to the business's operations (Brigham & Ehrhardt, 2004).The cash conversion cycle, which combines a notion based on each balance sheet and income statement data to liquidity with time, is concerned with the dynamics of a continuous liquidity management. This cycle lasts for a predetermined period of time (Brennan, Maksimovic & Zechner, 2003). As per the consequences of Blinder and Maccini (2001), the money change cycle is the absolute most basic part of good working capital administration. The typical number of days between the dates the business began paying providers and the dates it started gathering installments from providers are shown. Working capital management is concerned with both of these aspects. The management of accounts receivable, accounts payable, inventory, and cash is necessary for manufacturing companies to ensure that they have adequate resources to cover their day-to-day expenses without having excess cash that could be invested in other areas. Therefore, this theory points to the dependent variable as the explanation linking it with short term debt capital.

Modigliani–Miller Theorem states that the market worth of an organization is unaffected by its capital design, paying little mind to how subordinate it is on obligation. When the market conditions are ideal, the theory contends, there is no correlation between the capital structure of a company and its value. Making a choice about capital structure is challenging because figuring out the ideal structure by figuring out the ratios of each debt and equity is challenging. This theory forms a basis of finding out if the mix of financial structure affaects its value which is determined by liquidity in this instance.

Donaldson proposed the Pecking Order Theory for the first time in 1961, and Myers and Majluf made some modifications to it in 1984. According to this theory, the cost of financing a company will increase whenever there are unequal amounts of information available. The theory examines the hierarchy that should be followed by managers when considering different avenues of financial support for the business, Companies are recommended to prioritize their funding sources by starting with internal financing and allocating cash based on the cost of doing so, preferring to turn to equity as a last resort rather than as their main source of funding.This idea is important for the inquiry because it shows how important debt financing is to the firms that are the subject of the study.

The Bird in Hand Theory; Lintner (1962) and Gordon (1962) were the ones who initially put forward the theory (1963). It contends that because shareholders are risk averse and want certainty, they would rather receive immediate dividends than capital gains, whose share values are determined by supply and demand. This indicates that shareholders would rather receive dividend payments from a company's earnings than from its profits. It is preferable to have one bird in one bush (certain dividends) than two birds in two separate bushes (uncertain dividends). This theory operates based on a number of presumptions. For instance, a company ought to only have equity, or there ought to be no debt on it; retained earnings ought to be the only available source of finance; the company ought to have a constant retention ratio; the growth rate of earnings ought to be constant; the cost of capital ought to be stable and higher than the growth rate; and there ought to be no corporate taxes. In addition, there ought to be no corporate taxes.This theory is cruitial because retained earnings and reserves is part of equity used by listed firms.

The Theory of Optimal Firm Size; According to Robinson's (1931) theory of optimal firm size, "optimal firm size" refers to the circumstances in which a corporation may manage its business with the least amount of expenditure and the most amount of success. The word "optimum" in its literal definition refers to the circumstances that result in the best possible result. "Economies of scale" is a term used in economics that first appeared in Adam Smith and refers to the idea of increasing production returns through the division of labor (O'Sullivan & Sheffrin, 2003). The idea states that a business that is running at maximum efficiency is more likely to gain from economies of scale. The size of the firm has an influence on their liquidity. Managers of listed non-financial enterprises should constantly consider the size of the firm when determining the acceptable degree of leverage for their organizations, according to the advice given by Muigai and Muriithi (2017). The use of long-term debt has a substantial beneficial impact for large-scale firms, but the use of short-term debt has a big negative impact. The managers of manufacturing businesses which are listed on the Nairobi Securities Exchange should constantly keep the size of their organizations in mind when determining which form of leverage to utilize for their organizations.

2.2   Empirical Reviews

Kerongo, Nyamute, Okiro, and Ochieng (2022) conducted research that investigated the impact that a company's financial performance of non-financial enterprises listed on the Nairobi Securities exchange was influenced by capital structure. Along with that, it

looked into how liquidity affects the connection. Additionally, it identified whether the connection between the variables was in balance or disequilibrium. 53 non-financial firms that were all listed on the Nairobi Securities Exchange between 2010 and 2017 were examined using unbalanced panel data. During the information examination system, illustrative measurements, different relapse investigation, and straightforward relapse investigation were undeniably utilized. Influence affected the monetary execution of the recorded nonfinancial undertakings, as indicated by the review's discoveries. The connection between the capital construction and the monetary outcome of the association is likewise emphatically affected by liquidity. In this particular study, liquidity was treated as an intervening variable; as a result, a conceptual void was produced, which the present research attempts to fill by treating liquidity as a dependent variable.

Shikumo (2021) examined how share capital affected non-financial enterprises trading on the Nairobi Securities Exchange's revenue growth. It was decided to use an explanatory research approach. 45 non-financial firms that were listed on the NSE between 2008 and 2017—a span of 10 years—constituted the population of interest for the study. Both descriptive statistical analysis and panel data analysis were done as part of the study. According to the data, differences in financial growth may be accounted for to a degree of 32.73% and 11.62%, respectively, by changes in share capital, as assessed by growth in profits per share and growth in market capitalization. Financial growth is positively and significantly influenced by share capital, which may be quantified by gains in market capitalization as well as in earnings per share. The prior study used financial growth as the dependent variable, which left a conceptual hole that the current study seeks to fill by using liquidity. This study aims to ascertain how ordinary share capital affects the liquidity of industrial companies listed on Kenya's NSE.

Olweny, and Mukanzi (2021) wanted to know how the Nairobi Securities Exchange's equity securities' liquidity was influenced by the accounts payables conversion period. A descriptive survey research design was adopted for the study since the data was quantitative in nature and more of a descriptive study focused on describing conditions. The population of the research consisted of all 61 firms that were listed on the Nairobi Securities Exchange as of June 2016. In this study, secondary panel data from a ten-year period starting in 2007 were used. Both descriptive and inferential statistical analyses were to be run on the data to make sure they were pertinent to the company's objectives. The Nairobi Securities Exchange's equities securities market's liquidity was significantly impacted, it was discovered, by the conversion time for accounts payables. All of the firms that trade on the NSE were included in the study, but because

some of them are in the service industry and others have been in the manufacturing sector, their liquidity requirements differ from one another. There is a contextual gap as a result, which the current study aimed to fill by focusing primarily on the manufacturing firms that is listed in NSE.

Alam, Alam, Burman, and Hoque (2020) explored the connection between capital design of a business and its exhibition on the Dhaka Stock Trade for an example of material organizations utilizing a board informational collection covering the decade from 2010 to 2019. A spellbinding examination, a connection examination, a Hausman test, and a board relapse were acted to assess the speculation. The review's decisions demonstrate that there is a huge connection between business execution and the use of credit capital. The relationship between the company's presentation and transient obligation was viewed as sure as assessed by ROE and ROA, yet the connection between the association's exhibition and long haul obligation was demonstrated to be negative. The exhibition of the firm was utilized as the reliant variable in the exploration by Alam et al. (2020), which left a calculated understanding hole. The ongoing review will close the hole by thinking about liquidity as the reliant variable.

Burman, and Hoque (2020) explored the connection between capital design of a business and its exhibition on the Dhaka Stock Trade for an example of material organizations utilizing a board informational collection covering the decade from 2010 to 2019. A spellbinding examination, a connection examination, a Hausman test, and a board relapse were acted to assess the speculation. The review's decisions demonstrate that there is a huge connection between business execution and the use of credit capital. The relationship between the company's presentation and transient obligation was viewed as sure as assessed by ROE and ROA, yet the connection between the association's exhibition and long haul obligation was demonstrated to be negative. The exhibition of the firm was utilized as the reliant variable in the exploration by Alam et al. (2020), which left a calculated understanding hole. The ongoing review will close the hole by thinking about liquidity as the reliant variable.

Salman (2019) examined the effect of Growth, liquidity, and capitalization of the Pakistani tobacco sector. He also looked at how these three parameters related to one another. The purpose of this study is to ascertain how corporate actions about financing impact the liquidity and expansion of businesses in the tobacco sector. Between 2011 and 2016, cigarette businesses that traded on the Karachi Stock Exchange provided us with secondary data. Leverage has an impact on the growth and liquidity of organizations, as shown by the regression test's application to the derived ratios. Their research indicates that the tobacco business is heavily invested in short-term debt and is

dependent on debt financing. The investigation of tobacco businesses' strong liquidity, successful market positioning, and high earnings also shows that leverage has a favorable impact on a company's ability to grow and maintain liquidity. The study was done on the tobacco business, which could have different liquidity needs than manufacturing companies listed on Kenya's NSE. In an effort to close this contextual gap, the current study concentrates on manufacturing companies that are listed on the NSE in Kenya.

Eligová and Kotuková's (2019) study set out to determine how the kind of loan funding sources affects the liquidity of companies operating in the Czech Republic's food sector during the years of 2006 and 2016. The structure of organizations' debt funding sources and their liquidity were compared using the Granger causality test, correlation analysis, and extended method of moments (GMM). According to the results of the correlation study, it was shown that providing long-term loans to Czech companies in the food sector had a positive impact on those companies' liquidity as indicated by their cash ratios and quick ratios. The study provides a helpful knowledge of the possible effects that debt capital may have on a company's liquidity. However, the research was carried out in the Czech Republic, which creates a context void. By performing a regional analysis of the impact that debt capital has on the liquidity of manufacturing businesses that are listed on the NSE in Kenya, this study sought to fill the gap.

Mutai and Kimani (2019) analyzed the the effect that accounts payable management procedures have on the financial stability of public technical training institutes situated in Kenya's Rift Valley. The researchers chose to employ a census .Descriptive and inferential statistical approaches were used. The study's conclusions show that the Rift Valley's public Technical Training Institutions' liquidity was significantly impacted by the management procedures for accounts payable. Because the study relied on primary data, a methodological gap was created as a result. This study will collect secondary data

Omai, Memba, and Njeru (2018) looked at how Kenyan petroleum marketing firms' profitability is affected by share capital financing. In the course of the research that was conducted between 2007 and 2016, a cross-sectional survey methodology was used, and the 35 firms were chosen using criteria sampling. Questionnaires were employed to gather first-hand data for the study in addition to secondary sources. Descriptive statistics as well as univariate tests were used to assess the data (the t-test and the Pearson correlation). The data show that share capital and profitability at the 5% level have a negligibly small but negligible connection. Based on the p-values that correspond to coefficients that are equal to -0.174, this statement is made. Because the use of share capital financing or the profitability of a firm are unaffected by the use of share capital financing

throughout the research period, the study was unable to reject the hypothesis with a 95% confidence level. The study was done on petroleum marketing enterprises in Kenya, which were the study's primary focus since they had quite different liquidity needs from manufacturing firms. By focusing on manufacturing firms that are listed on the Kenyan NSE, this research sought to close the gap.

III. RESEARCH METHODOLOGY

3.1   Research Design
The explanatory research design was used for this study to determine the extent of a cause and effect relationship between financial structure and liquidity of the 9 manufacturing firms listed in Nairobi securities Exchange. A span of 10 years was used, 2012-2021.Positivism philosophy was utilized. Census was used due to the small nature of target population.

3.2 Empirical Model
It is not possible to describe the data obtained from field observations using mathematical relationships. An empirical model was used to assist researchers in observing a close correspondence between the behavior of the model and that of its referent. This was achieved through the utilization of an empirical model. It was developed to assist the researcher in studying the behavior of an all-encompassing term for activities that create models by observation and experiment. A panel data regression model that was adopted from Njenga (2020) was used because there are cross-sectional and time-series components to data.

3.2.1 General Model
The subsequent was specified as the broad empirical model to be utilized in the research:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \ldots\ldots\ldots (3.1)$$

Where: Y_{it} is Liquidity of firm i at time t; i is a firm, i = 1…8; t is the time period, t = 2012… 2021; X_{it} is predictor variable vector; β is beta coefficient; α is a constant term; ε_{it} is the error term.

3.2.2 Specific Model
Equation 3.2, which was made use of for estimate, is generated by expanding equation 3.1.

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \ldots\ldots\ldots (3.2)$$

Where;
Y_{it} = Liquidity of firm i at time t; X_{1it} = Short term debts of firm i at time t; X_{2it}= Long term debt of firm i at time t; X_{3it}= Equity of firm i at time t; α = The constant term β_1-β_3= The coefficients for the various independent variables; Subscript i= Firms (cross-section dimensions) ranging from 1 to 8; Subscript t = Years (time-series dimensions) ranging from 2012 to 2021; ε_{it} = error term.

3.2.3 Moderating Model
The regression coefficient is employed to determine the size of the causal relationship when moderating variables are involved (Morgan, 2019). If the moderating variable is found to be significant, it has the potential to either strengthen or weaken the effect that is resulting from a link between the independent and dependent variables. To be able to examine the moderating impact of business size on the relation between financial structure and

liquidity of manufacturing businesses listed at the NSE, Kenya, and this study used the analysis methods outlined by Keppel and Zedeck (1989). The size of the company was taken into account as a moderator in this study. The perceived moderator was developed first as an explanatory variable and subsequently as an interaction term, according to Keppel and Zedeck (1989). The enlarged form of equation 3.2 yields equations 3.3, which are then used to determine whether or not the firm's size has a moderating influence.

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 M_{it} + \beta_3 X_* M_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(3.3)}$$

X_{it} is predictor variable vector for firm i in time t; M_{it} is the firm size of firm i in time t

$X_* M_{it}$ is the interaction term of financial structure and liquidity for firm i in time t.

Stepwise Regression Model

In step one, the moderator was factored in as an independent variable. Equation 3.4, which is utilized for estimate, is created by expanding equation 3.3.

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 M_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3.4$$

In step two, the moderator was factored in as an interaction effect. Equation 3.3 is expanded to obtain equations 3.5 which was used for estimation.

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 M_{it} + \beta_5 X_1 * M_{it} + \beta_6 X_2 * M_{it} + \beta_7 X_3 * M_{it} + \varepsilon_i \dots\dots\dots\dots\dots 3.5$$

Where;

Y= Liquidity; X_1=Short-Term Debt; X_2=Long-Term Debt; X_3=Equity Capital; X_4=Firm Size; X_5= Short-Term Debt * Firm Size; X_6= Long-Term Debt * Firm Size; X_7= Equity Capital * Firm Size. Firm size was just a logical variable if factors β1, β2 and β3 in model 3.4 are not huge (P> 0.05) while β4 in model 3.5 is critical at (P<0. 0.5). The size of an organization was a mediator whose influence along with bearing were shown by the βis if β5 to β7 in model 3.6 are critical.

IV. RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Cash ratio	90	.0694232	.0474932	.0120185	.2660
Current ratio	90	1.434244	.6043332	.4300	2.7557
Short-term debts	90	.4160088	.2330074	.1092	.9842
Long-term debts	90	.201224	.1675365	.0133	.9483
Equity	90	.3386575	.288395	0.000	.8490238
X4-M Firm size (Moderator)	90	9.673	1.858	6.169.45.	12.908

Researcher (2023)

From the descriptive statistics, manufacturing firms listed in NSE showed an average cash ratio of 0.0694 and a standard deviation of 0.0475 between 2012 and 2021. The minimum cash ratio for the period was 0.012 with a maximum of 0.266. Current ratio showed a mean of 1.434 and a standard deviation of 0.604 between 2012 and 2021. In the period, the manufacturing firms listed in Kenya showed a minimum current ratio of 0.43 and a maximum of 2.756. The firms had a mean short-term debt ratio of 0.416 and a standard deviation of 0.233. The minimum short-term debt ratio was 0.1092 with a maximum of 0.9842. Further, long-term debt ratio across the manufacturing firms listed in Kenya showed a mean of 0.201 and a standard deviation of 0.168 for the period between 2012 and 2021. In the period, the firms displayed a minimum long-term debt ratio of 0.0133 with a maximum ratio of 0.9483. Between 2012 and 2021, the Equity ratio averaged at 0.339 with a standard deviation of 0.2883. In this period, the firms exhibited a minimum Equity ratio of zero and a maximum of 0.849 within the same period. Between 2012 and 2021, firm size (log of assets) (a moderating effect variable) in manufacturing firms listed in Kenya showed a mean of 9.673 with a standard deviation of 1.858. Firm size showed a maximum log of assets of 12.908 and a minimum 6.169.

4.2 Correlation analysis

Pearson's Board relapse examination and relationship investigation was used (Lehman, 2005). The section below presents the results thereof.

Table 4.2: Correlation analysis

Variable	Cash ratio	Short-term debts	Long-term debts	Equity	X4-M Firm size
Cash ratio	1.000				
Short term debts	0.210* 0.054	1.000 -			
Long Term Debts	0.759* 0.001	0.779 0.002	1.000 -		
Equity	0.697*	0.717	0.211	1.000	

	0.010	0.012	0.076	-	
X4-M Firm size	0.556*	0.578	0.176	0.176	1.000
(Moderator)	0.011	0.001	0.070	0.059 1	-

*One-tailed Pearson Correlation

Researcher (2023)

Correlation analysis was executed to calculate Karl Pearson Correlation Coefficient between dependent variables (liquidity) and independent variables (short term debts, long term debts, and Equity and Firm Size effects). Correlation analysis was conducted at 95% confidence level. The results stipulated in table 4.2 above shows that short term debts and Liquidity of a firm (cash-ratio) are positively and significantly related with (r= 0.759, p=0.001) and (r= 0.779, p=0.002) respectively. The results also indicate that long term debts and Liquidity of a firm (cash-ratio) are positively and significantly related with (r= 0.697, p=0.010) and (r= 0.717, p=0.012) respectively. They also noticed that there is a positive relationship between long term debts and liquidity. Correlation results pointed out that Equity and Liquidity of a firm (cash-ratio) are positively and significantly related with (r= 0.556, p=0.011) and (r= 0.578, p=0.001) respectively. Lastly, the correlation results indicated that Firm Size effects or as a moderator and Liquidity of a firm (cash-ratio) are positively and significantly related with (r= 0.472, p=0.004) and (r= 0.498, p=0.003) respectively.

4.3 Diagnostic Tests

The goal of a diagnostic test is to discover particular flaws in the data and the specific efforts that could be put forth to rectify those flaws. In the end, the quality of a diagnostic test was evaluated based on a comparison of the test results with the most accurate alternative that was currently available hence unbiased model. The researcher used panel data for analysis of the data that was amassed from all manufacturing firms listed in NSE for a breadth of ten years sweeping through 2012 to 2021. This compelled the researcher to carry out a considerable number of panel data diagnostic tests to get a fix on which of the model to resolve to that gave the precise and relevant proceeds for this particular study. The tests included heteroscedasticity, normality, multicollinearity, test for autocorrelation, stationarity and Hausman test for fixed and random effects. The study executed these tests to steer clear of spurious regression results.

4.3.1 Multicollinearity Test

The purpose of the multicollinearity test is to establish whether or not there is a meaningful connection between different types of debt. This study also probed multicollinearity of the data harnessed in the research. Variance inflation factor (VIF) was made use of to carry this test and it quantified the scope to which variance is inflated.

Table 4.3: Multicollinearity Test

Variable	VIF	1/VIF
Short-term debts	1.03	0.970873
Long-term debts	1.80	0.555555
Equity	1.45	0.689655
X4-M-firm size	1.08	0.925925
Mean VIF	1.34	-

Researcher (2023)

4.3.2 Tests of Normality

In a nutshell, the data for the panel was collected from a population that follows a normal distribution. The normality test is used to establish whether or not a data set can be satisfactorily modelled using a normal distribution.

Table 4.4: **Tests of Normality, Shapiro-Wilk W test for normal data**

Variable	Obs.	W	V	Z	prob>z
Cash ratio	90	0.72718	18.726	6.420	0.00000
Current ratio	90	0,95842	2.854	2.298	0.01078
Short-term debts	90	0.80616	13.305	5.671	0.00000
Long-term debts	90	0.78418	14.814	5.906	0.00000
Equity	90	0.89109	7.475	4.408	0.00001
X4-M-firm size	90	0.95845	2.852	2.296	0.01083

Researcher (2023)

The study looked up to test for normality of the data brought into play in the research. This was done using Shapiro-Wilk test. The null-hypothesis of this test was that the data is normally distributed. If the p-value is below the chosen alpha level, then the null hypothesis is rejected and there is evidence that the data tested are not from a normally distributed population. From table 4.4, the variables displayed a p-value which was less than 0.05; hence we do reject the null hypothesis that the data is normally distributed. Hence, we conclude that the data from the variables used in this study is not normally distributed.

4.3.3 Heteroscedasticity Test

Heteroscedasticity is a barrier when dealing with panel data since ordinary least squares (OLS) regression operates under the premise that the residuals originate from a population with a constant variance. Heteroscedasticity is when an observed variable's variation across a certain time period is uneven. Below are the results.

Table 4.5: Heteroscedasticity

Breusch-Pagan/Cook-Weisberg test for heteroscedasticity		
Variables: fitted values of LF		
VIF		
1/VIF		
Chi^2 (1)	1.54	0.970873
Prob>Chi^2 (1)	0.2405	0.555555

Researcher (2023)

From the findings shown in table 4.5 above indicates that the p-value is more than 0.05. Hence, we cannot reject the null hypothesis that there is constant variance in our data. Consequently, the data is void of heteroscedasticity.

4.3.4 Autocorrelation

The purpose of autocorrelation analysis was to examine whether or not there is a pattern or trend that develops over time by analyzing the relationship between observations made at various times

Table 4.6: Durbin Watson

Durbin Watson		
d-statistic (4, 76)	1.451	-

Researcher (2023)

Table 4.6 puts on view the proceedings on the autocorrelation test based on Durbin Watson statistics. From the Durbin Watson table the Watson value should lie between 1.390 and 1.595. Figure 4.6 shows a Durbin Watson value of 1.451, which is within the stipulated range proving that the data is not auto-correlated. Thus, it can be inferred that variables in this study were independent owing to the fact that residuals were autonomous and there was no autocorrelation.

4.3.5 Stationarity Tests

The study applied the Levin-Lin-Chu test. Baltagi (2005) opined that the Levin-Lin-Chu test are the most appropriate when conducting stationarity tests for panel data. This test helps in testing the stationarity in the panel data. The test examines the stationarity (Ha) or presence of unit roots tests (Ho) within the panel data using the following criterion; if P-value<0.05 use stationary alternative.

Table 4.7: Stationarity Results

Variable	LLC Test	Statistics	P-Value
X4-M-firm size	Unadjusted t	-8.6845	
	Adjusted t*	-2.6931	0.0032
Short-term debts	Unadjusted t	-9.374	
	Adjusted t*	-8.967	0.0000
Long-term debts	Unadjusted t	-12.2746	
	Adjusted t*	-10.1620	0.0000
Equity	Unadjusted t	-7.2518	
	Adjusted t*	-5.8136	0.0000

Source: Research Data (2023)

The test was based on the null hypothesis that the panels contain unit roots against an alternative of stationary panels. The findings of the study indicated an LLC p-statistic as follows; firm size (P=.0032<.05), Share capital (P=.0000<.05), Short term debts (P=.0000<.05) and Equity (P=.0000<.05). This is an indication that the variables exhibited stationarity since the adjusted t* had a significance p-value at 5% significance level.

Further, stationarity test results showed that the pooled first-order autoregressive parameter with lags resulted in returns in investmens results of (P= 0.0000<.05). Hence, the findings showed there was no stationarity violation in the variables utilized in the study. The results agree with Levin et al. (2002) who states that a panel data unit root test may be used to evaluate the null hypothesis of a unit root with the hypothesis of homogeneous stationarity. The series is stationary, which is the alternate hypothesis for the Levin Lin Chu Test. When the p-value is less than or equal to the critical value (at a 5% significance level), the null hypothesis is rejected, according to the criteria for its rejection. When the p-value (at 1% significance level) is higher than or equal to the crucial value, the null hypothesis is accepted.

4.3.5   Hausman Test for Fixed and Random Effects

The Hausman specification test was used as usual to evaluate the appropriateness of the model that is going to be applied.

Table 4.8: Hausmann Test for Fixed or Random Effects

| Variable | Coefficients | | | |
	(b) random	(B) Fixed	(b-B) Difference	sqrt(diag (v_b-v_B)) S.E.
Short-term debts	-2702778	-.0161878	.2864656	.1479921
Long-term debts	-.1394316	.059501	- .1989326	.4876369
Equity	.8122007	0.0469584	.7652422	.3991901
X4-M-firm Size	6.42208	.5451882	5.876892	3.631244

b = consistent under H0 and Ha; obtained from regress

B = inconsistent under Ha, efficient under H0; obtained from xtreg

Test: H0: difference in coefficients not systematic

$Chi^2 (4)= (b-B)' [V\_b-V\_B)^{(-1)}](b-B)$

= 35.97

$Prob>Chi^2 = .0000$

Researcher (2023)

To resolve between fixed or random effects a Hausman test was performed where the null hypothesis was that the preferred model is random effects, that is if the Prob>chi2 value was greater than 0.05. The alternative is that the fixed effects if the Prob>chi2 value was less than 0.05. It basically tested whether the unique errors (ui) are correlated with the regressors. From table 4.7, the p-value of Hausmann test is lesser than 0.05 significant level. Consequently, the null hypothesis is rejected which indicates that fixed effect model was preferred.

4.4 Regression Analysis: Model Specification Test

This study was based on some hypothesis assertions that; H_{01} = There is no significant effect of short term debt capital on liquidity of manufacturing firms listed in Nairobi Securities Exchange, Kenya. H_{02} = There is no significant effect long term debt capital on liquidity of manufacturing firms listed in Nairobi Securities Exchange, Kenya. H_{03} = There is no significant effect of equity capital on liquidity of manufacturing firms listed in Nairobi Securities Exchange, Kenya. H_{04}: Firm Size has no significant moderating effect on the relationship financial structure and liquidity of manufacturing firms listed in Nairobi Securities Exchange, Kenya**.**

4.4.1 Current Ratio Regression Analysis

Table 4.9: ANOVA and Model Summary for Current Ratio

Fixed-effects (within) regression	Number of obs=90
Groups variable N	Number of groups =9

R-sq	obs per group:
Within = .5248	min = 10
Between = .5219	avg =10.0
Overall = .4251	max = 10
	F(4,68) = 5.42
Corr (u_i, Xb) = -.9056	**Prob>F = .0007**

Researcher (2023)

Analysis of Variance (ANOVA) was used to find out whether the variation in the financial structure would explain the variance in liquidity measured in terms of current ratio. From table 4.8, the model showed an F-statistic of 5.42 which is higher than critical f value (2.492). This exhibits that the fixed model fitted the data and was the most relevant model to use in the regression. The model exhibited a significant value of 0.001 which was less than 0.05. This uncovers that short-term debt ratio, long-term debt ratio, Equity ratio and firm size have a significant relationship with liquidity as measured by current ratio. The fixed model is a within regressor model therefore the exposition is based on the R squared within the variables. The data revealed an R squared value (within) of 0.5248 for current ratio. This shows that 52.48% of the variation in current ratio of manufacturing firms due to changes in short-term debt ratio, long-term debt ratio, Equity ratio and firm size at 95% confidence interval between 2012 and 2021. 47.52% change in current ratio of the firms is influenced by other factors excepting the ones taken into account in the study.

Table 4.10: Regression coefficients For Current Ratio

Current ratio	Coef.	Std. Err.	T	p>|t|	[95% conf. Interval	
Short-term debts	-0.5066786	.1262395	-4.01	.000	-0.7579656	-.255043
Long-term debts	.3947333	.1221184	3.23	.018	.1514702	.8776462
Equity	.2482655	.0590751	4.20	.014	.1305909	.3659341
Firm Size	.252988	.1180132	2.14	.035	.0178921	.4880727
_cons	-62.51138	26.83837	-2.33	.023	-115.9756	-9.046364

Researcher (2023)

From table 4.9, it was revealed that holding short-term debt ratio, long-term debt ratio, Equity ratio and firm size of listed manufacturing firms constant zero between 2012 and 2021, the current ratio would stand at -62.5114 (constant term). Unit rise in the short-term debt ratio would decrease the current ratio by 0.5066. A unit rise in long-term debt ratio would increase current ratio by 0.3947 within the period. Inversely, a unit increase in Equity ratio would lead to increase in current ratio by 0.2483. The table shows that a unit1increase in firm1size would increase the current ratio of the firms by 0.2530. The effect of all the independent variables on current ratio was found to be significant as $p<0.05$.

4.4.2 Cash Ratio Regression Analysis

Table 4.11: ANOVA and Model Summary for Cash Ratio

Fixed-effects (within) regression	Number of obs=90
Groups variable N	Number of groups =9
R-sq	obs per group:
Within = .4955	min = 10

Table 4.12: Regression coefficients on cash ratio

Cash ratio	Coef.	Std. Err.	T	p>|t|	[95% conf. Interval	
Short-term debts	-0.4215457	.1224214	3.44	.001	-0.1776714	-.6654128
Long-term debts	.2611689	.0518832	5.03	.000	.1578143	.3645194
Equity	.1366763	.0460144	2.97	.004	.0450169	.2283315
Firm size Moderator	.5154955	.2330157	2.24	.028	.1570134	1.073971
_cons	-2.076641	.7667721	-2.71	.008	-3.604087	-.5491216

Researcher (2023)

Based on regression findings, from table 4.11, it was revealed that holding short-term debt ratio, long-term debt ratio, Equity ratio and firm size of listed manufacturing firms constant zero between 2012 and 2021, the cash ratio would stand at -2.077 (constant term). Unit rise in the short-term debt ratio would increase the cash ratio by 0.4215. A unit rise in long-term debt ratio would increase cash ratio by 0.2611 within the period. Alternately, a unit increase in Equity ratio would induce an increase in cash ratio by 0.1367. The table shows that a unit increase in firm size would cause a rise in the cash ratio of the firms by 0.5155. The effect of all the independent variables on the cash ratio was found to be significant as p<0.

4.6 Model fitting
The panel regression models were;
$$CR_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + B_4 X4_{it} + \varepsilon_{it}\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (iii)$$
$$QR_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + B_4 X4_{it} + \varepsilon_{it}\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (ii)$$
The derived models were:
$$CR_{it} = -62.5114 - 0.5067 X1_{it} + 0.3947 X2_{it} + 0.2483 X3_{it} + 0.2530 X4_{it} \ldots\ldots\ldots\ldots\ldots\ldots (i)$$
$$QR_{it} = -2.0766 + 0.4215 X1_{it} + 0.2612 X2_{it} + 0.1366 X3_{it} + 0.5155 X4_{it} \ldots\ldots\ldots\ldots\ldots\ldots (ii)$$
It is given that;
- Cash ratio = (Cash + Marketable Securities) / Current Liabilities

Between = .38471	avg =10.0
Overall = .3002	max = 10
	F(4,68) = 13.80
Corr (u_i, Xb) = -.70151	Prob>F = .0001

Researcher (2023)

From table 4.10, the model showed an F-statistic of 13.08 which is less than critical f value (2.492). This exhibits that the fixed model was fit for the data. The model displayed a significant value of 0.000 which was less than 0.05. This uncovers that short-term debt ratio, long-term debt ratio, Equity ratio and firm size have a significant effect on liquidity as measured by cash ratio. Figure 4.4, shows an R squared value (within) of 0.4955. This shows that 49.55% of the variation in cash ratio of manufacturing firms was due to changes in short-term debt ratio, long-term debt ratio, Equity ratio and firm size at 95% confidence interval between 2012 and 2021. 50.45% change in cash ratio of the firms is atoned for by other factors excluding the ones utilized in the study.

- Current ratio = (Cash + Marketable Securities + Receivables + Inventory)/ Current Liabilities

The cash ratio is one of three common methods to evaluate a company's liquidity: its ability to pay off its short-term debt. The cash ratio and the current ratio as used in this research in general are measurements used more often than the quick ratio. From the regression equation, we can deduce that when the short-term debt ratio, long-term debt ratio, Equity ratio and firm size are held constant the current ratio of manufacturing firms would stand at -62.5114 for current ratio and -2.0766 for cash ratio. This shows that combined short-term debt ratio, long-term debt ratio, Equity ratio and firm size have a positive effect on liquidity of manufacturing firmsas measured by current and cash ratio.

From the first equation, short-term debt ratio showed a strong negative effect on liquidity as measured by current ratio. However, from equation ii, short-term debt ratio showed a positive effect on liquidity as measured by cash ratio. The findings concur with those of Anderson (2012) who found a positive relationship between short-term debt and liquidity. The findings concur with those of Ghasemi and Ab Razak (2016) who found that cash ratio related positively with short-term debt while current ratio negatively related with short-term debt. However, the findings differed with those of Fola (2015) who found that liquidity (current ratio) positively related with short-term debt ratio.

From the equations, long-term debt ratio showed a positive effect on both current and cash ratios of liquidity. The findings concur with those of Seligová (2017) who found that liquidity of

companies was positively influenced by shareholder equity ratio. Akinlo (2011) also found that shareholder equity was positively related to liquidity. However, the findings differed with those of Trippner (2013); Xuezhi Qin and Dickson (2012) who found that long-term debt had a negative effect on liquidity ratios. From the fitted models, Equity showed a positive effect on both the current and cash ratios as measures of liquidity of manufacturing firms between 2012 and 2021. The findings concurred with those of Shah (2012) who found a positive relationship between Equity and liquidity. The findings however differed with those of Karlsson and Svensson (2015); Aryal (2017); and Sarlija and Harc (2012) who found that the two related negatively.

From the fitted reression models, log of assets as a measure of firm size showed a positive effect on both the current and cash ratios as measures of liquidity of manufacturing firms between 2012 and 2021. The findings concur with the findings of Halil and Hasan (2012) who found a positive effect. However, the findings differed with the findings of Mocnik and Sirec (2015) who found a negative effect.

Levin, Lin and Chu assume that the three models below produce the stochastic term. The null and alternative hypothesis for model 1 may be written as H0 $\rho 1 = 1$ and H0 $\rho 1 < 1$. The null hypothesis was that the panel data contained a unit root while the alternate hypothesis the panel was stationary. The assumption for model was that $\alpha i = 0$, the error term was distributed independently across individuals and was stationary for each individual. According to Levin et al. (2002), a panel data unit root test may be used to evaluate the null hypothesis of a unit root with the hypothesis of homogeneous stationarity.

V.   CONCLUSIONS AND RECOMMENDATIONS

5.1   Conclusions

From the strong R squared value, the study drew inference that short-term debt, long-tem debt capital, Equity and firm size are the main determining factors of the liquidity of listed manufacturing firms in Kenya. From the model summary, the study infers that fnancial structure affects liquidity of listed manufacturing firms in Kenya. Short-term debt is the main factor of financial structure that affects the liquidity of listed manufacturing firms in Kenya. The study additionally deduces that short-term debt significantly affects liquidity of listed manufacturing firms in Kenya. From the regression analysis, short-term debt showed a strong significant negative effect on current ratio of the listed manufacturing firms in Kenya. This shows that increased short-term debt improves the current ratio of listed manufacturing firms in Kenya. The study also discovered that short-term debt had a weak significant positive effect on the cash ratio of listed manufacturing firms in Kenya. This gives rise to the conclusion that short-term debt has a significant negative net effect on liquidity of listed manufacturing firms in NSE, Kenya.

The study infers that long-term debt has a significant effect on liquidity of listed manufacturing firms in Kenya. Deducing from the findings of the regression analysis, the study infers that long-term debt has a positive effect on liquidity of listed manufacturing firms in Kenya. Thus, increased long-term debt gives a rise to the liquidity of listed manufacturing firms in Kenya.

The study draws inference that Equity have a significant effect on liquidity of listed manufacturing firms in Kenya.

From the discoveries in the regression analysis, the study concludes that Equity have a positive effect on the liquidity of listed manufacturing firms in Kenya. Thus, an increased Equity improves the liquidity of manufacturing firms listed in Kenya. The study winds up that firm size has a significant effect on liquidity of listed manufacturing firms in Kenya. Judging from the findings in the regression analysis, the study infers that firm size has a positive effect on the liquidity of listed manufacturing firms in Kenya. Thus, increased assets base improves the liquidity of manufacturing firms listed in Kenya.

5.2   Recommendations

Short-term debt shows a negative effect on current ratio and a positive effect on cash ratio. This creates confusion as to the effect of short-term debt on liquidity of manufacturing firms listed in NSE. Accordingly, manufacturing firms should maintain an optimal level of short-term debt as a means to avoid liquidity issues in their firms. The study unearthed that long-term debt had a positive effect on the liquidity ratios of the manufacturing firms. This creates the need for increased long term debts in manufacturing firms in order to enhance the firms' liquidity. The listed manufacturing firms, as a way to improve their liquidity ratios, should bring in more shareholders into the firms which would increase the level of long-term debt in the firm. The NSE should also raise the minimum capital base for the listed firms in order to enhance the liquidity of such firms. The study uncovered that Equity finance positively affect the liquidity of listed manufacturing firms. This study recommends that listed manufacturing firms in Kenya retain more profits so as to improve their liquidity ratios. The study found that firms should also purchase more assets that would improve their liquidity standing. The larger the asset base the more liquid a fim becomes. Stemming from the findings, the study advocates for a study on other factors determining liquidity of listed manufacturing firms other than financial structure. The study also puts foward that an identical study to be carried out using a different time period. A similar study is recommended on non-listed firms in order to compare results

REFERENCES

[1]   Abor, J. (2007). Debt policy and performance of SMEs: Evidence from Ghanaian and South African firms. The Journal of Risk Finance, 8(4), 364-379.

[2]   Achieng, B. O., Muturi, W. M., & Wanjare, J. (2018). Effect of Debt Financing Options on Financial Performance of Firms Listed at the Nairobi Securities Exchange, Kenya. Research Journal of Finance and Accounting, 5(4), 160– 171.

[3]   Achode B. M. and Rotich G. (2016). Effects of accounts Payable as Source of Financing on Performance of Listed Manufacturing Firms at the Nairobi Securities Exchange, International Journal of Research Studies in Agricultural Sciences, 2(4), 24-32.

[4]   Akenga G. (2017). Effect of Liquidity on Financial Performance of Firms Listed at the Nairobi Securities Exchange, Kenya. International Journal of Science and Research. Volume 6 Issue 7, July 2017.

[5]   Al Malkawi H. N., Rafferty M. and Pillai R. (2010). Dividend Policy a Review of Theories and Empirical Evidence. Euro Journals, Inc. 2010.

[6]   Amidu M. (2007). How does dividend policy affect performance of the firm on Ghana Stock Exchange? Investment Management and Financial Innovations, Volume 4, Issue 2, 2007.

[7]   Ayu M. Y. and Ahmar N. (2013). The effect of accruals quality on performance of manufacturing companies listed in Indonesia Stock Exchange period 2004 – 2010. The Indonesian Accounting Review Vol. 3, No. 2, pages 173 – 180.

[8]   Brealey R. A., Myers S. C. and Allen F. (2008). Principles of Corporate Finance – 9th Edition. McGraw-Hill/Irwin, New York.

[9]   Deeptee, P. & Roshan, B. (2009). Signaling Power of Dividends on firm's future Profits: A Literature Review. Evergreen Energy- Interdisciplinary Journal, 4, 1-9.

[10] Desai, R., & Desai, J. (2021). Moderating effect of firm size on capital structure determinants: evidence from Indian food processing industry. Copernican Journal of Finance & Accounting, 9(3), 61–81.

[11] Donaldson, G. (1961) Corporate Debt Capacity: A Study of Corporate Debt Policy and the Determination of Corporate Debt Capacity. Harvard Business School, Boston.

[12] Dudycz, T. (2019). The Effect of Share Capital on Company Performance. Capital Markets: Asset Pricing & Valuation eJournal.

[13] Enow, A. B. (2010). A Study of Capital Structure in Extremely Different Environments, unpublished Master Thesis, Blekinge Institute of Technology.

[14] Frank, M.Z. and Goyal, V.K. (2003). Testing the Pecking Order Theory of Capital Structure. Journal of Financial Economics, 67(2), 217-248.

[15] Ghasemi M. & Ab Razak N. H. (2016). The Impact of Liquidity on the Capital Structure: Evidence from Malaysia, International Journal of Economics and Finance; 8(10), 130

[16] Gomis, R.M., Khatiwada, S. (2016). Debt and Productivity: Evidence from firm level data. International Labour Office Research Department.

[17] Gordon M. J. (1963). Optimal Investment and Financing Policy, Journal of Finance, 18(2), 264-27.

[18] Hristova, S., Stevcevska-Srbinoska, D., Mileva, I., and Zafirova, A. (2019). Trade-Off between Liquidity and Profitability: An Empirical Study of Pharmaceutical Sector in the Republic of North Macedonia. Timisoara Journal of Economics and Business, 12(2), 127-148.

[19] Jafari S., Gord A. and Beerhouse M. (2014). The effect of debt, firm size and liquidity on Investment cash flow sensitivity of listed companies in Tehran Stock Exchange, Arabian Journal of Business and Management Review (Nigerian Chapter),2(10), 94-101.

[20] Jape, S. S., and Korde, T. (2013). Study of established corporate finance tools and its need in financial decision making of companies, with emphasis on capital budgeting and capital structure (with reference to Mumbai based companies: period-2002-2012). International Journal of Management and Social Sciences Research, 2(10), 15-18.

[21] Jimena E. A. (2019). The Effects of Profitability, Liquidity, Tangibility, Firm Size, and Asset Turnover on Capital Structure in Chemical Industry Listed on Indonesia Stock Exchange from 2014 to 2018. 8th International Conference on Entrepreneurship and Business Management. Advances in Economics, Business and Management Research, volume 145.

[22] Juwita, A. (2018). The Effect of Capital Structure, Liquidity, And Growth On Corporate Performance Classified as Small Capitalization Companies On Indonesia Stock Exchange Period 2011-2016. International Journal of Scientific & Technology Research, 7(2), 76-81.

[23] Kadim, A., Sunardi, N. and Husain, T., (2020). The modeling firm's value based on financial ratios, intellectual capital and dividend policy. Accounting, 6(5), 859-870.

[24] Kadima M. J., Olweny T. and Mukanzi C. (2021). Accounts Payables Conversion Period on Liquidity of Equity Securities of Companies at Nairobi Securities Exchange. African Development Finance Journal, 5(1),33-56

[25] Keown A., Martin J. D., Petty W. D. and Scott D. F. (2007). Financial Management: Principles and Applications, 9th Edition.

[26] Kerongo M. M., Nyamute W., Okiro K and Ochieng D. E (2022). Capital structure, liquidity and financial performance of non-financial firms listed at the Nairobi Securities Exchange, African Development Finance Journal, 1(2), 16-33.

[27] Levin, A., Lin, C.F. and Chu, C.S.J. (2002) Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties. Journal of econometrics, 108(1), 1-24.

[28] Lintner J. (1962). "Distribution of Incomes of Corporations among Dividends, Equity and Taxes", American Economic Review, No.46, (May 1956) pp.97-1 13.

[29] Luigi, P., and Sorin, V., (2009). A Review of the Capital Structure Theories, 3(1),315-320.

[30] Mathuva, D. (2010), 'Influence of Working Capital Management Components on Corporate Profitability: A Survey on Kenyan Listed Firms,' Research Journal of Business Management, 3(1), 1-11.

[31] Mehar a. (2005). Impacts of equity financing on liquidity position of a firm. Applied Financial Economics, 15(6), 425–438.

[32] Muhammad Ali, T. (2012). Impact of Equity on the Maximization of Firm Value and Shareholders Wealth (Doctoral dissertation, Foundation University, Islamabad).

[33] Muhindi, K. A. & Ngaba, D. (2018). Effect of firm size on financial performance on banks: Case of commercial banks in Kenya. International Academic Journal of Economics and Finance, 3(1), 175-190.

[34] Mutai, A. K. & Kimani, E. M. (2019). Effect of accounts payable management practices on liquidity of public technical training institutions in Rift Valley Region, Kenya. International Academic Journal of Economics and Finance, 3(3), 174-186.

[35] Mwangi, L. W., Muathe, S. M. A., and Kosimbei, G. K. (2014). Effects of Working Capital Management on Performance of Non-Financial Companies Listed in NSE, Kenya. European Journal of Business and Management, 6(11), 195-205.

[36] Myers, S.C. (2001) Capital Structure. Journal of Economic Perspectives, 15(2), 81-102.

[37] Myers, S.C. and Majluf, N.S. (1984) Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have. Journal of Financial Economics, 13(2), 187-221.

[38] Natsir, K., & Yusbardini, Y. (2020). The Effect of Capital Structure and Firm Size on Firm Value through Profitability as Intervening Variable.

[39] Nduati, N. W. & Wepukhulu, J. M. (2020). Effect of equity on financial performance of saving and credit co-operative societies in Nairobi County, Kenya. International Academic Journal of Economics and Finance, 3(6), 197-209.

[40] Njuguna T. (2015). Effect of liquidity management on profitability of cement manufacturing firms in Kenya. Unpublished Master of Business Administration Project, University of Nairobi.

[41] NSE (2020). NSE audited results 30th June 2020. https://www.nse.co.ke/financial-results/

[42] NSE (2021). NSE audited results 30th June 2021. https://www.nse.co.ke/financial-results/

[43] Nzau M. M., Kung'u J. N. and Onyuma S. O. (2019). Effect of bond issuance on financial performance of firms listed on Nairobi Securities Exchange. International Journal of Business and Management Review ,7(8),16-25,

[44] Oketah, F. O. and Ekwuoru, A. C. (2020). Determinants of equity of quoted manufacturing firms in Nigeria. International Journal of Management, Social Sciences, Peace and Conflict Studies, 3(1), 90 -104.

[45] Omai M. D., Memba F. S. and Njeru A. G. (2018). The Effect of Share Capital Finance On Profitability of Petroleum Marketing Firms in Kenya, International Journal of Economics, Commerce and Management, 6(1),410-422

[46] Outecheva, N. (2019). Corporate Financial Distress: An empirical analysis of distress risk, dissertation no. 3430, the University of St.Gallen Graduate School of Business Administration, Economics, LawandSocialSciences(HSG), http://www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/3430/$FILE/dis3430.pdf.

[47] Ratri I. N. (2021). The effect of liquidity risk on bank performance: moderating effect of board size and board meeting. Journal of theory and applied management 14(3), 347-358.

[48] Reschiwati, R. Syahdina, A. and Handayani S. (2020). Effect of liquidity, profitability, and size of companies on firm value. topíay Praxis Latinoamericana, 25(6), 325-332.

[49] Salman A. (2019). Effect of capital structure on corporate liquidity and growth: Evidence from Tobacco Industry in Pakistan. Academy of Strategic Management Journal. Research Article, 18(2), 1-20

[50] Šarlija, N. and Harc, M. (2012). The impact of liquidity on the capital structure: a case study of Croatian firms, Business Systems Research ,3(1), 30–36.

[51] Šeligová, M. (2017). The Impact of Funding Sources on Corporate Liquidity in Energy Sector in the Czech Republic.

[52] Shahar, W. S. S., Shahar, W. S. S., Bahari, N. F., Ahmad, N. W., Fisal, S. and Rafdi, N. J. (2015). A review of capital structure theories: trade-off theory, pecking order theory, and market timing theory. In Proceeding of the 2nd International Conference on Management and Muamalah, 16th-17th November, e-ISBN: 978-967-0850-25-2

[53] Shubita, M. F., and Alsawalhah, J.F. (2012). The Relationship between capital structure and profitability. International Journal of Business and Social Science, 3(16), 33-44.

[54] Titman, S. (2002). "The Modigliani and Miller Theorem and the Integration of Financial Markets". Financial Management, 31 (1),101–115.

[55] Wambui D. N. and Muturi W. (2014). Effect of Financing Decisions on Liquidity of Listed Commercial Banks in Kenya, International Journal of Science and Research, Volume 3 (2), 1-4.

[56] Wamugo M., Makau S. M. and Kosimbei G. (2014). Effects of Working Capital Management on Performance of Non-Financial Companies Listed in NSE, Kenya. European Journal of Business and Management, Vol.6, No.11, 2014

[57] Zeidan, R. M.; Galil, K. and Shapir, O. M. (2018). "Do Ultimate Owners Follow the Pecking Order Theory? Quarterly Review of Economics and Finance, Forthcoming, 67(C), 45-50.

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