CAPITAL STRUCTURE, FIRM SIZE, LIQUIDITY AND FINANCIAL PERFORMANCE OF NON-FINANCIAL FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

KERONGO MAATWA MESHACK

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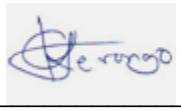
DECLARATION

This thesis is my original work and has not been submitted to any other University for an award of a degree

Signature:  Date: 20/06/2022

Meshack M. Kerongo

D80/50385/2016

Declaration by supervisors

This thesis has been submitted for examination with our approval as university supervisors

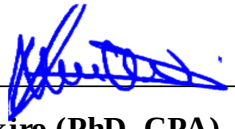
Signature:  Date: June 21, 2022

Dr. Winnie I. Nyamute (PhD, FCPA)

Senior Lecturer, Department of Finance & Accounting

Faculty of Business and Management Sciences

University of Nairobi

Signature:  Date: 21/06/2022

Dr. Kennedy Okiro (PhD, CPA)

Senior Lecturer, Department of Finance & Accounting

Faculty of Business and Management Sciences

University of Nairobi

Signature: Duncan Elly Date: 28/06/2022

Dr. Duncan Elly Ochieng (PhD, CIFA)

Senior Lecturer, Department of Finance & Accounting

Faculty of Business and Management Sciences

University of Nairobi

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ABBREVIATIONS AND ACRONYMS

AT	Asset Turnover Ratio
ARM	Athi River Mining
ASE	Amman Stock Exchange
CBK	Central Bank of Kenya
CBR	Central Bank Rate
CMA	Capital Markets Authority
CS	Capital Structure
E7	Emerging 7 (Economic Platform)
EPS	Earning Per Share
FP	Financial Performance
FS	Firm Size
G7	Group of 7 (Economic Platform)
GEMS	Growth and Enterprise Market Segment
IT	Information and Technology
KASIB	Kenya Association of Stock Brokers and Investment Bankers
KSA	Kingdom of Saudi Arabia

LQ	Liquidity
LTD	Long-Term Debt
MFI	Microfinance Institutions
NSE	Nigerian Stock Exchange
NSE	Nairobi securities Exchange
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
RSE	Rwanda Stock Exchange
SMEs	Small and Medium-sized Enterprises
SPSS	Statistical package for social sciences
SSE	Shanghai Stock Exchange
ST	Short Term Debt
TD	Total Debt
TSE	Teheran Stock Exchange

ABSTRACT

The purpose of this study was to establish the relationship among capital structure, firm size, liquidity and financial performance of non-financial firms listed in the Nairobi Securities Exchange. The study first explored the relationship between capital structure and financial performance. The study then explored the moderating and intervening variables on this relationship. The joint effect of all these variables was also tested. The intervening variable liquidity had two indicators; asset liquidity and temporary investments. The moderating variable firm size had two indicators; total asset and total sales. Liquidity had two indicators asset liquidity and temporary investments. Asset liquidity was measured by current assets to current liabilities. Temporary investment was measured by the ratio of temporary investments to total assets. Capital structure had financial leverage as the indicator. Financial leverage is operationalized by debt-to-equity ratio. Financial performance was measured by Tobin's Q. The study was anchored on the capital irrelevancy theory, the pecking order theory, the tradeoff theory, the agency cost theory and the information signaling theory. The study used secondary panel data which was obtained from 53 nonfinancial firms listed on the Nairobi Securities Exchange. This study is anchored on a positivism research philosophy because it is based on existing theory and it formulates quantitative hypotheses to be tested. Correlational descriptive research design is used to describe the relationships as they exist between specific variables. Secondary data was for the period 2010 to 2017. Data was analyzed using descriptive statistics, multiple and simple regression analyses. The findings indicate a positive statistically significant effect of capital structure on financial performance. Liquidity has a statistically significant positive intervening effect on the relationship between capital structure and financial performance. Furthermore, firm size has a positive moderating effect on the relationship between capital structure and financial performance. These findings are inconsistent with the capital irrelevance theory. Conversely, these findings seem to support the tradeoff theory and the pecking order theory. The study concludes that firms should strive to increase their leverage since it has a statistically significant positive effect on the financial performance of the nonfinancial firms listed on the NSE. Similarly, firms should increase their liquidity by enhancing financial leverage which; according to the findings in this study if increased leads to increased financial performance. Firm managers should seek to grow their firm sizes. This is because larger firms have consistently increased the use of debt in their capital structure. Lenders often perceive larger firms as less risky consumers of credit because of their superior collateral structure. The study, therefore, recommends that firm managers, shareholders, practitioners, the government and other regulators should ensure that they advise and embrace the best firm financing option that helps improve firm financial performance thereby enhancing shareholders value. Further research needs to be conducted that involves the use of accounting-based measures of financial performance to bring a comparison on the study results obtained.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Capital structure is an intensely controversial issue in finance (Myers, 2001). This is due to differences that exist in the effect of capital structure on firm value and financial performance. According to Modigliani and Miller (1958) theorem, a firm's level of debt or equity is inconsequential economically. This is due to corporate tax shield resulting from debt financing and increases in the cost of equity financing. The increased cost of equity financing leads to an increased cost of capital. Modigliani and Miller in their study discussed two companies that have various structures of capital, with one having debt financing and the other equity financing. Modigliani and Miller gave a conclusion that the decisions undertaken by firm managers on firm financing do not have any implication on their financial performance hence their market value. This is due to the assumptions that the authors made such as the nonexistence of taxes, the existence of a perfect market, no transaction and bankruptcy costs. Substantially, M&M theoretically opine that the cash flow expected is proportionally divided between investors in the firm in an endeavour to comply with the capital structure targets, whereas the share-out does not affect the firm's value (Khan, 2021).

This dimension has however been opposed through several studies which argue that debt levels possess non-neutral impacts on the performance and behaviour of the firm. This because debt is tax exempt and therefore it tends to lead to increased profitability of firms. Kosimbei *et al.,* (2014), argued that in Kenya failure among corporates has an association with the behaviour of firm financing. Monumental firm revival efforts have been made to grow the failing firms.

Largely those efforts have been aimed at firm financing restructuring. This is to help enhance firm financial performance. Investors and management face decisions on arriving at the capital structure that is optimal for firms and on how short-term and long-term decisions on capital structure affect financial performance. This is because short-term firm financing is deemed to be beneficial to startup firms as compared to long-term. According to Harris (2017), higher firm financial performance is realized at higher levels of debt. Increased leverage leads to tax exclusion on interest paid on debt. This directly influences firm profitability hence financial performance. Simerly and Li (2000) on the contrary opine that debt presence in a firm's capital structure causes decreased financial performance. This is due to increased interest repayments and the risk of default costs that ultimately causes a decrease in firm financial performance.

Nonfinancial firms financing choices menu is broad due to the fact that they face fewer regulations on the adopted option form of firm financing. Financial firms for instance commercial banks face restrictions form the central bank on debt financing. Therefore, nonfinancial companies' capital structure can relatively be adjusted at a lower cost compared to financial firms (Myers, 2001). Nonfinancial firms also face liquidity problems in meeting their short-term financial obligations. This is because of the diversity of business activities in which nonfinancial firms are involved that exposes them to high levels of illiquidity. Illiquidity is more manifest in larger firms than in small ones because of increased short-term financial obligations associated with large firms. According to Frieder and Subrahmanyam (2005), the low liquidity levels can be attributed to increased cash outflows in the form of debt repayments. A firm with high liquidity levels can deal with contingencies that are unexpected and work during periods of low earnings on their obligations. Large firms deal with liquidity challenges by holding onto liquid assets and increasing the amount of current assets in their books of account (Liargovas

&Skanda lis, 2008). Firms that have the best firm financing tend to have good working capital that helps promote firm liquidity and therefore increased financial performance. This improved financial performance is attributable to reduced costs resulting from short-term debt defaults. Alfi and Safarzadeh(2016) opine that decreased liquidity levels reduce the financial performance of nonfinancial firms.

A highly levered firm possesses a higher level of debt. Thus, highly levered firms take greater risk compared to firms with a lower level of debt. This is because highly levered firms seek for high return on investments to repay their debts and avoid higher default costs. The increased risk of default is associated with increased debt financing. According to Pandey (2004), large nonfinancial firms tend to be highly leveraged to avail finances to help them meet their various operations. The ability to meet short-term obligations is a sign of high liquidity in firms. Increased leverage helps in enhancing improved financial performance. Therefore, firm managers make effort to help make the best firm financing decisions. Muigai and Muriithi (2017) opine that firm size moderates capital structure and financial performance relationship of companies. The authors argue that as firm size increases the relationship between capital structure and financial performance is strengthened. Deesomsak *et al.,* (2004) argue that firm financing structure depends on firm characteristics amongst which are size and total sales. Company size influences financing decisions firm managers make by encouraging them to make use of more debt than equity to grow firm profitability. This is due to interest tax advantages obtained through debt financing. Small entrepreneurial firms for instance utilize convertible debt, private equity, and short-term bank loans. Companies that are larger make use of issued outside equity and public debt.

According to Heshmati(2008) firms that are listed have the greatest accessibility to the equity market, compared to firms that are smaller in size due to the low fixed costs. Consequently, firm size and the debt level have a negative relationship. Fama and Jensen (2003) also opine that companies that are bigger in size make use of equity financing as compared to debt firm financing. This is due to increased costs associated with transactions and the problem of information asymmetry that is less manifested in bigger firms in comparison to smaller companies. There is less willingness from financiers to undertake capital financing for smaller companies (Ferri & Jones, 2009). Reluctance on the part of small companies to seek external financing is one of the limitations associated with market access. There is a minimum volume of capital requirement in a majority of cases needed in firms to enable them to get external funding (Cassar & Holmes, 2003).

Increased profitability in highly leveraged nonfinancial firms gives a signal for more use of debt financing. This is because highly levered firms offer signals to investors on firms' stability and rosy future growth prospects. This is meant to help attract more investment. Increased leverage is meant to enhance the continued enjoyment of the tax advantage that large nonfinancial firms obtain due to debt financing. This, therefore, helps strengthen the relationship between capital structure and financial performance. Large nonfinancial firms tend to employ increased leverage to maximize benefits associated with tax exemptions as compared to financial firms. The benefit emanating from debt financing is because debt interest is tax-exempt (Hong&Song, 2006). Large nonfinancial firms have fewer chances of facing bankruptcy as they tend to be well-diversified, unlike the financial firms that tend to face overregulation. Therefore, nonfinancial firms tend to be highly leveraged to help improve their financial performance. Furthermore, large nonfinancial firms can easily raise funds from debt markets as compared to smaller companies that tend to

experience difficulties in raising their capital from the stock exchange (Chen, 2004). This is due to the high investor confidence that is associated with large firms.

Embracing more debt than equity financing in nonfinancial firms can lead to increased liquidity. This is because high leverage particularly that which is short-term can enhance the availability of finances that can help nonfinancial firms meet their short-term financial obligations. Furthermore, firms that are highly leveraged tend to hold highly liquid assets to reduce the risk of bankruptcy. Increased liquidity levels are likely to affect the performance of nonfinancial firms. High liquidity enables firms to meet short term financial obligations that ultimately lead to higher profitability. According to Ross (1977), long-term debt that is at high levels signifies higher quality to investors who respond by investing in the firm; effectively raising the cash flow levels. Frieder and Subrahmanyam (2005) verifying the agency hypothesis of capital structure as elucidated by Jensen and Meckling (1976), attributes the low liquidity levels to increased cash outflows in form of debt repayments. The study findings are supported by the agency conflict hypothesis that provides for increased financial risk as a result of debt financing. This results in a financial burden rise (caused by interest payments from loans) to the company. Consequently, this causes decreased levels of free cash flows. According to Williamson (1988) liquidity is considered as an intervening variable linking capital structure and financial performance of the firm. Companies that are highly leveraged tend to be more liquid. This because these highly leveraged firms seek to avoid costly defaults associated with debt financing. Williamson (1988) further contends that the logic for a positive impact of leverage on asset liquidity lies in the notion that assets that are not so liquid attract higher costs which increases costs of liquidation, debt and bankruptcy.

Firm size has a likely influence on the financial performance of nonfinancial companies (Mahmud, 2003). Firm size influences capital financing decisions embraced by a firm. Consequently, capital financing decisions affect the financial performance of a firm. Wahome *et al.*, (2015) indicate that the use of leverage in financing operations is more common among large firms compared to small ones. Among the reasons identified for limited use of leverage among small firms include asymmetric information (adverse selection), higher bankruptcy costs, huge costs of resolving informational asymmetries, and greater agency costs. Dogan (2013) argues that a positive relationship exists between indicators of firm size such as company assets, number of employees and sales with company profitability. Therefore, firm size moderates strongly the relationship between capital structure and nonfinancial firms' financial distress. This is premised on the assumption that small companies are largely disadvantaged over their bigger rivals.

NSE listed firms tend to be bigger in size and have access to various forms of financing as compared to those that are not listed. Consequently, due to the availability of various forms of financing most NSE listed nonfinancial firms tend to be highly leveraged due to their ability to access cheaper debt financing. Therefore, this causes these firms to hold onto highly liquid assets to reduce bankruptcy risk associated with debt financing. NSE listed firms tend to enjoy the benefits of economies of scale and large scope. This is because these firms tend to be bigger in size as compared to those that are not listed. These firms also tend to embrace specialization and have a higher bargaining power than small companies that are largely composed of those that are not listed. Therefore, smaller companies are less profitable than big companies (Mugai & Muriithi, 2017). Despite these advantages that are enjoyed by NSE listed nonfinancial firms, the devastating effects of financial distress among non-financial firms listed in Kenya have been highlighted over the past few decades. This is evidenced by the fact that many firms have been

placed under receivership, undertaken financial restructuring, or been delisted from NSE altogether. Such firms include: Kenya Airways, Home Africa, ARM cement and Transcentury (Bitok *et al.,* 2019).

There are differences in the operationalization of firm financial performance between accounting profitability measures including return on equity (ROE), return on sales (ROS) and return on assets(ROA) or stock market-based measures like market return and Tobin's Q. Majority of the studies make use of accounting profitability measures when studying on the financial performance of listed firms ignoring stock-based measures like market return and Tobins' Q, that comprehensively evaluates firm financial performance. (Hoskisson e*t al.,* 1999; Hult *et al.,* 2008; Combs *et al.,* 2005).

The relationship between capital structure and financial performance and how it is intervened by liquidity and moderated by firm size is anchored among others the trade off theory. The trade off theory by Myers (1984) suggests that the trade-off between the debt benefits and the cost of debt influences firm financing. Other theories in support of capital structure and firm financial performance relationship include the capital irrelevance theory by Modigliani and Miller (1958), the agency cost theory by Jensen and Meckling (1976), the information signaling theory by Ross (1977), and the Pecking order theory by Myers and Majluf (1984).

There is a decline in the financial performance of non-financial firms globally in the recent past decade. Most of the firm failures have been associated with poor capital structure choices that ultimately affect financial performance. Several companies in various stock exchanges have been delisted (Tian & Zeitun, 2007). The findings of various studies show that the environment or country from where data is collected interestingly intervenes in the relationship between capital

structure and financial performance. For instance, there is a positive relationship between firm size and book leverage for firms in the United Kingdom Ozkan(2001) and in Japan Mahmud(2003), but a negative relationship with book leverage for companies in Nigerian (Ezeoha, 2008).

The US non-financial firms' balance sheets were affected significantly during the 2007 financial crisis. There was a decline in the value of the assets that eroded the net worth of borrowers. This caused a reduction in the collateral value and subsequently a decline in the borrowed amounts (Brunnermeier, 2009). In Egypt Ebaid(2009) posit that there is little impact of capital structure on a company's financial performance whereas a negative relationship exists between debt ratio and firm financial performance in Nigeria (Muritala, 2012). In Ghana, the financial structure components have a significant and positive relationship with the value of the firm (Antwi *et al.,* 2012).

Financial leverage in Pakistan companies has a negative, significant relationship with financial performance (Khalique *et al.,* 2012). This indicates that that agency issues may cause the companies to use higher than appropriate levels of debt in their capital structure. This over leveraging among firms may grow the influence of the lenders that limits the ability of managers to undertake effectively the operations of firms, therefore, hurting the financial performance of companies (Nadeem & Wang, 2013). Bear Stearns near-collapse and Lehman Brothers failure in the US is characterized as to have resulted from shocks associated with liquidity that had a greater impact on non-financial companies' financial performance.

1.1.1 Capital Structure

Capital structure refers to the manner through which a corporation does the financing of its operations. Firms have several means through which they can finance their investments. Firm managers have to seek firm finances that help increase shareholders' value. According to (Modigliani & Miller, 1958) capital structure is the combination of debt and equity. Equity financing is whereby corporations raise capital by selling company shares to investors in return for investment. Debt form of financing is when a company seeks working capital money or capital expenditures. This can be by selling bills, bonds, or notes to institutional or individual investors. In return for lending the money, institutional or individual investors become creditors and receive a commitment to repay the principal and interest on the debt. Myers (2001) defines capital structure as the combination of debt, equity and other financial instruments. These financial instruments are in the form of debt.

Ramji and Gwatdzo (2012) define capital structure as the composition of debt, preferred and common stock used for financing the firm's operations and total assets. Preferred and common stocks are a form of equity financing for firms. According to Pandey (2009), capital structure is the means through which a firm employs any one form of financing in the others place regarding the dichotomous sources of debt and equity. Therefore firms have at their disposal dichotomous sources of firm financing that are instrumental for undertaking their various investment activities. How decisions on firm financing are taken by firm managers to a large extent affects firm value. Firm financing matters a lot because of inherent differences in information, taxes and agency costs that have a great bearing on the company's financial performance (Myers, 2001).

The diverse studies of Modigliani and Miller (1963; 1958) on capital structure irrelevance and advantages emanating from tax shield led to the advancement of other models. There are conditional theories that exist. For instance, the trade off theory asserts that companies seek levels of debt that balance the tax advantages of that additional debt taken against the costs associated with the possible financial distress. According to the pecking order theory a company is willing to borrow rather than issue equity when there is insufficient internal cash flow to fund capital expenditures. The debt amount will be indicative of the company's cumulative need for external financing. Optimal capital structure theories have variations concerning their interpretations emphases. Emphasis by the trade off theory is on taxes, differences in information are emphasized by the pecking order theory and an agency cost is emphasized by the free cash flow theory. The diverse studies of Modigliani and Miller (1963; 1958) on capital structure irrelevance and tax shield advocate for borrowing as opposed to issuing equity when the capital expenditure cannot be adequately funded by the internal cash flows. They further contend that no universal theory exists on debt-equity choice and none is expected. Myers (2001) opines that the trade off theory depicts controlled borrowing by taxpaying firms (Muigai, 2016).

The decision on capital structure is an important issue in firm financing. Firm managers always seek to make the right decisions on firm financing. Highly leveraged firms tend to experience increased financial performance due to high interest tax advantage. According to Jerenias(2008), higher levels of debt cause an increase in financial performance. Highly leveraged firms tend to have increased efficiency. This efficiency can be attributed to firm managers who are under pressure from debt holders having high expectations. The managers, therefore, tend to make capital structure decisions that result in investments that have increased positive cash flows to the firm. Margaritis and Psillaki (2010) for instance posit that higher leverage leads to improved

efficiency that ultimately has a positive effect on the financial performance of the firm. Capital structure constitutes debt and equity as the key components (Margaritis & Psillaki, 2007). According to Myers (2001), debt ratios in the established U.S. public corporations have variations within apparently homogenous industries. There are variations too over time, apparently even with taxation and agency problems.

High leverage possesses non-neutral impacts on the performance and behaviour of the firm (Brigham & Ehrhardt, 2012). According to Harris (2017), higher firm performance is realized at higher levels of debt. Increased leverage leads to tax exclusion on interest paid on debt. This directly influences firm profitability hence financial performance. Simerly and Li (2000) on the contrary argue that the presence of debt in the firm's capital structure causes decreased financial performance. This is due to an increase in the cost of equity that causes a rise in the cost of capital which ultimately causes a decrease in firm financial performance.

Firm managers embrace equity finance to give a signal to the investors about the future company prospects. Firms that have an increased level of equity in their capital structure tend to attract investors thereby further helping grow their working capital. Berger and Bonaccorsi Patti (2006) however opine that lower equity to capital ratio and higher leverage is linked with enhanced profit and higher efficiency. This is due to tax advantages that are associated with high debt financing. According to Pandey (2015), determination of capital structure can be done using a mixture of capital which entails preference shares, debentures among others. Capital structure influences firm value and performance by limiting conflicts of interest between shareholders and debt holders and limiting bankruptcy and distress costs (Bhagat & Jefferis, 2002).

Capital structure with an increased level of financial leverage incidentally exposes corporate firms to financial distress at higher levels. Highly leveraged firms face a high bankruptcy risk that often results in decreased financial performance (Baimwera &Muriuki, 2014). Further, Muigai (2016) observes that utilizing excessive debt financing in corporate operations has an effect that is negative but significant on non-financial firms' financial distress. Cyril (2016) contends that capital structure has an effect on both ROA and AT of the conglomerates. Nevertheless, the capital structure does not affect the ROE and EPS of the conglomerates. The study concluded that an in-depth analysis of business factors that affect a particular industry should be considered. This is to obtain the benefits of the debt-equity mix. Birru (2016) on the contrary argues that financial performance is negatively and significantly related to capital structure.

Capital structure decisions made by firm managers may also be well explained theoretically. Under market conditions that are deemed to be normal, companies tend to follow the standard pecking order theory. Firms prefer external equity if they seek external financing when external equity is less expensive than debt. Furthermore, the issuance of debt becomes the first choice, when debt is cheap. Companies may issue debt or equity even when they don't have immediate financing needs. These firms don't have to make capital structure adjustments, because the issuance of overvalued securities is a positive NPV project.

Gupta *et al.*, (2014) observe that financial performance has a significant relationship that is positive and significant with debt financing but negative and significant with equity capital. The result implies that the highly geared companies exhibit increasing financial distress while firms with high levels of equity are more financially sound. This finding mirrors the result by Krishnan and Moyer (1997) who argue that there is a negative and significant impact of total debt on

return on equity (ROE) among corporations. Shehla and Akhtar *et al.,* (2012) on the contrary opine that a relationship that is positive and significant exists between financial leverage and financial performance, corporate growth and firm size.

The debt-equity ratio has implications for the dividends and risk of shareholders. This affects the market value of the company and the cost of capital (Pandey, 2007). (Berger &Bonaccorsi di Patti, 2006) examined capital structure and firm performance. This postulated a new approach to testing the agency theory and its application to the banking industry. (Berger & Bonaccorsi di Patti, 2006) employed a simultaneous-equations model. This model gives an account of the reverse causality from capital structure to performance.

Nazir and Afza (2008) and Chiou *et al., (*2006) measure leverage using the debt ratio which is calculated as total liabilities divided by total assets. Apphumani(2008) measures leverage as total long-term debt capital divided by equity. Capital structure constitutes debt and equity as the key components (Margaritis & Psillaki, 2007). According to Pandey (2005), determination of capital structure can be done using a mixture of capital which entails preference shares, debentures among others. Capital structure in this study is operationalized using financial leverage measured by the debt to equity ratio.

1.1.2 Firm Size

Firm size is defined as employees per establishment, sales per firm, employees per company and value-added per firm (Amato & Wilder, 1990). Baker and Hall (2004) define firm size as the production capability and potential possessed by a company or the diversity of services offered by a company to its customers. According to Velnampy and Niresh (2014), firm size is the firm's production capability and the firm's preparedness to provide concurrent services to its customers.

Firm size can be categorised in the form of firms' ownership structure. There is a necessity to treat large firms' subsidiaries, SME, or micro categories in accordance to the number of employees or turnover differently from independent micro-firms or SMEs. This uses the net assets employed by the firm to measure size. According to Heshmati and Kim (2011) firms that are listed have access that is easier to the equity market, compared with the smaller firms, because of low fixed costs. Information asymmetry and transaction cost problems are much diminished in big companies compared with small companies. Consequently, large companies tend to raise funds from equity rather than debt. Smaller firms do not agree to offer small firms' capital. Furthermore, for smaller companies, the price of the capital offered is too high. Reluctance on the use of external financing is the market limitations on market access. Minimum capital is necessary in most cases to raise external funds which in most cases are out of reach of the small firms.

Firm size is considered as an explanatory predictor for variations in firm leverage. Larger companies are more likely than smaller firms to take on more debt. Eriotis *et al., (*2007) argue, firstly, that larger companies can engage in negotiations for loans more favourably. This is to enable them to take on more debt financing at lower interest rates. Secondly, due to the fact that bigger companies are less risky borrowers as compared to smaller ones. Consequently, there is a willingness from banks to extend loans to big firms. This lowers their default probability. Therefore, a positive relationship is likely to be observed between size and leverage. Drobetz and Wanzenreid 2006) on the contrary argue that large companies have sufficient analyst coverage and are subject to information asymmetries. Hence, they should access equity markets with relative ease. Moreover, the fixed costs associated with equity issues should be smaller for large firms. On that account, size should be inversely correlated to leverage.

According to Rajan and Subramanian (2005) when there is growth in company value; the direct cost of bankruptcy to the value of the company ratio would decline. The effect of these unexpected bankruptcy costs might be little on the borrowing decisions of large firms. This empowers them to take on more leverage. Smaller companies on the other hand are faced with a different reality in raising the long-term debt. The main reason is not information asymmetry, but the negative, significant correlation between firm size and the bankruptcy probability (Hall *et al.*, 2004). The explanation could be that large companies tend to have more diversification; consequently, they are less exposed to insolvency (Titman & Wessels, 2008). Chittenden *et al.*, (2006) opine that in large firms the monitoring costs are lower than in small companies. They indicate that the problems of adverse selection and moral hazard reduce reasonably in companies that are large in size. Therefore, utilizing debt as external funding is much better in firms that are listed than SMEs.

Nzeoha (2008) opined that the size of a company has a significant role in the determination of the relationship the company has in and out of the firms' environment of operation. The bigger the company, the better stakeholders' influence. Another thing is the ever-increasing influences of multinationals and conglomerates in the current local and global economies. The location of these conglomerates and multinational corporations portends the role that firm size has within the corporate environment. Buttressing the position of size among corporates, Rajan and Zingales (2001) opine that an aspect that is fascinating on economic growth is that a bigger part of it plays out through the growth in the size of corporates.

Firm size vitally influences capital structure (Abor & Biekpe, 2006; Abor & Biekpe, 2009; Amidu, 2007; Booth, Aivazian, Demirguc¸-Kunt & Maksimovic, 2001). Firm size's moderating role as a variable is routinely employed in empirical corporate finance studies. Several

theoretical reasons exist as to why firm size has a relationship with capital structure; these include economies of scale in reducing information asymmetry, transaction costs and access to the market (Krasauskaite, 2011). For instant, in the presence of non-trivially fixed costs of raising external funds, bigger companies have cheaper access to outside financing for each amount borrowed (Leary & Roberts, 2004). Bigger companies are more likely to be well diversified in their financing sources. Alternatively, size may be a proxy for the default probability, for it is sometimes contended that larger firms are more difficult to fail and liquidate (Duffie, 2005). Firm size may also be a proxy for firm assets volatility, for small companies are more likely to be companies that are growing and thus in industries that are fundamentally unpredictable. One other explanation is the level of distortion and the degree of information asymmetry between capital markets and insiders which may be lower for larger companies because they are faced with more examination by investors who are ever-suspicious (Fama & French, 2002).

Firm size is very significant in determining firm financial performance. Firm size is deemed to promote and grow firm financial performance (Dogan *et al.,* 2016). Leibenstein (2004) argues that firm size can lead to inferior performance due to formalized procedures and market inefficiencies. Larger companies can also attract exemplary human resources that will significantly contribute to their financial performance. Bigger companies are not likely to face bankruptcy since they undertake massive diversification as compared to smaller firms. Consequently, low bankruptcy levels assist big companies to finance their operations using more debts. Among other benefits accrued by larger firms is the low level of information asymmetries and ease in obtaining financial resources which cause increased financial performance of the companies (Gonenc, 2005).

In the alternative, smaller companies are more opaque as compared to larger firms in terms of information possessed by these firms. Decisions on firm financing might be affected by the transaction costs that are associated with a certain type of firm financing. As Titman and Wessels (1988) postulate that transaction costs are a function of scale. Therefore, relatively increased costs of transactions effectively may make some options of financing unavailable for companies that are smaller in size. Hussain and Matlay (2007) opine that smaller companies seek external financing at the time when their internal sources are exhausted. Companies that are smaller in size seek to meet their financial needs with a pecking order of personal and retained earnings, debt, and issuance of new equity. These theoretical reasons posit that smaller companies should seek to have lower levels of debt. The assumption is that firm size should have a relationship that that is positive with company leverage. The first and foremost reason is that bigger companies tend to have volatile cash flows and that benefit from tax shields maximization by taking on more debt. The pecking order theory also asserts that larger companies tend to attract more analysts who might give information about the firm because of their increased prospects. Consequently, this reduces information asymmetry with the market. This makes it possible for the company to gain access to equity financing without the value of the company being ruined.

Researchers attribute firm size and financial performance relationship to the fact that there is often a perception by lenders of bigger companies tending to be less risky credit consumers due to their superior collateral structure (Mule *et al.,* 2015). This contrasts to smaller entities that possess inferior tangibility. These smaller entities, therefore, face credit rationing. Taking into consideration the advantage that bigger companies have on access to credit, hypothetically the expectation is that they are meant to have better performance and therefore increased financial

performance and diminished financial distress in comparison to companies that are smaller in size. Bigger companies can benefit from economies of scale, larger scope, more specialization and stronger bargaining power. Therefore, smaller companies must be lesser profitable than larger companies (Mugai &Muriithi, 2017). There might be a tendency for bigger companies to issue more debt than equity. This may cause effects that are negative such as overleveraging resulting in financial distress (Gonenc, 2005). This assertion is supported by Khan (2012) and Maina and Ishmail (2014) who find a relationship that is negative between firm size and firm value as operationalized by Tobins'Q. The authors argue that big firms have inefficiency problems causing them to have dismal financial performance.

Firm size is determined using the logarithm of total assets. This is computed by adding fixed assets and current assets. Firm size furthermore is measured using the turnover ratio which is average sales divided by the firm's total assets (Rajan & Zingales, 2001). Boyd and Runkle (2003) argue that a bigger company is more cost-efficient and less likely to fail. Firm size can also be operationalised in many ways: assets, employees and sales. Firm assets or sales are the preferred measures of size (Mainelli & Giffords, 2010).

1.1.3 Liquidity of Firms

According to Horsefield and Whittlesey (1945) liquidity refers to the speed and certainty with which companies meet their short-term obligations usually in a period of less than a year. Firms have obligations in terms of operations that can include repayments made to debt holders. Corporate assets have to be highly liquid to avoid costly defaults that may result from firms holding onto illiquid assets. The time in which these assets are liquidated is critical in meeting the demands of the debt holders to avoid the costs associated with delays that accompany the

liquidation of illiquid firms' assets. Mahavidyalaya *et al.,* (2010) define liquidity as a firm's capability to meet short-term financial obligations through conversion of assets into cash without incurring any losses. On the other hand, Dalgaard (2009) defines liquidity as the extent to which a security or asset can be purchased or sold without influencing the price of the asset.

Williamson (1988) offers an argument that low liquidity of assets leads to an increase in liquidation costs for financiers. Therefore, a relationship exists between high leverage and high liquidity. This leverage and liquidity relationship holds only if the liquidation value expected is less than the value of debt, such as when there are fewer assets to liquidate and the proceeds of the liquidation are not sufficient to make a full value of debt. Proceeds from liquidation and liquidity of assets, therefore, are more likely to determine the payout expected to debt holders if assets are fewer relative to the value of debt. The argument by Shleifer and Vishny (1992) is that the positive asset liquidity and leverage relationship is caused by firm managers who have control of the expected costs of distress and liquidation. Nevertheless, the marginal effect of asset liquidity on the costs of distress expected weakens if there is a low probability of distress. Thus, managers will not reduce leverage if the probability of distress is diminished in their firms, regardless of asset liquidity. This causes reduced expected costs of distress. In such circumstances, the asset liquidity and leverage relationship become weak or insignificant. This implies that there is a weaker (stronger) relation between asset liquidity and leverage for firms with a lower (higher) default probability.

Firm liquidity is a major determinant of the financial performance of a firm. Firms that hold to highly liquid assets can avoid high costs associated with liquidation that ultimately affects financial performance. Furthermore, companies that hold to highly liquid assets can avoid costly defaults to debt holders when repayments of those debts become due. According to Bhunia

(2010), liquidity is the capability of a firm to meet its short-term obligations. These obligations are in the form of short-term liabilities. Common types of short-term debt include short-term bank loans, accounts payable, wages, lease payments and income taxes payable. Therefore, liquidity has a vital role in the successful functioning of a business company. Mwangi and Iraya (2014) further stated that liquidity as a term is used to describe the ease with which conversion of assets to cash takes place. Liquid assets are important to have in crisis times or during an emergency. This is because their cash conversion is easier in comparison to illiquid assets. Illiquidity can cause money to be tied up in systems that may pose difficulties to cash out of and even more challenging to assess actual cash value. During periods of emergency, large financial institutions shut down, thereby posing difficulties for people to gain access to the cash they require to buy essentials such as food, gasoline and other emergency supplies.

Three liquidity ratios are employed for this purpose. These include the current ratio, the quick ratio and the capital ratio. Liquidity not only assists to ensure that a person or business has a reliable supply of cash always close at hand, but it is a powerful tool whenever it comes to determining the future investments' financial health (Clementi, 2001). Liargovas and Skandalis (2008) argued that a company can use liquid assets to finance its investment activities when external financing is unavailable. On the other hand, higher liquidity can allow a company to deal with unexpected incidences and to cope with its obligations during low earnings periods.

According to Siblkov (2009) there exist difficulties in the operationalization of asset liquidity. There is no organized marketplace for corporate assets and no daily observable quotes that estimate liquidity measures that are commonly used in the literature on market microstructure. There is a proposal by Schlingemann *et al., (*2002) however, that proposes a new measure of asset liquidity, the liquidity index. The liquidity index can be estimated in two steps. First, the

industry liquidity index is estimated as the total value of corporate transactions to the total book value of assets in the industry ratio. Second, the firm liquidity index equals the average of the industry liquidity indices of segments' industries, weighted by the segments' total book value of assets. Essentially, there is an assumption of the liquidity index that firm-level asset liquidity depends on the conditions primarily in the company's industry.

The rationale for the liquidity index follows Shleifer and Vishny (1992) and Schlingemann *et al.,* (2002) argument on discounts that sellers have to offer to attract buyers that are diminished in more active markets. That is, buyers tend to be many and the probability for a seller to get a buyer in an industry with several corporate transactions is diminished. A company that wants to sell an asset can ask, ceteris paribus, for an equal or increased price in an industry with more buyers. This increased price translates into reduced liquidation discounts and greater demand that should result in faster asset sales, which signal higher liquidity. Shleifer and Vishny (1992) arguments and evidence in Schlingemann *et al.,* (2002), Maksimovic and Phillips (2001) offer support to the use of the liquidity index.

The liquidity index theoretically has advantages that are practical over other measures of liquidity. Current asset holdings and fixed assets are also measures that are problematic to the firm's assets liquidity. Holdings of current assets even may have a negative relationship with the liquidity of other company’s assets if the firm raises its cash holdings when asset liquidity is reduced to decrease the probability of selling productive assets for cash. Finally, asset tangibility, or fixed assets to total assets ratio, gives no account for the liquidity of the tangible assets for the fact that the firm's intangible assets may be a vital component of overall company liquidity (Siblkov, 2009).

Vishnani and Shah (2007) however, affirm that the most common measures of liquidity are the current ratio and return on investment for profitability. The current ratio is used to test a firm's liquidity, that is, its current or working capital position. This is done by deriving the proportion of the company's current assets available to take care of its current liability. A higher current ratio indicates larger current assets investment. This implies, decreased rate of return on investment for the company, as an excess investment in current assets will not lead to yielding enough returns. A decreased current ratio signifies a smaller investment in current assets that shows a high rate of the company's return on investment as no investment is unused or is tied up in current assets. However, there is consensus in theoretical literature that the higher the ratio, the better financial performance for the firm.

Mwangi and Iraya (2014) state that many of the funding resources are invested in short-term liquid assets. This provides a buffer against liquidity shocks. Rajan (2001) emphasizes that a mismatch in depositors' demand and production of resources force a firm to generate the resources at a higher cost. Liquidity has a greater impact on tradable securities and portfolios. Broadly, it refers to the loss emerging from liquidating a given position. A bank needs to be aware of its liquidity position from a marketing perspective. This helps to expand its customer loans in case of attractive market opportunities (Falconer, 2001). A bank with liquidity problems loses several business opportunities. This places a bank at a competitive disadvantage compared to those of the competitors (Chaplin *et al.*, 2000).

Almajali *et al.,* (2012) found that firm liquidity had a significant effect on the financial performance of firms. Liquidity is essential for a company's existence. Liquidity principally affects financial costs reduction or growth, changes in the sales dynamic, as well as it influences on company risk level. The decisive significance of liquidity means that it is important for

company development and at the same time is one of the fundamental endogenous factors which are responsible for company market position. The significance of liquidity to company performance might lead to the conclusion that it determines the profitability level of a company.

Liquidity is very essential to firms in that insufficient liquidity makes a business fail to meet its payment obligations. This indicates that businesses might face challenges in terms of satisfying urgent obligations financially. This can, in turn, affect the profitability and operations of a company. According to Kimondo *et al.,* (2016) quoted companies should uphold the most favorable liquidity point to maximize the company's profitability and shareholders' wealth. Liquidity is very essential to firms in that insufficient liquidity makes a business fail to meet its payment obligations. This indicates that businesses might face challenges in terms of satisfying urgent obligations financially. This can, in turn, affect the profitability and operations of a company. Liquidity also helps lenders of these firms strive to improve their credit risk management (Tianwei&Paul, 2006). Liquidity is also very essential to firms in that insufficient liquidity makes a business fail to meet its payment obligations. Liquidity for firms is measured using the current ratio, quick ratio, or acid test (Devraj, 2014). Although there is a similarity in the current ratio and quick ratios, there are more provisions given in terms of capacity and precise assessment by the quick ratio on the capability of a firm to pay its current obligations.

1.1.4 Financial Performance

Financial performance is an evaluation of the firm's ability to utilize its current assets while undertaking its daily business activities to generate income (Macleod & Baxter, 2007). Current assets represent all the assets of a company that are expected to be conveniently sold, consumed, utilized, or exhausted through the standard business operations, which can lead to their

conversion to a cash value over the next one-year period. They include cash, cash equivalents, accounts receivable, stock inventory, marketable securities, pre-paid liabilities, and other liquid assets. According to Kajirwa (2015), financial performance is how effectively a firm uses its assets from its principal role of conducting business and generation of revenues. Firm managers make critical decisions on how firm assets can be employed to generate positive cash flows. These decisions involve the risks to be taken and the amount of capital to invest in various projects. Nambiro (2007) defines financial performance as the evaluation of the performance of a firm's operations and policies in financial regard. Birya (2009) defines financial performance as the business' capability to generate liquidity. In other words, financial performance may be used to mean the extent of safety and stability in handling deposited funds (Mutua, 2013).

Financial performance is essential for the growth and expansion of firms. The financial performance of firms indicates the extent to which a firm is utilizing the resources at its disposal in achieving the objectives set by the owners of the company of making them wealthier (Berger &Patti, 2002). Financial performance ratios are used to standardize measurement to enable comparison across the industry. That is, for a similar firm over a period of years or other firms in other industries. Neely (2008) observes that financial performance measures mainly serve three purposes. Firstly, they serve as a tool of financial management, secondly, they serve as major objectives of business e.g. to have a 40% ROA, and lastly, they serve as a mechanism for motivation and control within an organization. Many researchers have used different financial performance measures.

Financial goals drive higher profits, but non-financial help drive companies in their objectives. The non-financial improvements help round out the company's strengths in areas like customer service, product quality and employee satisfaction. These areas create a stronger company as a

whole that can perform better in the market thus increasing profits. A study by Kim, MacDuffie and Pil (2010) observed that focusing on employee satisfaction allows firms to create a workforce of engaged, loyal employees. With increased employees morale, often comes better attendance and effort. By aiming to improve the workplace for employees, firm management should show employees that the firm cares about them more than simply making money. These factors can lead to an increase in the financial performance of firms.

There is no single index to explain firm financial performance. Qualitative and quantitative criteria have so far been provided to evaluate the financial performance of firms. Accounting measures are also used in evaluating firm financial performance. Various studies have used different measures to capture firm financial performance including ROI, ROS, or a combination of both Pegels and Yang (2000), Tobin's Q Kabir and Dey (2012), ROA Liebeskind *et al.*, (2002), market to book value of the equity as well as market share and profitability (Entrialgo *et al.*, 2000). The level of significance in the performance of a financial institution can be measured from both micro and macro perspectives. In the micro perspective, the most fundamental prerequisite is profit as well as the best source of funds. Despite being a result, profits are also a requirement in an era of increasing competition in money markets. The prime aim of financial firms is basically to make a profit (Bobakova, 2003).

The type of financial performance used influences results because accounting and stock-market-based performance measures focus on different aspects of financial performance, and each is subject to particular biases (McGuire, Schneeweis, & Hill, 1986). Accounting-based measures tap only historical aspects of firm performance (McGuire, Schneeweis, & Hill, 1986). Moreover, they are subject to bias from managerial manipulation and differences in accounting procedures (Branch, 1983). Accounting-based financial performance should also be adjusted for risk,

industry characteristics, and other variables (Aaker, 2013).To avoid the problems of accounting-based measures; some authors have used stock-market-based measures of performance. Stock-market-based measures have several advantages over accounting-based measures: they are less susceptible to differential accounting procedures and managerial manipulation and they represent investors' evaluations of a firm's ability to generate future economic earnings rather than past performance. Problems also exist with accounting-based measures of financial performance (Cassar&Holmes, 2003). Ozkan (1985) suggested that the use of market measures implies that investors' valuation of a firm financial performance is a proper performance measure. This study therefore employed Tobin's Q, a stock based measure of financial performance.

1.1.5 Non-Financial Firms Listed at the NSE

Listed non-financial firms have the broadest menu of financing choices and can adjust their capital structures at a relatively low cost (Myers, 2001). Nonfinancial firms face liquidity problems in meeting their short-term financial obligations. This is due to the nature of their operations that are huge and diverse which demand high liquidity levels. Illiquidity is more manifest in larger firms than in small ones because of increased short-term financial obligations associated with large firms. According to Frieder and Subrahmanyam (2005), the low liquidity levels can be attributed to increased cash outflows in the form of debt repayments. Large listed nonfinancial firms have fewer chances of facing bankruptcy as they tend to be well-diversified, unlike the financial firms that tend to face overregulation. Therefore, nonfinancial firms tend to be highly leveraged to help improve their financial performance. Furthermore, large nonfinancial firms can easily raise funds from debt markets as compared to small firms that find it difficult to

raise their capital from the stock exchange (Chen, 2004). This is due to the investor confidence that is associated with large firms as compared to small ones.

Large nonfinancial firms tend to attract investors who are attracted by their size which they consider as a sign of stability. Investors buy the stocks issued by these listed firms to obtain share ownership. According to Heshmati(2008) listed nonfinancial companies have easier access to the equity market, in comparison with the smaller companies, because of low fixed costs. Therefore, there is a negative relationship between the firm size and the debt level. Fama and Jensen (2003) opine that large firms prefer to raise funds from debt rather than equity sources. This is due to increased transaction costs and the problem of asymmetric information that are lesser in large firms in comparison with small firms. Financiers are not willing to offer small firms capital, or the price of the offered capital is too high for small firms (Ferri & Jones, 2009). Another reason, which makes small firms reluctant to use outside financing, is the market access limitations. In many cases, the minimum volume of capital is required to raise external funds (Cassar & Holmes, 2003).

Some nonfinancial firms prefer debt financing to equity because of the inference investor make concerning equity issuance. Most investors view issued shares as being overvalued and therefore not valuable to invest in. According to Myers and Majluf (1984) managers act in the interest of existing shareholders, and refuse to issue undervalued shares unless the transfer from old to new stockholders is more than offset by the net present value of the growth opportunity. This leads to a pooling equilibrium in which firms can issue shares, but only at a marked-down price. Share prices fall not because investors' demand for equity securities is inelastic, but because of the information investors infer from the decision to issue; it turns out that the bad news (about the value of assets in place) always outweighs the good. Some good nonfinancial firms whose

assets-in-place are undervalued at the new price will decide not to issue even if it means passing by an opportunity with a positive net present value. The prediction that a stock issue announcement will immediately drive down stock price was confirmed by several studies, including (Asquith &Mullins, 1986).

Nonfinancial firms listed on various stock exchanges are experiencing declining financial performance and many firms have been delisted from the stock exchange in the last decade (Tian & Zeitun, 2007). Interestingly, the findings of different studies indicate that the environment or country where data is being collected intermediates the relationship between capital structure and financial performance. Although finance and economics scholars have agreed that industry-specific factors are critical in determining the financial performance of firms, studies have provided conflicting results on how these dynamics alter the effect of capital structure on corporate financial distress. In their study of firms selected from manufacturing and investments sectors, Shumi Akhtar (2005) argue there is a negative and statistically significant relationship between borrowing and profitability among firms selected from both sectors. The study, therefore, concludes that industry dynamics did not influence the leverage-profitability relationship. The findings of the study are in concurrence with those of Amjed (2007) whose study compares the effect of debt on corporate financial distress among firms listed in the textile and energy sectors in Pakistan. In the study, the ratio of total debt to total equity represents the level of borrowing while performance is measured by the use of EPS. The results of the study indicate a negative and significant relationship between the two variables in both sectors.

The non-financial firms listed in the NSE are currently licensed, monitored and supervised by the Capital Markets Authority (CMA) which is the security market regulatory body in Kenya. Firms including non-financial seeking to finance their operations using equity undergo listing at the

NSE. This type of financing is usually in the form of equity whereby the public is allowed to own a share of the leading firms. Non-financial firms are driven to listing due to the high level of capital costs that makes debt financing unattractive (NSE, 2016).

Non-Financial firms listed at NSE are classified into different sectors such as; Agricultural, insurance, investment and investment services, Allied and Construction, Commercial and service, Energy and Petroleum, Automobiles and Accessories, Manufacturing, Telecommunication and Technology and Real Estate Sector (NSE, 2016). As of December 2017, NSE had 53 listed companies in the different non-financial sectors. Non-financial firms seeking to finance their operations using equity undergo listing at the NSE. Firms are driven to listing due to the high level of capital costs that makes debt financing unattractive. A majority of the firms listed in the NSE are usually large firms. Large firms desire to increase proportionally their investor base. These firms usually seek to have high liquidity to enhance their financial performance (NSE, 2016).

Financial services firms are excluded from this study since they are the companies that provide leverage and other debt services to nonfinancial firms. Non-financial firms listed on the NSE will provide fundamental information including firm size, liquidity and profitability which will be used to establish the correlation between capital structure and financial performance. The bulwark of investors on the NSE would want to invest and get high returns especially due to the well-managed structures as well as the more promising Kenyan economic outlook (Muiruri, 2014). Furthermore, the decision to base this study on non-financial firms derives from the fact that, unlike financial firms whose capital holding is strictly regulated by the CBK, capital holding regulations do not apply among non-financial firms despite all listed firms falling under the purview of CMA. This means that nonfinancial firms are technically at liberty to adopt any

capital structure configuration favorable to them in financing their operations. This laissez-faire approach predisposes nonfinancial firms to possibilities of over-gearing, subsequent distress and decreased financial performance (Bitok *et al.*, 2019).

Further, unlike in developed economies where capital markets systems are relatively elaborate, effective and quite efficient, the Kenyan capital market is still immature on most fronts (Ongore, 2011). The corporate bond market is particularly at the infancy stage and heralds a relatively low participation level in the corporate bond segment (Mwangi *et al.*, 2012). The implication is that whenever non-financial firms require additional debt capital, they naturally subscribe to commercial bank loans as their main source of debt finance. Bank loans in Kenya are however characterized by significantly high interest rate regimes which further strains the financial performance of nonfinancial firms (Magara, 2012).

The devastating effect of financial distress among non-financial firms listed in Kenya has been highlighted over the past few decades. This is evidenced by the many firms that have been placed under receivership, undertaking financial restructuring, or being delisted from NSE altogether. Such firms include: Kenya Airways, Home Africa, ARM cement and Transcentury. Although subsequent investigative reports conducted by government agencies have attributed this phenomenon to aggressive financing, analysts and members of the public alike have discredited these explanations on grounds of political expediency. Among finance scholars, the debate is further complicated by the fact that the empirical relationship between financial structure and financial performance underpinned by financial distress indicators of corporations

is not clear. Against this background, therefore, is the investigation of the effect of capital structure on the financial performance of non-financial firms listed in Kenya necessary.

1.2 Research Problem

Capital structure and financial performance are significant concepts among firms. The decisions that firm managers make to a greater extent affect their profitability. Listed nonfinancial firms have access to a wide range of firm financing options as compared to those that are not listed. Therefore, the listed nonfinancial firms should have relatively higher financial performance. The majority of firms facing declined financial performance at the NSE are the listed nonfinancial firms. The declined financial performance of these firms, therefore, begs the question as to what is causing this decrease in profitability despite the favourable environment that provides for a variety of firm financing options. These concepts are important in helping firms grow thereby enhancing shareholders' value (Muigai & Muriithi, 2017). Acknowledging this, several interventions have been undertaken by firm managers to address weaknesses in capital structure among listed firms in the NSE. Despite the efforts in making the best capital structure decisions, firms still struggle to attain their financial performance goals.

Nonfinancial firms face liquidity problems in meeting their short-term financial obligations. Illiquidity is more manifest in larger firms than in small ones because of increased short-term financial obligations associated with large firms. According to Frieder and Subrahmanyam (2005), the low liquidity levels can be attributed to increased cash outflows in the form of debt repayments. Firm size influences the financing decisions of firm managers by encouraging them

to make use of more debt than equity to improve firm financial performance. This is due to the interest tax advantage. Heshmati(2008) on the contrary argued that listed companies have easier access to the equity market, in comparison with the smaller companies, because of low fixed costs. Therefore, there is a negative relationship between the firm size and the debt level.

Fama and Jensen (2003) opine that large firms prefer to raise funds from equity rather than debt. This is due to increased transaction costs and asymmetric information problems that are lesser in large firms in comparison with small firms. Another reason, which makes small firms reluctant to use outside financing, is the market access limitations (Cassar & Holmes, 2003). This, therefore, raises the intervening role of liquidity and the moderating contribution of firm size in the relationship between capital structure and financial performance of listed nonfinancial firms.

Consequently, firm managers are unable to decipher the contribution that capital structure has on the financial performance of firms listed on the NSE (Kamuti & Omwenga, 2017). The inability of firm managers to make capital structure choices can be linked to the difficulty in determining exactly the capital structure that is optimal for their firms that can help increase financial performance (Noreen, 2013). The intervening role of liquidity and the moderating contribution of firm size in the relationship between capital structure and financial performance of listed nonfinancial firms also add to the challenge that firm managers grapple with in seeking to improve the financial performance of listed nonfinancial firms.

Listed nonfinancial firms have access to a wide range of financing options. Investors seeking to obtain ownership buy shares in these firms. According to Myers (2001), nonfinancial firms have the broadest menu of financing choices and can adjust their capital structures at relatively low cost. Furthermore, Heshmati (2008) argues that listed companies have easier access to the equity

market, in comparison with the smaller companies, because of low fixed costs. The bulwark of investors on the NSE would want to invest and get high returns especially due to the well-managed structures as well as the more promising Kenyan economic outlook (Muiruri, 2014). Unlike financial firms whose capital holding is strictly regulated by the CBK, capital holding regulations do not apply among non-financial firms despite all listed firms falling under the purview of CMA. This means that non-financial firms are technically at liberty to adopt any capital structure configuration favorable to them in financing their operations. Despite all these favourable conditions available for increased profitability, nonfinancial firms listed on various stock exchanges are experiencing declining financial performance and many firms have been delisted from the stock exchange in the last decade (Tian & Zeitun, 2007). The NSE has also mostly witnessed listed nonfinancial firms experiencing decreased financial performance, bankruptcy and corporate failure. This raises the questions on what factors could be contributing to these corporate failures being witnessed among the nonfinancial firms listed on the NSE.

Existing empirical studies mainly focus on the immediate impact of capital structure on financial performance with few studies examining the moderating and intervening effect of liquidity and firm size. Moreover, there have been differences in the operationalization of firm financial performance between accounting profitability measures including return on sales (ROS), return on equity (ROE) and return on assets(ROA) or stock market-based measures such as market return and Tobin's Q. Majority of the studies have made use of accounting profitability measures when studying on the financial performance of listed firms ignoring the stock-based measures such as market return and Tobin's Q, that comprehensively evaluates firm financial performance (Hoskisson e*t al.,* 1999; Hult *et al.,* 2008; Combs *et al.,* 2005). Furthermore, the focus of these studies has been on the non listed firms. This study will employ the stock-based measures and

will focus on firms listed on the NSE. There are conflicts in agency cost theory, capital irrelevance theory and pecking order theories. Myers (2001) argues that no universally accepted theory exists on debt-equity balance, and there are no reasons to anticipate for one. For instance, the trade off theory argues that firms strive to attain debt levels that balance additional debt tax advantages against possible financial distress costs associated with debt. According to the pecking order theory, when internal cash flows cannot adequately fund capital expenditures, firms prefer to borrow rather than issue equity.

Globally, the recent wave of corporate failures leading to the government bailout of several corporations and others being declared insolvent such as Toshiba,2015; Fannie Mae,2011; Lehman Brothers,2008; Northern Rock, 2008; MG Rover Group,2005; WorldCom, has led to increased attention and interest from regulators, researchers and academicians on the capital structure choices among corporations. Governments have blamed these corporate failures on imprudent capital structure decisions that overly rely on debt financing. The consequence of debt financing has led to some of these corporations becoming insolvent thereby facing hostile takeovers, insolvency, or government bailout (Wogan, 2017). Globally, researchers have failed to find any convincing connection between capital structure choice and financial performance. Some of these researchers find significant relationships between capital structure and firm financial performance (Zeitun& Tian, 2007; Saeedi & Mahmoodi, 2011) while others find no relationship (Birru, 2016; Zeitun & Tian, 2007). The influence of firm size and liquidity on financial performance is also controversial. While Shukla *et al.*, (2017) depict a negative relationship between liquidity and financial performance, a positive relationship is documented by other studies (Demirgines, 2016; Badreldin & Zaroug, 2016). While other studies have demonstrated a link between firm size and firm financial performance (Morck, Vishny &

Shleifer 1988), others argue that no relationship exists between firm size and firm financial performance (Lopez *et al.,* 2016; Abbasi, 2015).

Locally, despite interventions, several inadequacies in capital structure choice and liquidity problems among some of the nonfinancial firms listed on the NSE have been witnessed in Kenya resulting in receivership/statutory management, hostile takeovers and government bailout. According to Onyango *et al.,* (2016) increased leverage in firms leads to increased financial performance. Furthermore, increased leverage leads to a decrease in financial performance as measured by ROE. This indicates differences in the causal relationship between equity and debt financing on the financial performance of listed nonfinancial firms. Firms with huge debts in their capital structure such as Kenya Airways, Home Africa, ARM cement and Transcentury have reported huge losses and found themselves in serious debt crises owing creditors more than their net worth. These firms that have relied much on debt financing tend to be more liquid to pay their debt obligations. This leads to decreased financial performance (Awan & Amin, 2014). These advancements combined with the lack of universal theory trigger the need for further studies into the effects of the composition of capital on the financial performance of firms listed in the NSE (Kamuti & Omwenga, 2017). This study will only consider the nonfinancial firms listed on the NSE. Financial services firms provide leverage and other debt services to non-financial firms. Nonfinancial firms also have the broadest menu of financing choices and can adjust their capital structures at a relatively low cost (Myers, 2001). Therefore, the nonfinancial firms are excluded from this study. Furthermore, the recent corporate failures have largely been witnessed among nonfinancial firms. This study intends to answer the question: what are the

relationships among capital structure, firm size, liquidity and financial performance of nonfinancial firms listed in the NSE?

1.3 Research Objectives

1.3.1General Objective

To determine the relationships among capital structure, liquidity, firm size and financial performance of nonfinancial firms listed at the Nairobi Securities Exchange.

1.3.2 Specific Objectives

The specific objectives of the study were:

(i) To determine the effect of capital structure and the financial performance of nonfinancial firms listed at the Nairobi Securities Exchange

(ii) To determine the effect of liquidity on the relationship between capital structure and the financial performance of nonfinancial firms listed at the Nairobi Securities Exchange

(iii) To determine the effect of firm size on the relationship between capital structure and the financial performance of nonfinancial firms listed at the Nairobi Securities Exchange

(iv) To determine the effect of capital structure, firm size, liquidity on the financial performance of nonfinancial firms listed at the Nairobi Securities Exchange.

1.4 Value of the Study

This study provides more insight into the pecking order theory. The pecking order theory says that the firm will borrow, rather than issue equity, when internal cash flow is not sufficient to fund capital expenditures. Thus the amount of debt will reflect the firm's cumulative need for

external funds. The study indicates that listed nonfinancial firms employ debt financing more than equity financing. This, therefore, confirms the application of the pecking order theory in practice. Increased leverage leads to an increase in firm financial performance. Therefore, whenever nonfinancial firms seek to expand their operations and have limited financing options, these firms employ debt. This study has also given more information that firm managers avoid equity issuance as they consider that it gives a wrong signal that the firm is unstable to investors. This further confirms the pecking order theory. According to the pecking order theory, only pessimistic managers will want to issue equity. If the debt is an open alternative, then any attempt to sell shares will reveal that the shares are not a good buy. Therefore, equity issues will be spurned by investors if the debt is available on fair terms, and in equilibrium, only debt will be issued. Equity issues will occur only when debt is costly for example because the firm has a dangerously high debt ratio where managers and investors foresee costs of financial distress. In this case, even optimistic managers may turn to the stock market for financing.

This study provides additional insight into the influence of firm size and liquidity on the relationship between capital structure and financial performance of the firm. This study contributes to theory and practice in finance in that the study links the literature by considering firm size and liquidity as moderating and intervening variables respectively. This study shows that firm managers can seek to grow firm size as a means of achieving increased financial performance. Firm size growth can be attained by increasing the total amount of total assets of the company and by increasing the firm's total sales. Total sales can be enhanced through advertising and promotions. The study also shows that firm managers can employ debt financing to achieve high liquidity levels. High liquidity levels can be used to enhance firm financial performance. High liquidity can be used to meet the firm’s current obligations and avoiding costs

associated with failure to attain these short-term obligations. The ability of firms in meeting these obligations helps in improving the financial performance of listed nonfinancial firms. Capital structure is argued to positively impact financial performance. Firm managers can employ more leverage in their firms to improve the financial performance of listed nonfinancial firms despite the availability of equity financing on the stock markets. The results of this study have vital implications for firm managers in helping them make firm financing decisions to enhance shareholders' value.

This study also considered the combinative effects of firm size, liquidity, and how these variables affect the relationship between capital structure and firm financial performance, whereas other researchers have explored separate effects of these variables. This study will shed light on the importance of firm size, liquidity and capital structure; hence firm managers will embrace the best financing options in their companies.

This study contributes to policy formulation in firms, by governments and regulators in various industries where these firms operate. Investors in these business entities will be able to have a good understanding of leverage in firms that they have invested in and its impact on the firm's financial performance. Policies will be made that enhance asset liquidity, firm size and increase the amount of debt financing to help promote financial performance. Policies will be made that will enable firms to make more informed investment decisions that lower their business risks. Asset liquidity can be enhanced through proper accounts management, getting rid of unnecessary assets and reducing overhead costs. Policies that enhance firm size such as increasing firm total sales, firm total assets should be made. Government can put in place policies that help reduce regulations that stifle firm growth and expansion by lowering corporate taxes and reducing the

cost of doing business. Furthermore, the government can help lower interest rates that will promote debt financing, therefore, lowering the cost of capital.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews previous studies that have a relationship with the study topic. The chapter commences with a theoretical review on capital structure and models under which the study is anchored. Furthermore, the chapter considers a look at the capital structure determinants, firm financial performance and empirical studies on the variables under study. The chapter concludes with a look at an empirical review on capital structure and firm financial performance with research gaps.

2.2 Theoretical Review

This section reviews the theories under which the study is anchored. The study focuses on capital structure. Capital structure theories seek to explain what happens to the general overall cost of capital and firm value based on its assets when there is a variation in terms of the capital financing sources.

2.2.1 Capital Structure Irrelevance Theory

This theory was formulated by Modigliani and Miller (1958). The Modigliani and Miller (1958) capital structure assume that the firms anticipate a given set of cash flows. The firm's decision on the proportion of equity and debt to use in asset financing explains how its cash flows are divided among investors. Firms and investors are presumed to possess equal financial markets' access which opens up an avenue for homemade leverage. The capitalist can easily formulate a

desired leverage or outdo undesired leverage. Consequently, the firm's leverage has no implication on the firm's market value. Their review was however faced with controversy and clarity. The Modigliani and Miller (1958) capital irrelevance theory has no application in reality without these assumptions. These include no transaction costs, no taxes, no bankruptcy costs, and equivalence in borrowing costs for both companies and investors. The Modigliani and Miller (1958) capital irrelevance theory also assume symmetry of market information. That is, firms and investors have the same information and the assumption that there is no effect of debt on a company's earnings before interest and taxes (Miller, 1977). Of course, in the real world, there are taxes, transaction costs, bankruptcy costs, differences in borrowing costs, information asymmetries and effects of debt on earnings.

Modigliani and Miller have contributed a lot to financial economics. According to Stern and Chew (2003), most finance economists would agree that M&M proposition of capital structure irrelevance is the most famous and has given a greater impact on financial economic theory development. Despite the contribution which is seen as a revolutionary from many economic experts, there are many more too who are skeptical or at least do not see the M&M propositions as realistic. Modigliani and Miller (1958) have assumed that each company meets a risk class of firms with similar income within states across the world. However, Stiglitz (1969) proved that this assumption is not vital; hence it does not coincide with reality

As new conditions are created due to market changes, other authors have suggested new theories regarding capital structure. Luigi and Sorin (2011), Baker and Wurgler (2002) have recently suggested their theory; that of the market timing theory of capital structure. As stressed by authors, market timing means that companies issue new shares as they recognize that their shares are overestimated and at the same time firms repurchase their shares as they consider these

underestimated. Other authors have established their assumptions and theories regarding market timing and issuing behaviour (Baker and Wurgler, 2002). According to Luigi and Sorin(2011)capital structure is influenced by market timing.

The assertions of the classic arbitrage-based irrelevance provide a basis through which investors' arbitrage keeps the firm's value independent of its leverage. Ideally, Miller and Modigliani (1963) argue that in perfect markets, both dividend policy and capital structure do not matter. The study triggered serious studies seeking to disapprove capital irrelevance as a theoretical issue. The most frequently used elements include tax considerations, bankruptcy costs, transaction costs, adverse selection, agency conflicts, time-varying financial market opportunities, investor clientele effects and lack of reparability between financing and operations.

Capital structure irrelevance has contributed a lot to financial economics. It has also greatly impacted the development of financial economic theory as shown by (Stern & Chew, 2003). Another author in agreement also is Breuer and Gurtler (2008) who pointed out a no-arbitrage argument as proposed by the theory of capital structure irrelevance. Modigliani and Miller (1958) held an assumption that every firm converges to a "risk class" firms in countries in the world with a semblance in income. However, Stiglitz (1969) offered proof on the insignificance of this assumption thereby showing it to be out of touch with reality. Based on this theory, the performance of listed firms will not increase irrespective of the form of the capital structure adopted. This is due to the tax cost implications associated with equity financing and the risk of bankruptcy associated with debt financing (Breuer & Gurtler, 2008).

The theory is relevant to this study in that Harris and Raviv (1991) stated that the Modigliani-Miller irrelevance theory cannot be proven easily. Whereas the Modigliani-Miller theorem does not provide a realistic description of how firms finance their operations, it provides the means of finding reasons why financing may matter and this description provides a reasonable interpretation of much of the theory of corporate finance. Therefore, it gives a reason why firm managers have to critically evaluate the capital structure choices that will help increase financial performance hence shareholders' value. The capital structure irrelevance theory offers the basis for reasoning where capital structure choices are made. Therefore, determination through empirical tests is done on the level of debt financing that helps maximize the profitability of the listed non financial firms.

Taxes significantly influence cash flow negatively because they tend to reduce the amount of a firm's cash flow. As more taxes are levied on a company, its cash flow reduces. Cash flow is a crucial determinant of a firm's capital structure. The capital structure irrelevance theory, therefore, gives an implication that a reduction in cash flow is likely to result in the poor financial performance of a company. The capital structure irrelevance theory, therefore, gives an insight into how high taxes negatively and significantly influence cash flow in the listed non financial firms. Firm managers can use capital irrelevance theory to increase leverage, enhance liquidity and help grow firm size. Consequently, this will lead to an increase in financial performance.

2.2.2 Pecking Order Theory

The pecking order theory was propounded by Myers and Majluf (1984) and (Myers, 1984).Myers and Majluf analyzed a firm with assets-in-place and a growth opportunity requiring

additional financing. They assumed perfect financial markets, except that investors do not know the true value of either the existing assets or the new opportunity. Therefore, investors cannot precisely value the securities issued to finance the new investment. This theory by Myers and Majluf (1984) posits that managers of firms tend to hold more information than investors in firms that they are managing. This great difference in information is called information asymmetry. When new investments are being undertaken by firms, there may be severe underpricing to the extent to which the new investors get comprehension more than the project net present value (NPV). This results in value dilution to investors that already exist. The result of this is under-investment, which will cause the project to be rejected. To prevent this from happening, preference conditions come in, whereby, financing projects internally is highly considered than seeking external funding (Myers & Majluf, 1984).

Pecking Order Theory makes a proposition relying on information asymmetry derived costs between the market and firm managers. This theory assumes that financing using debt is of lesser significance in comparison to asymmetric information presence costs of issuance of new securities. There is a tendency of less subjugation to information asymmetries of tangible assets. These assets are usually highly valued in case of firms facing bankruptcy (Danso & Adomako, 2014). The pecking order theory starts with asymmetric information as managers know more about their companies' prospects, risks and value than the outside investors. Shareholders may not have this full knowledge within their reach. Asymmetric information affects the choice between internal and external financing and between the issue of debt or equity. There exists a pecking order for the financing of new projects (Matemilola & Bany-Ariffin, 2011).

Asymmetric information favours the issue of debt over equity as the issue of debt signals the board's confidence that investment is profitable and that the current stock price is undervalued (were stock price over-valued, the issue of equity would be favored. The issuance of equity would signal a lack of confidence in the board and a feeling the share price is over-valued (Saeed, Gull & Rasheed, 2013). An issue of equity would therefore lead to a drop in share price. This does not however apply to high-tech industries where the issue of equity is preferable due to the high cost of debt issue as assets are intangible.

The pecking order theory has its shortcomings despite its spaciousness. Assuming the firm announces an issue of common stock. That is good news for investors if it reveals a growth opportunity with positive net present value. That is bad news if managers believe the assets-in-place are overvalued by investors and decide to try to issue overvalued shares. Issuing shares at a price that is so low transfers value from existing shareholders to new investors. If the new shares are overvalued, the transfer goes the other way. Myers and Majluf (1984) assumed that managers act in the interest of existing shareholders and refuse to issue undervalued shares unless the transfer from old to new stockholders is more than offset by the net present value of the growth opportunity.

This leads to a pooling equilibrium in which firms can issue shares, but only at a marked-down price. Share prices fall not because investors' demand for equity securities is inelastic, but because of the information investors infer from the decision to issue; it turns out that the bad news (about the value of assets in place) always outweighs the good. Some good firms whose assets-in-place are undervalued at the new price will decide not to issue even if it means passing by an opportunity with a positive net present value. Furthermore, the pecking order theory

assumes perfect financial markets, except that investors do not know the true value of either the existing assets or the new opportunity. Therefore, investors cannot precisely value the securities issued to finance the new investment. Perfect markets however do not exist therefore making the pecking order theory inapplicable in real market conditions.

Tests of the pecking order theory have not been able to show that it is of first-order importance in determining a firm's capital structure. However, several authors have found that there are instances where it is a good approximation of reality. Fama and French (2002) established that some features of the data are better explained by the pecking order than by the trade-off theory. Goyal and Frank (2012) hypothesized that among other things, pecking order theory fails where it should hold, that is, for small companies where information asymmetry is presumably an important problem. In this case, managers may benefit from the full knowledge of information asymmetry and secure debts without the knowledge of the ordinary shareholders who exercise control of the company. When shares are undervalued they tend to attract more shareholders because they are cheap and this results in dilution of control of the firm. More profits are also appropriated to the shareholders in the form of dividends and fewer earnings are retained for future operations.

Some authors agree with the assertions of this theory. Authors such Danso and Adomako (2014) posit that the financing cost drives the hierarchy involved in the corporate financing decision. However, the pecking order theory has criticism from others, in that there is no optimal capital structure consideration (Luigi & Sorin, 2009). Based on the pecking order theory, the performance of listed firms will increase depending on the form of capital structure employed. This for instance is well articulated by the engineering firms in Pakistan that make use of the

pecking order theory (Abdul, 2012). The firm management is also to a larger extent inclined to the use of equity instead of debt as a result of higher costs relating to the cost of capital (Adomako, 2014)). Furthermore, the benefits of tax advantage outweigh the cost of bank bankruptcy associated with debt financing. Firm managers are also more likely to embrace liquidity that best serves firm financial obligations thereby helping spur firm performance (Boodhoo, 2009).

This study indicates that debt financing helps increase listed non financial firms' liquidity. This for instance is well articulated by the engineering firms in Pakistan that make use of the Pecking order theory (Abdul, 2012). The pecking order theory can help firm managers choose the best capital structure in their financing decisions. This will involve taking into consideration the cost of capital. Therefore, firm managers can choose internal financing instead of external financing and debt instead of equity to help promote firm financial performance. The pecking order theory also helps indicates that through increased leverage nonfinancial firms can enhance their growth and expansion by investing in more assets. Non financial firms can also grow by increasing their sales through advertising and promotions.

2.2.3 Trade off Theory

This theory suggested by Myers (1984) emphasizes a balance between tax savings that comes from debt, reduction in agent cost, financial distress costs and bankruptcy. The trade-off theory of capital structure postulates that managers attempt to balance the benefits of interest tax shields against the net present value of the possible costs of financial distress (Myers, 2001). This theory was expounded more from the study of Kraus and Litzenberger (2011), who formally introduced the interest tax shields associated with debt and the costs of financial distress into a state

preference model. According to Chakraborty (2010), the trade-off theory postulates that some form of optimal capital structure should exist under the balance between the present value of interest tax shields and the cost of bankruptcy. Bankruptcy costs can be classified under direct and indirect costs. As shown in Baxter (1967), direct costs of bankruptcy include, inter alia, the administrative and legal expenses incurred by a firm that goes bankrupt. On the other hand, the indirect costs relate to the reduction in the market value of the firm due to the firm's inability to service its debt obligations.

Different authors use the term trade off theory to describe several theories that are related. Trade-off theory suggested the modified MM proposition which insists that the gains of tax shields are downgraded by the firm's agency costs and financial distress. The trade-off theory of capital structure is the idea that a firm chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Kraus and Litzenberger (2011) considered a balance between the dead-weight costs of bankruptcy and the tax saving benefits of debt. Often agency costs are also included in the balance. This theory is often set up as a competitor theory to the pecking order theory of capital structure.

This theory posits that every company has a ratio that is optimal of equity-debt that leads to maximization of firm value. The marginal benefits of further increases in debt decline as debt increases, while the marginal cost increases. A firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. As the debt-equity ratio (that is, leverage) increases, there is a trade-off between the interest tax shield and bankruptcy, causing an optimum capital structure. The theory affirms that a company's capital structure is optimal and this can be determined by transacting off the costs-benefit of using either debt or equity. Benefits accrued from debt shields are thus adjusted against financial distress.

Other costs to be mitigated include agency costs and information asymmetry. The attainment of an optimal point is when the benefits that arise out of debt issues exactly diminishes the rise in the costs that come out of the issuance of more debt (Myers, 2001).

Despite its plausibility, the trade off theory is in immediate trouble on the tax front, because it seems to rule out conservative debt ratios by taxpaying firms. If the theory is right, a value-maximizing firm should never pass up interest tax shields when the probability of financial distress is remotely low. Yet there are many established, profitable companies with superior credit ratings operating for years at low debt ratios, including Microsoft and the major pharmaceutical companies (Myers, 2011).

Studies of the determinants of actual debt ratios consistently find that the most profitable companies in a given industry tend to borrow the least. For example, Wald (1999) found that profitability was "the single largest determinant of debt/ asset ratios" in cross-sectional tests for the United States, United Kingdom, Germany, France and Japan. High profits mean low debt and vice versa. But if managers can exploit valuable interest tax shields, as the trade off theory predicts, we should observe exactly the opposite relationship. High profitability means that the firm has more taxable income to shield and that the firm can service more debt without risking financial distress. The trade off theory cannot account for the correlation between high profitability and low debt ratios.

The theory is relevant to this study because of the huge implications on the capital structure decisions firm managers make in carrying out firm operations. Firm managers can make use of the trade off theory to determine the debt-equity ratio to embrace to enhance shareholders' value. Leverage is measured by dividing the amount of debt financing by equity. This is a determinant

of capital structure that is likely to influence the financial performance of a firm since high debts come with more cost of financing the debt, a cost of financial distress that may lead to poor financial performance. The trade off theory provides insight into the study findings. The study findings indicate that nonfinancial firms can make use of the tax advantage by increasingly employing debt financing to help promote financial performance. The trade off theory furthermore provides more insight on the amount of debt that should be employed by nonfinancial firms to avoid the possibility of facing bankruptcy.

The trade-off theory is important in assessing the effect of financial leverage on the financial performance of nonfinancial firms listed at the NSE, Kenya. The theory is also relevant to this study in that firm managers can embrace the best firm financing option that helps enhance liquidity. Debt financing helps enhance firm liquidity. This is because highly leveraged firms tend to hold on to highly liquid assets to avoid costs that may result from any debt defaults. A high liquidity level leads to increased financial performance (Alshatti, 2015). The tradeoff theory also helps in this study in that it predicts that firms will have a target debt ratio and that these ratios differ from firm to firm.

2.2.4 Agency Cost Theory

This theory by Jensen and Meckling (1976) is concerned with the diverging interest when the firm ownership and management are separated. The theory argues about the relationship between the agent (manager), and the principal (shareholders). The agency theory is based on the notion that managers will not always act in the best interest of the shareholders. Jensen and Meckling (1976) further elaborate on this concept by identifying two main conflicts between parties to a company, firstly, between the managers and shareholders, and secondly, between the

shareholders and the creditors. In the first instance, managers are tempted to pursue the profits of the firms they manage for their own gain at the expense of the shareholders. In the latter instance, debt provides shareholders with the incentive to invest sub-optimally. Harris and Raviv (1991) argue that if an investment yield returns higher than the face value of the debt, the benefits accrue to the shareholders. Conversely, if the investment fails, the shareholders enjoy limited liability by exercising their right to walk away. This leaves the debt holders with a firm whose market value is less than the face value of the outstanding debt.

The major assumption of this theory is that the separation of ownership and management creates conflicts among principals and agents. The main argument behind the agency theory is that corporate managers act in their interests. They are looking for job security, prerequisites, in the worst cases getting a hand on assets and cash flows. The ethics of the free cash flow theory has been built due to the agency cost approach. Managers have incentives to decrease the firm value unless the free cash flow distributes between stakeholders. Jensen (1986) argues that the problem is how to motivate managers to disgorge the cash rather than investing it below the cost of capital or wasting it on organization inefficiencies. One solution to this problem is to apply more debt in the capital structure to confine the managers. This strategy would force the firm to limit its spending or perks to avoid the default risk.

Regarding agency theory, Jensen and Meckling (1976) argued that there is less conflict between principals and agents in small and medium-sized enterprises. The reason is that in SMEs' the owner and the manager is one person. According to Ang (1992), family or small firms can be considered as zero agency cost since the level of conflict is low in these kinds of firms. The idea of zero agency cost is also supported by Anderson and Reeb (2003) and McConaughy (2000).

They argued that the existing incentive structured in the small and medium size firms creates fewer agency conflicts between different claimants.

Despite its plausibility, the agency cost theory assumes perfect financial markets, except that investors do not know the true value of either the existing assets or the new opportunity. Therefore, investors cannot precisely value the securities issued to finance the new investment. Ever since Berle and Means (1932), research on corporate governance has stressed the adverse consequences of the separation of ownership and control in public corporations. Jensen and Meckling (1976) argued for the inevitability of agency costs in corporate finance. Corporate managers, the agents, will act in their own interests, will seek higher-than-market salaries, perquisites, job security and in extreme cases, direct capture of assets or cash flows. They will favor "entrenching investments" which adapt the firm's assets, operations to the managers' skills, knowledge, and increase their bargaining power (Shleifer and Vishny, 1989).

The investors can discourage such value transfers by various mechanisms of monitoring and control, including supervision by independent directors and the threat of takeover. But these mechanisms are costly and subject to decreasing returns, so perfect monitoring is out of the question. The failure by investors to tame the excesses of firm managers and spur them to align their interest exposes the misgivings of the agency cost theory. The interests of managers and investors can also be aligned by the design of compensation packages. Here again, perfection is out of reach. First, the manager never bears the full costs that managerial actions impose on investors-unless, of course, the manager is also the owner. Second, there is no pure, observable measure of the performance of managers. The actions of a manager may account for a small fraction of the variance of observable outcomes, such as returns on common stock or changes in

earnings. Investors would like to reward effort, commitment, and good decisions, but these inputs are imperfectly observable (Myers, 2011).

Furthermore, Myers (1977) argument contradicts modern corporate financing. This is in the use of more debt in the operations of high-growth firms. Generally, high-growth firms have relatively more profitable investment opportunities than their mature counterparts. The evidence, therefore, is that managers of high-growth firms believe their investment projects are so viable so much so that they can pay off the higher debt levels and consequently enjoy the concomitant benefits of debt financing. Last but not least, the conflicts between debt-holders and equity holders may occur because debt contracts give equity holders a motivation to invest sub-optimally (Jensen and Meckling, 1976). Basically, debt contracts provide that if an investment yields large returns, well above the face value of the debt, most of the profits should go to shareholders who are residual claimants of the firm's cash-flows while debt-holders receive fixed agreed on payments. The bone of contention however is that those debt-holders bear all the consequences if the investment fails since shareholders are under the veil of limited liability. As debt-holders are not unaware of this development, debt financing becomes expensive as they would factor it into their required returns to compensate.

Also, the agency cost theory does not offer an operable solution for dealing with agency problem between firm managers and shareholders. For instance, investors would like to reward effort, commitment and good decisions, but these inputs are imperfectly observable. Even if good performance on these dimensions were observable by some informed monitor, the performance would not be verifiable. A contract offering a bonus for, say, good decisions investment decisions made by firm managers would not be enforceable, because the decisions could not be

evaluated by a disinterested outsider or by a court of law. In other words, "complete contracts" cannot be written (Myers, 2011).

The agency cost theory is relevant to this study since it helps in exposing the conflicts that exist between debt and equity investors. Conflicts between debt and equity investors only arise when there is a risk of default. If debt free of default risk, debt holders have no interest in the income, value or risk of the firm. But if there is a chance of default, then shareholders can gain at the expense of debt investors. Equity is a residual claim, so shareholders gain when the value of existing debt falls, even when the value of the firm is constant. Suppose that managers act in the interests of stockholders and that the risk of default is significant. The managers will be tempted to take actions that transfer value from the firm's creditors to its stockholders.

The agency cost theory gives more insight into how firm managers make capital structure decisions. Firm managers may be able to borrow still more and payout cash to stockholders. In this case, the overall value of the firm is constant, but the market value of the existing debt declines. The cash received by stockholders more than offsets the decline in the value of their shares. The managers can cut back on equity-financed capital investment. Normally the firm invests up to the point where the expected return just equals the cost of capital. That is the point where the additional present value generated by investing just equals the investment required. But part of this additional present value goes to the firm's existing creditors, who are better protected once the investment is made. The gain in the market value of debt acts as a tax on new investment. If that tax is high enough, managers may try to shrink the firm and payout cash to stockholders (Myers, 1977).

Firm managers may still "play for time," perhaps by concealing problems to prevent creditors from acting to force immediate bankruptcy or reorganization. This lengthens the effective

maturity of the debt and makes it riskier. Again, creditors suffer and stockholders gain. Debt investors are of course aware of these temptations and try to write debt contracts accordingly. Debt covenants may restrict additional borrowing, limit dividend payouts or other distributions to stockholders. Debt covenants also provide that debt is immediately due and payable if other covenants are seriously violated. The agency cost theory gives more information on debt payments. Debt financing affects shareholders both positively and negatively. On a positive note, debt payments force managers to pay out interest thereby reducing the potential overinvestment problem. On the negative side, excessive debt may lead to high interest repayments, which may lead to the rejection of profitable projects, thus leading to the underinvestment problem. Capital structure is therefore determined by a trade-off between the benefits and costs of debt (Stulz, 1990).

2.2.5 Information Signalling Theory

The signaling theory was first coined by Ross (1977) who posits that if managers have inside information, their choice of capital structure will signal information to the market. Leverage may well be influenced by the theoretical premise that increases in debt are a positive sign that managers are confident about future earnings. Debt contracts are a commitment by managers to make future interest payments. Failure to repay debt could lead to bankruptcy. This signals confidence to the market that the firm will have sufficient cash flows to service debt. The signaling theory emanates from information asymmetries between firm management and shareholders. If managers believe that their firms are undervalued, they will issue debt first and then issue equity as a last resort. Conversely, if management believes that their firm is overvalued, they will issue equity first then debt.

This theory by Akerlof and Arrow (1987) involved the concept of signaling and was first studied in the context of job and product markets in 1970 and later developed into signal equilibrium theory in 1973 by Michael Spence. The concept stated that a good firm can distinguish itself from a bad firm by sending a credible signal about its quality to capital markets. The signal will be credible only if the bad firm is unable to mimic the good firm by sending the same signal. This will happen if the cost of the signal is higher for the bad type -firm than that of the good type firm, making it worthless to mimic by the bad firm (Calantone *et al.*, 2002). This theory argues that the choice of a firm's capital structure signals to the outside investors the information that the insiders possess.

The theory further argues that due to the problem of information asymmetry, it makes it difficult for lenders and prospective common stock investors to accurately assess their level of risk and hence the reliance on what is communicated by the insiders (Ross, 1977). The presumption is that managers are likely to be better informed about the profitability and cash flow prospects of their firms than outside investors (Ross, 1977). According to Ross (1977), the market may not be able to distinguish firms with rosy prospects from those with less prosperous outlooks due to a lack of reliable data on the differences among firms hence it will price firms almost equally, to the detriment of high-quality companies and their shareholders. This, therefore, justifies the concept of the theory.

In sum, two hypotheses emerge from the theory. The first is by Ross (1977) who argues that a firm signals an increase in the firm's asset value by increasing its leverage since it has the confidence of meeting the debt obligation. The second is by Leland and Pyle (1977) who argue that a firm signals the increase in its value by reducing its leverage since it has enough retention to finance its future growth.

The signaling theory implies that corporate managers will attempt to time equity issues based on the market's assessment of their shares. For example, Baker and Wurgler (2002) report a strong relationship between firm financing decisions and historical market values of equity. In essence, the capital structure of a firm is the cumulative result of corporate managers' past attempts to time the market. However, Brounen *et al.*, (2006) do not find any evidence to suggest that European managers signal their private information to influence capital structure. The evidence provided thus far suggests that, on average, the signaling theory holds.

In practice, however, especially in a fiercely competitive market, some signals are less or not reliable and can be imitated by those who wish to give the impression of having the quality, without actually possessing it (Smith & Harper, 2003). Smith and Harper (2003) analogize such firms to an unmarried woman who may choose to wear a ring to signal that she is married to forestall unwanted attention. The theory does not cater for such events. Empirically too, using data for 1419 farms in Illinois in 2004 Ross (1977) found that, unlike corporate firms which use high leverage as signals, farming concerns mainly depend on their large size and good historical operation records, invalidating generalization.

This theory applies to the study if the managers would want to signal a firm's increased level of asset value. This increased leverage in firms would all be geared towards increasing firm financial performance and therefore ensure that their behaviours, actions and decisions are aligned with the principals' interests. This means that managers and directors can embrace a firm financing strategy that is meant to attract investors to buy into shares by signaling to them the firm value.

2.3 Empirical Review

This section reviews the empirical studies on the relationships among capital structure, firm size, liquidity and financial performance. A summary of the empirical literature reviewed identifying the research gaps is presented and forms the basis for the development of the conceptual model.

2.3.1 Capital Structure and Financial Performance

Zertun and Tian (2007) using the unbalanced cross-sectional pooled OLS regression model studied capital structure effect on the financial performance of corporate firms in Jordan listed on ASE between 2005 to 2013. The findings revealed a statistically significant inverse relationship between capital structure and the Jordanian industrial companies' financial performance at the ASE listing. The company's profitability was used as an index for the firms' financial performance. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Ebaid (2009) using multiple regression analysis carried out a study to investigate the impact of the choice of capital structure on the performance of firms in Egypt. Performance was measured using ROE, ROA and gross profit margin. Capital structure was measured by short-term debt to asset ratio, long-term debt to asset ratio, and total debt to total assets. The study indicated that capital structure has little to no impact on a firm's financial performance. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Biglar and Salehi (2009) using multiple regression analysis studied whether capital structure decision impacts firms' performance. For this reason, they used three definitions of capital structure in the scope of book value to market value. Five measures were assumed for financial

performance and applied the data of 117 corporates on the Tehran Stock Exchange (TSE) in a 5-year time horizon (2002-2007). The results of the study demonstrated that capital structure influences financial performance. The study concludes that the influence of capital structure on performance respectively belonged to measures of adjusted value, market value and book value. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Dehnavi and Hosseinzade (2013) analyzed the effect of capital structure on the performance of the listed companies on the Tehran Stock Exchange. Multivariate regression by using the panel data method was utilized to test the hypotheses. Performance was considered as a dependent variable and was measured through data envelopment analysis (DEA) and the efficiency score was measured for the sample firms. The findings reveal that there is a significant relationship between the ratio of debt to total assets and debt to the market value of the owner's equity. Additionally, there is no significant relationship between the ratio of the debts to the book value of the firms and the efficiency. Managerial ownership percentage and efficiency are significantly related while there is no significant association between institutional ownership and efficiency. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Taani (2013) empirically investigated the relationship between capital structure and firm performance across different industries using a sample of Jordanian manufacturing firms in Jordan. Multiple regression analysis was applied on performance indicators such as Return on Asset (ROA) and Profit Margin (PM) as well as Short-term debt to Total assets (STDTA), Long-term debt to Total assets (LTDTA) and Total debt to Equity (TDE) as capital structure variables. The annual financial statements of 45 manufacturing companies listed on the Amman Stock

Exchange were used for this study which covers a period of five (5) years from 2005- 2009. The results showed that there is a negative and insignificant relationship between STDTA and LTDTA, and ROA and PM; while TDE is positively related with ROA and negatively related with PM. STDTA significantly impacts ROA while LTDTA significantly impacts PM. The study concluded that statistically, capital structure is not a major determinant of firm performance. This study recommends that managers of manufacturing companies should exercise caution when choosing the amount of debt to use in their capital structure as it affects their performance negatively. The study did not include the mediating role of liquidity and the moderating effect of firm size.

Mwangi *et al.,* (2014) using the explanatory non-experimental research design and multiple regression analysis studied the relationship between capital structure and performance of non financial companies listed In the Nairobi Securities Exchange, Kenya. The study results revealed that financial leverage had a statistically significant negative association with performance as measured by return on assets (ROA) and return on equity (ROE). The study recommended that managers of listed non-financial companies should reduce their reliance on long-term debt as a source of finance. The study did not include the mediating role of liquidity and the moderating effect of firm size.

Birru (2016) using multiple regression models studied the impact of capital structure on financial performance of selected commercial banks in Ethiopia over the past five (5) year period from 2011 to 2015. The results of the study indicate that financial performance, which is measured by ROA, is significantly and negatively associated with capital structure. The study concluded that capital structure has a negative and insignificant effect on the financial performance of

commercial banks. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Cyril (2016) using descriptive statistics and the pooled ordinary least square (POLS) regression analytical method studied the effect of capital structure on the financial performance of conglomerates quoted on the floor of the NSE from 2011 to 2015. The study quantified four levels of dependent variables such as return on assets (ROA), return on equity (ROE), assets turnover ratio (AT) and earnings per share whereas the independent variable is financial leverage. The study found that capital structure has an effect on both ROA and AT of the conglomerates but no effect on ROE and EPS of the conglomerate. The study concluded that an in-depth analysis of business factors that affect a particular industry should be considered to obtain the benefits of the debt-equity mix. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Adekunle (2009) in a study to examine the impact of capital structure on the performance of firms among the Nigerian manufacturing firms, used debt ratio to a proxy for capital structure while return on asset and return on equity were used as measures of firms' performance. The study used the Ordinary Least Squares method of estimation. The result of the study indicated that debt ratio has a significant negative impact on the firm's financial measures of performance. The study, however, did not consider other financing decisions in the analysis, including the mediating effect of liquidity.

Javed and Akhtar (2012) using correlation and regression tests on financial data explored the relationship between capital structure and financial performance. They concluded that there is a positive relationship between financial leverage, financial performance, growth and size of the companies. The study focused on the Karachi Stock Exchange in Pakistan. The findings of the

study are consistent with the agency theory. This study however isolated the other financing decisions and focused only on financial leverage.

Pratheepkanth (2011) using multiple regression analysis studied the 210 Sri-Lankan firms listed in the Colombo Stock Exchange with a view of establishing how leverage affected the financial distress of the firms. The study spanned over the five years 2005-2009. In undertaking the study, leverage was measured by debt-equity ratio and total debt to total capital ratio while gross profit and net profit margins were adopted as measures of financial distress. The study found a negative but weak (insignificant) relationship between the key study parameters. The finding implied that increasing debt use reduced firms' level of productivity but to a lesser extent. The study focused on all the listed firms on Colombo Stock Exchange. The study should have focused on firms in a particular industry. Non financial firms for instance have a unique operating environment as compared to financial firms. Non financial firms also have a wide variety of firm financing options as compared to financial firms. The study was conducted for a short time. A longer time should have been considered.

Abdul (2012) using descriptive statistics, Pearson correlation coefficient and multiple linear regressions conducted a similar study to determine the relationship between capital structure decisions and the performance of firms in Pakistan. The study concluded that financial leverage has a significant negative relationship with firm performance as measured by ROA and Tobin's Q. The relationship between financial leverage and firm performance as measured by the return on equity (ROE) was negative but not statistically significant. The study recommended that other firm-specific factors can also be used with a wider period like dividends, taxes to gauge the impact and end with a more accurate outcome. The study concluded that other major economies can also be examined with different other industries to check the deviation of capital structure

formation. The study did not include the moderating effect of firm size and the intervening effect of liquidity. The study was conducted for a short period. A longer period should have been considered.

2.3.2 Capital Structure, Liquidity and Financial Performance

Saeedi and Mahmoodi (2011) using regression analysis studied the relationship between capital structure and firm financial performance of firms listed in Iran. The study used four financial performance indicators i.e. dependent variables (including ROA, EPS, ROE and Tobin's Q) and three capital structure measures as independent variables. These independent variables are total debt ratios, short and long-term debt. The findings reveal that firm financial performance as computed using Tobin's Q and EPS exhibit a significant positive relationship with capital structure while a negative relationship exists between capital structure and ROA. However, no significant relationship exists between ROE and capital structure. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Awunyo and Badu (2012) using regression methodology analysis, empirically investigated the relationship between capital structure or leverage and performance of listed banks in Ghana from 2000 to 2010. Data was collected from Ghana stock exchange and the annual report of the listed banks. The result revealed that the banks listed on the Ghana Stock Exchange are highly geared and this is negatively related to the banks' performance. The study showed that there is a high level of gearing among the listed banks. This can be attributed to their over dependency on short-term debt as a result there was a relatively high lending rate by the Bank of Ghana and a low level of bond market activities. The regression result also revealed that capital structure is inversely related to the performance of the listed banks in terms of return on equity and Tobin’s

Q. The study did not include the moderating effect of firm size and the intervening effect of liquidity. The study also focused on one industrial sector, the banking industry to the exclusion of other sectors.

Anthony and Chinaemerem (2012) using panel data analysis and ordinary least squares (OLS) as a method of estimation examined the impact of capital structure on the financial performance of Nigerian firms using a sample of thirty (30) non-financial firms listed on the Nigerian Stock Exchange during the seven years, 2004-2010. The result showed that a firm's capital structure surrogated by debt ratio has a significant negative impact on the firm's financial measures (Return on Asset, ROA, and Return on Equity, ROE). The conclusion of this study indicates consistency with prior empirical studies and provides evidence in support of agency cost theory. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Frieder and Subrahmanyam (2005) using multiple regression analysis conducted a study that sought to determine how debt financing affected financial performance among the Ghanaian listed firms. The authors sought to test the validity of the agency hypothesis of capital structure as propounded by Jensen and Meckling (1976) on the Ghanaian capital markets. Leverage was represented by the total debt to total capital ratio, while the current ratio was used as a proxy for liquidity. The authors found a significant and negative relationship between the study variables. They attributed the low liquidity levels to increased cash outflows in form of debt repayments. The findings were in support of the agency conflict hypothesis that provides for increased financial risk as a result of debt financing. This results in an increase in the financial burden (through loan interest payments) to the firm and hence low levels of free cash flows. The study did not consider the intervening effect of liquidity and the moderating effect of firm size.

Nassar (2016) did a study using multivariate regression analysis on the impact of capital structure on the financial performance of industrial companies in Turkey. The results show that there is a negative significant relationship between capital structure and firm performance. The study concluded that using a high level of debt negatively affects a firm's return on assets, earnings per share, and return on equity. The study did not include the moderating effect of firm size and the intervening effect of liquidity. The study also features only the data of one market of a developing economy so it cannot represent all the markets of transition economies.

Abor (2007) using random sampling with regression as the technique of analysis studied the effect of capital structure on the financial performance of SMEs in South Africa and Ghana, found that long-term debt and gross profit margin are positively related; whereas short-term debt has a significant and negative relationship with gross profit margin. The study also observed that the total debt ratio is also significantly and negatively related to gross profit margin. In Ghana, ROA had a significant and negative relationship with all the measures of capital structure. Stratifying the SMEs based on some measure would have yielded better results than simply randomizing the selection. The study did not include the effects of firm size and liquidity. The moderating and intervention analysis was not conducted.

Balasang *et al.*, (2013), empirically investigated the impact of capital structure on firms' performance. Multiple regression analysis was used in the study in estimating the relationship between leverage level and firms' performance. The author used four accounting-based measures of financial performance (return on equity (ROE), return on assets (ROA), market value of equity to the book value of equity (MBVR), Tobin's Q) and based on a sample of 85 firms listed on Tehran Stock Exchange from 2006 to 2011. The results indicated that firm performance as measured by (ROE, MBVR & Tobin's Q) is significantly and positively associated with capital

structure while reporting a negative relationship between capital structure and (ROA, EPS). The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Ogundipe *et al.,* (2012) using multiple regression undertook a study to assess the effect of debt structure on liquidity levels of the Nigerian listed firms over the period 2002-2010. Both short-term and long-term debt ratios were used to proxy debt structure while liquidity was measured by the ration of cash flow from operations to total assets and the working capital ratio. The results showed a significant positive relationship between long-term debt and liquidity. On the other hand, a significant inverse relationship between short term debt and liquidity ratios was observed. This finding agreed with the signaling effect theory of debt structure postulated by Ross (1977) which opined that higher levels of long term debt signify higher quality to the investors who respond by investing in the firm; effectively raising the cash flow levels. The study considered only one form of firm financing, by the use of debt. The equity form of firm financing was excluded. Furthermore, the study did not consider the intervening effect of liquidity and the moderating effect of firm size.

Ishaya and Abduljeleel (2014) used fixed-effects, random-effects and Hausman Chi Square estimations to examine the capital structure and profitability of Nigerian listed firms from the agency cost theory perspective. They found that debt is negatively related to profitability. However, they found out that equity is directly related to profitability. A sample of 70 out of a population of 245 firms listed at the Nigerian securities Exchange was used for the period 2000-2009. The findings are consistent with Shubita and Alsawalhal (2012) survey and also provide evidence against the agency cost theory. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Onyango *et al.*, (2016) using correlation, regression analysis and descriptive research design examined the impact of capital structure on the financial performance of firms at the RSE listing. The study results established a relationship between capital structure and ROA. Furthermore, capital structure is negatively associated with ROE. The study concludes that firms mitigate their leverage levels and have distinct working capital management guidelines to avoid bankruptcy. The study did not include the effects of firm size and liquidity. The moderating and intervention analysis was not conducted. The study furthermore was focused on the firms listed on RSE. A similar study should be carried out focusing on the firms listed on the NSE.

2.3.3 Capital Structure, Firm Size and Financial Performance

Wahome *et al.,* (2015) studied the effects of firm size and risk on the decisions regarding capital structure among the Kenyan Insurance Industry using the panel regression model. Results of the study indicated that the use of leverage in financing operations was more common among large insurance entities as compared to small ones. Among the reasons identified for limited use of leverage among small firms include asymmetric information (adverse selection), higher bankruptcy costs, huge costs of resolving informational asymmetries and greater agency costs. The study focused on the insurance sector in isolation of firms operating in other sectors such as manufacturing. The study was also done for a shorter time. A longer period of time should have been considered.

Mukulu *et al.*, (2016) using regression analysis studied the effect of functional integration on the performance of manufacturing firms in Nairobi and surrounding areas in Kenya. The study found out that firm size is not a moderator in the relationship between functional integration and firm financial performance. The study concluded that irrespective of firm size, functional integration

as a strategic capability is available to both small, medium and large manufacturing firms in Kenya. The study did not include the intervening variable (liquidity).This study is limited to manufacturing firms to the exclusion of those in other sectors.

Rayan (2010) conducted a 10-year longitudinal study of 113 firms listed in the Johannesburg Stocks Exchange, South Africa to determine the relationship between financial leverage and firm value. The debt-equity ratio was used as a construct for financial leverage while ROE, ROA, EPS and P/E ratio were used to proxy firm value. The study found a negative correlation between the use of debt in relation to equity and all measures of firm value; with the result that increased leverage decreased firm value among the Southern African firms. He attributed this negative relationship to excessive use of debt financing by firms in a bid to benefit from tax shields. The moderating effect of firm size and intervention effect of liquidity was not conducted. The study furthermore was focused on the firms listed on the Johannesburg Stocks Exchange. A similar study should be carried out focusing on the firms listed on the NSE.

Kodongo *et al.,* (2014) using multiple regression analysis undertook a study that sought to find out the effect of financial leverage on firm value of firms listed in Nairobi securities exchange, Kenya. The study covered the period 2002-2011; adopted debt equity ratio, total debt to total assets ratio and long-term debt to equity ratio as proxies of leverage while Tobin's Q ratio was used to measure firm value. Upon controlling for GDP growth, firm size, tangibility and growth in sales, the study found that financial leverage did not affect Tobin's Q. This finding was in agreement with the pioneering capital structure irrelevance hypothesis postulated by Modigliani and Miller (1958) but differed with that by Zeitun and Tian (2014)) whose similar study of 167 Jordanian companies during the period 1989-2003 showed a significant negative relationship

between debt ratios (leverage) and Tobin's Q. The study controlled firm size instead of determining its moderating effect. This study considered the moderating effect of firm size.

Ajlouni and Shawer (2013) using simple regression model explored the relationship between the capital structure and the profitability (measured by ROI, ROE and NPR) of the petrochemical industry firms in the Kingdom of Saudi Arabia, and the direction of this relation for the targeted firms during the period 2008-2011. The results revealed that there's no significant relationship between capital structure, ROI and ROE, while it showed a very weak relationship with NPR. This means that the profitability performance of the petrochemical industry firms in KSA is not relevant to capital structure, and other factors affect the profitability of these firms. The study did not consider the intervening effect of liquidity and the moderating effect of firm size.

Dogan (2013) using multiple regression and correlation analysis investigated the effect of firm size on profitability. In this study, data of 200 companies that were active in Istanbul Stock Exchange (ISE) between the years 2008-2011 was used. Return on Assets (ROA) was used as an indicator of firm profitability and total assets, total sales and numbers of employees were used as indicators of size. The result of the analysis indicates a positive relation between firm size indicators and the profitability of firms. Control variables such as the age of the firms and leverage rate were found in a negative relationship with ROA, but liquidity rate and ROA were found to have a positive relationship with ROA. The study did not consider capital structure. Furthermore, liquidity as an intervening variable was not considered in the study. This study considered the mediating effect of liquidity and sought to determine the effect of capital structure on the hypothesized relationship with financial performance.

Abdullah *et al.*, (2012), using regression analysis investigated the impact of capital structure on firm performance by analyzing the relationship between the operating performance of Malaysian

firms, measured by return on asset (ROA) and return on equity (ROE) with short-term debt (STD), long-term debt (LTD) and total debt (TD). Four variables were found by most literature to influence firm operating performance, namely, size, asset growth, sales growth and efficiency, are used as control variables. This study covers two major sectors in the Malaysian equity market which are the consumer and industrial sectors. The study found that only short-term debt (STD) and total debt (TD) have a significant relationship with ROA while ROE has a significant relationship on each debt level. However, the analysis with lagged values showed that none of the lagged values for short-term debt (STD), total debt (TD) and long-term debt (LTD) has a significant relationship with performance. The study controlled firm size instead of determining its moderating effect. This study considered the moderating effect of firm size. The study did not also consider the intervening role of liquidity. Furthermore, the study focused on only two sectors, the consumers and industrial sectors. The study should have considered all the non financial firms because they share a similar operating environment, unlike the financial firms that have a unique setting in terms of where they operate.

Muritala (2012) using unit root and Panel Least Square (PLS) examined the optimum level of capital structure through which a firm can increase its financial performance using annual data of ten firms spanning five years. The results from the unit root test showed that all the variables were at the nonstationary level. The study hypothesized a negative relationship between capital structure and operational firm performance. However, the results from Panel Least Square (PLS) confirmed that asset turnover, size, firm age and firm asset tangibility are positively related to a firm's performance. Findings provide evidence of a negative and significant relationship between asset tangibility and ROA as a measure of performance in the model. The implication of this is that the sampled firms were not able to utilize the fixed asset composition of their total assets

judiciously to impact positively on their firms' performance. The study concludes that asset tangibility should be a driving factor to capital structure because firms with more tangible assets are less likely to be financially constrained. The study did not consider the mediating effect of liquidity and the moderating effect of firm size.

Mwangi (2016) using multiple regression analysis studied the effect of financial structure on the financial performance of firms listed at East Africa Securities Exchanges. The study found out that in isolation, short term debt, long term debt, retained earnings and external equity had an insignificant negative effect on return on assets but insignificant positive effect on return on equity. While combined, financial structure had a significant positive and negative effect on return on equity and return on assets respectively. In addition, short term financing was found to be the preferred choice of financing through equity financing generally contributed more to financial performance. The study, therefore, concluded that pecking order theory may not be applicable in practice, at least at East Africa Securities Exchanges. The fact that different markets demonstrated different hierarchies of preference of financial sources, it is recommended that firms should look at and evaluate the political, economic, social and technological environment within their markets before making decisions on the mode of raising finance. It is also recommended that firms use shareholders' funds before borrowing; the East Africa Community should also hasten the integration process to tap the much needed foreign capital and aspire to expand and maintain their gross domestic products since they have a contingent effect on financial structure. The study focused on the East Africa Securities Exchanges. A similar study should be carried out paying a particular focus on the firms listed on the NSE. Furthermore, the study did not consider the intervening effect of liquidity and the moderating effect of firm size.

2.3.4 Capital Structure, Liquidity, Firm Size and Financial Performance

Mugai and Muriithi (2017) using regression analysis studied the moderating effect of firm size on the relationship between capital structure and financial distress of non-financial companies in Kenya. The findings showed that firm size has a strong moderating effect on the relationship between capital structure and the non-financial firms' financial distress. The study focused on non-financial firms to the exclusion of other firms listed at the NSE. Furthermore, the study did not consider the intervening effect of liquidity. The study should have included all the firms listed at the NSE. Liquidity also should have been considered in the study.

Zeb *et al.,* (2016) using multiple regression analysis studied the impact of liquidity and capital structure on the financial performance of cement sector firms. Debt to equity, debt ratio, funded capital ratio and funded debt ratio has a negative relationship with the firm financial performance of these selected cement sector firms. The results also indicated that liquidity proxies, i.e. quick ratio and current ratio have a significant positive impact on the financial performance of these cement sector firms. The study concludes that these firms' managers should take care of capital structure proxies as it negatively impacts financial performance. Furthermore, these managers should improve the mechanism of liquidity. The study considered liquidity as an independent variable instead of as an intervening variable. The moderating role of firm size was not considered. The study also focussed on only one industry, the cement sector firms. All the nonfinancial firms should have been considered because they have a unique operating environment as compared to financial firms. Nonfinancial firms furthermore have a wide variety of firm financing options as compared to financial firms.

Abbasi (2015) researched using regression analysis on the moderating effect of firm size on the relationship between firm growth and firm performance in Pakistan. The results of the regression analysis were that the size of the firm has a moderating impact on the independent variable (growth) and firm financial performance (dependent variable). The study concluded that the management should not only focus on firm growth but also firm size while examining firm financial performance. This study did not include the intervening variable (liquidity). The scope of this study is however relevant to firms' in few sectors and requires the incorporation of more sectors. The study also used a small sample size. A larger sample size should have been used by incorporating more firms.

Alfi and Safarzadeh (2016) using regression analysis studied the effect of capital structure and liquidity on firm value in the TSE in Iran. The results indicate a positive relationship between operating cash flows, intangible assets and firm size. The study also showed a negative relationship between financial leverage and firm value. The study concluded that an increase in liquidity would reduce firm value by eliminating investment opportunities. Managers, shareholders and creditors are recommended to consider the effect of capital structure and liquidity on firm value in their financial decisions. The study did not include the moderating effect of firm size and the intervening effect of liquidity.

Lee (2009) using the fixed effect dynamic panel data model and a sample of more than 7000 entities examined the role that firm size played in determining the profitability of the US publicly-held firms. The study showed that absolute firm size (total assets) had a significant nonlinear relationship with profitability measures; meaning that gains in profitability were reduced for larger firms. The study attributed the negative coefficient between the variables to the tendency by larger firms to finance their assets by a large amount of debt capital due to

increased borrowing capacity. The study did not take into consideration the effect of capital structure on firm financial performance. Furthermore, the study did not include the moderating effect of firm size and the intervening effect of liquidity.

Velnampy and Vickneswaran (2014) using multiple regression analysis examined the significant impact of capital structure (CS) and liquidity position (LP) on the profitability of listed telecommunication firms in the Colombo Stock Exchange (CSE). The study found out a significant impact of capital structure and liquidity position on profitability. The study concluded that listed telecommunication firms should heavily focus on their capital structure and liquidity position to enhance their profitability. Sri Lanka Telecom, on the other hand, should consider other factors which can influence or impact its profitability other than capital structure and liquidity position in the future. The study focused on capital structure and liquidity position only, to the exclusion of firm size that also influences the financial performance of listed firms.

Tamizhselvan (2010) using simple semi-logarithmic specification of the model and multiple regression analysis determined the relationship between firm size and profitability. The authors used natural logarithm of sales and total assets as measures of size and profit margin as well as profit to total assets as measures of profitability. The study found a positive and significant relationship between the two variables. In conclusion, the authors attributed the positive relationship to the fact that large firms could arrange for debt at discounted interest rates as well as refinance long term debt hence enjoy sustained liquidity to finance their capital projects. The findings mirrored those by Velnampy and Nimalathasan (2010) who conducted a study on the relationship between firm size and probability of financial distress of all the commercial banks in Sri Lanka over the period of 10 years from 1997 to 2006. The study did not take into

consideration the effect of capital structure on firm financial performance. Furthermore, the study did not include the moderating effect of firm size and the intervening effect of liquidity.

Okiro *et al.*, (2016) using multiple regression analyses and correlation analysis studied the effect of capital structure and corporate governance on the performance of firms listed at the East African Community Securities Exchange. The study affirmed that a positive significant intervening effect exists between capital structure (leverage) on the relationship between corporate governance and firm performance. Firm size and liquidity were not considered as moderating and intervening variables respectively. These variables (firm size and liquidity) are deemed to have an impact on the firms' financial performance conceptually. The study also did not take focus on the firms listed on the NSE which have a unique operating environment in terms of tax regimes compared to those other firms listed in the EACSE.

Muigai (2016) using descriptive statistics and panel regression analysis techniques sought to investigate the effect of capital structure on the financial distress of non-financial companies listed in the NSE. In accomplishing this overall objective, the study sought to establish the effect of financial leverage, debt maturity, equity structure and asset structure on the financial distress of non-financial firms. In addition, the study investigated the moderating effect of firm size and the listing sector on the relationship between capital structure and financial distress of the firms. The study concluded that financial leverage, asset tangibility and external equity have a significant negative effect on the financial distress of non-financial firms. Nevertheless, internal equity and long-term debt play a significant role in mitigating financial distress in non-financial firms. The study furthermore concluded that the firm size and the listing sector have a significant moderating effect on the relationship between capital structure and financial distress. The study

did not consider liquidity as an intervening variable. Liquidity is deemed to affect financial performance conceptually.

2.4 Summary of Literature Review and Key Gaps

The relationship between capital structure, liquidity, firm size and performance of listed firms is yet to deliver an empirically conclusive causal relationship amid these variables. A logical conclusion, based on the prior research, is that capital structure possesses a positive relationship with the performance of listed firms (Javed & Akhtar, 2012).

Conceptual and methodological research gaps are derived from the examination of the issues analyzed in this chapter. The conceptual gaps include a lack of harmony on the operationalization of the firm financial performance as a study variable. Zertun and Tian (2007) for instance used profitability as a proxy for firm financial performance. Profitability was measured by the company's ROA. Authors such as Saeedi and Mahmoodi (2011) used Tobin's Q to measure firm financial performance. Empirically, capital structure and firm financial performance relationship have no conclusion yet. This study has provided a chance for an empirical study to be undertaken with the introduction of a moderating and an intervening variable in the financial performance of the listed nonfinancial firms and capital structure relationship. Liquidity is introduced as an intervening variable and firm size as a moderating variable in an attempt to further explain this relationship. Methodological gaps include a lack of consensus in the operationalization methods used in the previous literature to measure firm financial performance.

Table 2.1 below gives a preview of studies done previously on the variables of capital structure, liquidity, firm size, and financial performance of listed firms. For each study, the findings and research gaps have been shown.

Table 2.1 Summary of Empirical Literature and Research Gaps

Researcher	Focus of the study	Methodology	Findings	Research Gap	How Gaps are Addressed in the Current Study
Frieder and Subrahmanyam (2005)	Effect of debt financing on financial performance among the Ghanaian listed firms.	multiple regression analysis	The findings of the study were that debt financing had a negative effect on financial performance	The study did not consider the intervening effect of liquidity and the moderating effect of firm size.	The moderating impact of firm size and the intervening impact of liquidity were considered
Abor (2007)	Effect of capital structure on the financial performance of SMEs in South Africa and Ghana	Random sampling with regression analysis as the technique	The findings of the study were that long-term debt and gross profit margin are positively related; whereas short-term debt has significant and negative relationship with gross profit margin	The study did not include the effects of firm size and liquidity. The moderating and intervention analysis were not conducted.	The moderating and intervening effect of firm size and liquidity were considered respectively
Zertun and Tian(2007) .	Relationship between capital structure and the financial performance of firms listed in Iran	cross sectional pooled OLS regression model	The conclusion of the study was that there exists a statistically strong inverse effect of capital structure on the firm's financial performance	Intervening and moderating variables were lacking in the study	The moderating impact of firm size and the intervening impact of liquidity were considered
Adekunle (2009)	Impact of capital structure on the performance of firms: evidence from Nigerian manufacturing firms	Ordinary Least Squares method of estimation and multiple regression analysis	The result of the study indicated that debt ratio has a significant negative impact on the firm's financial performance measures.	The study, however, did not consider other financing decisions in the analysis, including the mediating effect of liquidity.	The mediating effect of liquidity was considered

Biglar and Salehi (2009)	Impact of capital structure decision on firms' performance	multiple regression analysis	The results of the study demonstrated that capital structure influences financial performance.	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating impact of firm size and the intervening impact of liquidity were considered
Lee (2009)	Role that firm size played in determining the profitability of the US publicly-held firms.	Fixed effect dynamic panel data model	The study showed that absolute firm size (total assets) had a significant nonlinear relationship with profitability measures; meaning that gains in profitability reduced for larger firms.	The study did not take into consideration of the effect of capital structure on firm financial performance. Furthermore, the study did not include the moderating effect of firm size and the intervening effect of liquidity.	The effect of capital structure on firm financial performance was considered. Furthermore the moderating and intervening effect of firm size and liquidity were considered respectively
Rayan (2010)	Relationship between financial leverage and firm value.	a 10-year longitudinal study	The study found a negative correlation between use of debt in relation to equity and all measures of firm value; with the result that increased leverage decreased the firm value among the Southern African firms	The moderating and intervention analysis were not conducted. The study furthermore was focused on the firms listed on the Johannesburg Stocks Exchange	The moderating effect of firm size was considered. Furthermore, the study l focused on the Nairobi Securities Exchange
Tamizhselvan (2010)	Relationship between firm size and profitability	simple semi-logarithmic specification of the model and multiple regression analysis	The study found a positive and significant relationship between firm size and profitability	The study did not take into consideration of the effect of capital structure on firm financial performance. Furthermore, the study did not include the	The effect of capital structure on financial performance was considered. Furthermore, the moderating and intervening effect of

				moderating effect of firm size and the intervening effect of liquidity.	firm size and liquidity was considered respectively
Pratheepkanth (2011)	Effect of leverage on financial distress of the 210 firms listed in the Colombo stock exchange	Multiple regression analysis	The study found a negative but weak (insignificant) relationship between the key study parameters. The implication of the finding was that increasing debt use reduced the firms' level of productivity but to a lesser extent.	The study was conducted for a short period of time	A longer period of time was considered.
Abdullah *et al.*, (2012),	Impact of capital structure on firm performance by analyzing the relationship between operating performance of Malaysian firms, measured by return on asset (ROA) and return on equity (ROE) with short-term debt (STD), long-term debt (LTD) and total debt (TD).	regression analysis	The study found that only STD and TD have a significant relationship with ROA while ROE has a significant relationship on each debt level. However, the analysis with lagged values showed that none of the lagged values for STD, TD and LTD has significant relationship with performance.	This study did not consider the moderating effect of firm size. The study did not also consider the intervening role of liquidity. Furthermore, the study focused on only two sectors, the consumers and industrial sectors	The moderating and intervening effect of firm size and liquidity were considered respectively. The study also focused on all the listed nonfinancial firms

Saeedi and Mahmoodi (2011)	Capital structure and financial performance relationship of firms listed in Iran	Regression analysis	The findings show that there is a positive relationship between market performance measures of capital structure.	The study did not include the intervening and moderating variables	The moderating and intervening effect of firm size and liquidity were considered respectively
Awunyo and Badu (2012)	Relationship between capital structure or leverage and performance of listed banks in Ghana from 2000 to 2010.	regression analysis	The result revealed that the banks listed on the Ghana Stock Exchange are highly geared and this is negatively related to the banks performance. The study showed that there is high level gearing among listed banks.	The study did not include the moderating effect of firm size and the intervening effect of liquidity. The study focused on the commercial banks to the exclusion of non financial firms	The moderating and intervening effect of firm size and liquidity were considered respectively. All the listed non financial firms on the NSE were considered in the study
Javed and Akhtar (2012)	Relationship between capital structure and financial performance.	correlation and regression analysis	The study found a positive relationship between financial leverage, financial performance, growth and size of the companies.	The study isolated the other financing decisions and focused only on financial leverage.	The study considered other firm financing options such as equity financing
Ogundipe *et al.*, (2012)	Effect of debt structure on liquidity levels of the Nigerian listed firms over the period 2002-2010.	Multiple regression analysis	The results showed a significant positive relationship between long term debt and liquidity. On the other hand, a significant inverse relationship between short term debt and liquidity ratios was observed.	The study considered only one form of firm financing by use of debt. Equity form of firm financing was excluded. Furthermore, the study did not consider the intervening effect of liquidity and the moderating effect of firm size.	The study considered all forms of firm financing. Furthermore, the study considered both the moderating and intervening effect of firm size and liquidity respectively

Ajlouni and Shawer (2013)	Relationship between capital structure and profitability (measured by ROI, ROE and NPR) of the petrochemical industry firms in the Kingdom of Saudi Arabia,	simple regression model	The results revealed that there is no significant relationship between capital structure and ROI and ROE, while it showed a very week relationship with NPR	The study did not consider the intervening effect of liquidity and the moderating effect of firm size.	The moderating and intervening effect of firm size and liquidity were considered respectively
Balasang *et al.*, (2013),	Impact of capital structure on firm's performance	Multiple regression analysis	The results indicated that firm performance, which is measured by (ROE, MBVR & Tobin's Q) is significantly and positively associated with capital structure, while reporting a negative relationship between capital structure and (ROA, EPS).	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating and intervening effect of firm size and liquidity were considered respectively
Dehnavi and Hosseinzade (2013)	Effect of capital structure on the performance of the listed companies on the Tehran Stock Exchange.	Multivariate regression by using panel data method	The results of the study demonstrated that capital structure influences financial performance.	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating and intervening effect of firm size and liquidity were considered respectively
Dogan (2013)	Effect of firm size on profitability	multiple regression and correlation	The result of analysis indicates a positive relation between firm size indicators and profitability of firms.	The study did not take capital structure into consideration. Furthermore, liquidity as an intervening variable was not considered in the study.	This study considered the mediating effect of liquidity

Ishaya and Abduljeleel (2014)	Capital structure and profitability of the Nigerian listed firms from the agency cost theory perspective	Fixed-effects, random-effects and Hausman Chi Square estimations	The study found that debt is negatively related with profitability but equity is directly related with profitability.	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating and intervening effect of firm size and liquidity were considered respectively
Kodongo *et al.*, (2014)	Effect of financial leverage on firm value of firms listed in Nairobi securities exchange, Kenya	Multiple regression analysis	The study findings upon controlling for the GDP growth, firm size, tangibility and growth in sales, found that financial leverage had no effect on Tobin's Q.	The study controlled firm size instead of determining its moderating effect	The study considered the moderating effect of firm size
Mwangi *et al*(2014)	Capital structure and performance of non financial companies listed in the Nairobi Securities Exchange	explanatory non-experimental research design and multiple regression analysis	The findings show financial leverage has a statistically significant negative association with performance as measured by return on assets (ROA) and return on equity (ROE).	The study did not include the mediating role of liquidity and the moderating effect of firm size.	The moderating and intervening effect of firm size and liquidity were considered respectively
Abbasi (2015)	Firm size moderating effect on the relationship between firm growth and firm financial performance in Pakistan	Regression analysis	The regression analysis output shows that firm size has a moderating impact between firm growth (the independent variable) and firm financial performance (the dependent variable).	The study did not include the intervening effect of liquidity	The intervening effect of liquidity was considered in the study

Wahome *et al.*, (2015)	Effects of risk and firm size on the capital structure decisions of the Kenyan insurance industry	Panel regression model	The findings of the study showed that the use of leverage in financing operations is more common among large insurance firms compared to small ones**.**	The study focused on the insurance sector in isolation of firms operating in other sectors such as the manufacturing.	The study used all the non-financial firms at the NSE listing.
Alfi and Safarzadeh(2016)	Effect of capital structure and liquidity on firm value in the TSE in Iran.	Regression analysis	The results indicate a positive relationship between operating cash flows, intangible assets and firm size. The study also showed a negative relationship between financial leverage and firm value.	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating impact of firm size and the intervening impact of liquidity were considered
Birru(2016)	Impact of capital structure on financial performance of selected commercial banks in Ethiopia	Multiple regression models	The results of the study indicate that financial performance, which is measured by ROA, is significantly and negatively associated with capital structure	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating impact of firm size and the intervening impact of liquidity were considered
Cyril (2016)	Effect of capital structure on the financial performance of conglomerates quoted on the floor of the NSE from 2011 to 2015	Descriptive statistics and the pooled ordinary least square (POLS) regression	The study found that capital structure has an effect on both ROA and AT of the conglomerates but no effect on ROE and EPS of the conglomerate.	The study did not include the moderating effect of firm size and the intervening effect of liquidity.	The moderating impact of firm size and the intervening impact of liquidity were considered

Mukulu *et al* (2016)	Effect of functional integration on the performance of manufacturing firms in Nairobi and surrounding areas in Kenya	Regression analysis	The study found out that firm size is not a moderator in the relationship between functional integration and firm financial performance.	This study is limited to manufacturing firms to the exclusion of those in other sectors.	The study used all the non financial firms at the NSE listing.
Muigai(2016)	Effect of capital structure on financial distress of non-financial companies listed in NSE.	Descriptive statistics and panel regression analysis	The study concluded that financial leverage, asset tangibility and external equity have a significant negative effect on financial distress of non-financial firms. Nevertheless, internal equity and long term debt play a significant role in mitigating financial distress in non-financial firms.	The study did not consider liquidity as an intervening variable	Liquidity as an intervening variable was considered.
Mwangi(2016)	Effect of financial structure on financial performance of firms listed at East Africa Securities Exchanges	Multiple regression analysis	The study found out that in isolation, short term debt, long term debt, retained earnings and external equity had insignificant negative effect on return on assets but insignificant positive effect on return on equity. While combined, financial structure had a significant positive and negative effect on return on equity and	The study focused on the East Africa Securities Exchanges	The study focused on the Nairobi Securities Exchange

			return on assets respectively.		
Nassar(2016)	effect of capital structure on the financial performance of industrial companies in Turkey	Multivariate regression analysis	The results show that a strong negative relationship exists between capital structure and firm financial performance. The study concluded that the use of high debt levels negatively affects a firm's ROA, EPS and ROE.	The study did not include the intervening and moderating variables	The moderating impact of firm size and the intervening effect of liquidity were considered
Okiro *et al.*, (2016)	The impact of capital structure and corporate governance on performance of firms at the East African Community Securities Exchange listing	Regression analysis	A strong positive relationship was established between corporate governance and the performance of the firms. It was also concluded that there exists a significant positive intervening effect of leverage on the relationship between corporate governance and the firms' performance.	The study did not take into consideration of firm size and liquidity as a moderating and intervening variable respectively. The study also did not take focus on the firms listed on the NSE which have a unique operating environment in terms of tax regimes.	Firm size moderating effect and the intervening effect of liquidity were considered. The study also focused on all firms listed on the NSE
Onyango *et al.*, (2016)	The impact of capital structure on financial performance of firms at the RSE listing	correlation, regression analysis and descriptive research design	The finding of the study was that liquidity is a good mediator between firm performance and	The study did not have moderating and intervening variables. The study also was	Moderating effect of firm size and the intervening effect of liquidity were

			dividend payout.	focused on the firms listed on RSE	considered. Focus was on all the non financial firms listed on the NSE.
Zeb *et al.*, (2016)	Impact of liquidity and capital structure on the financial performance of Cement sector firms	multiple regression analysis	The results indicated that liquidity proxies, i.e. quick ratio and current ratio have significant positive impact on the financial performance of cement sector firms	The study considered liquidity as an independent variable instead of as an intervening variable. Furthermore, the moderating role of firm size was not considered. The study also focused on only one industry; the cement sector firms.	Moderating effect of firm size and the intervening effect of liquidity was considered. Focus was on all the non-financial firms listed on the NSE.
Mugai and Muriithi (2017)	Firm size moderating impact on the relationship between capital structure and financial difficulties of listed non-financial firms in Kenya	Regression analysis	The findings show that ownership by government on firm financial performance having firm specific factors under control is significant. This includes growth, leverage and firm size.	The study did not include the intervening effect of liquidity. Furthermore, the study focused on non-financial firms to exclusion of other firms listed at the NSE	The intervening effect of liquidity was considered in the study. Furthermore, non-financial firms listed at the NSE were considered in the study

2.5 Conceptual Framework and Research Hypothesis

This section discusses the independent, intervening, moderating and dependent variables, followed by the conceptual model and research hypotheses. The conceptual model is shown in Figure 2.1 and depicts the inter-relationships between the variables as envisaged.

2.5.1 Conceptual Framework

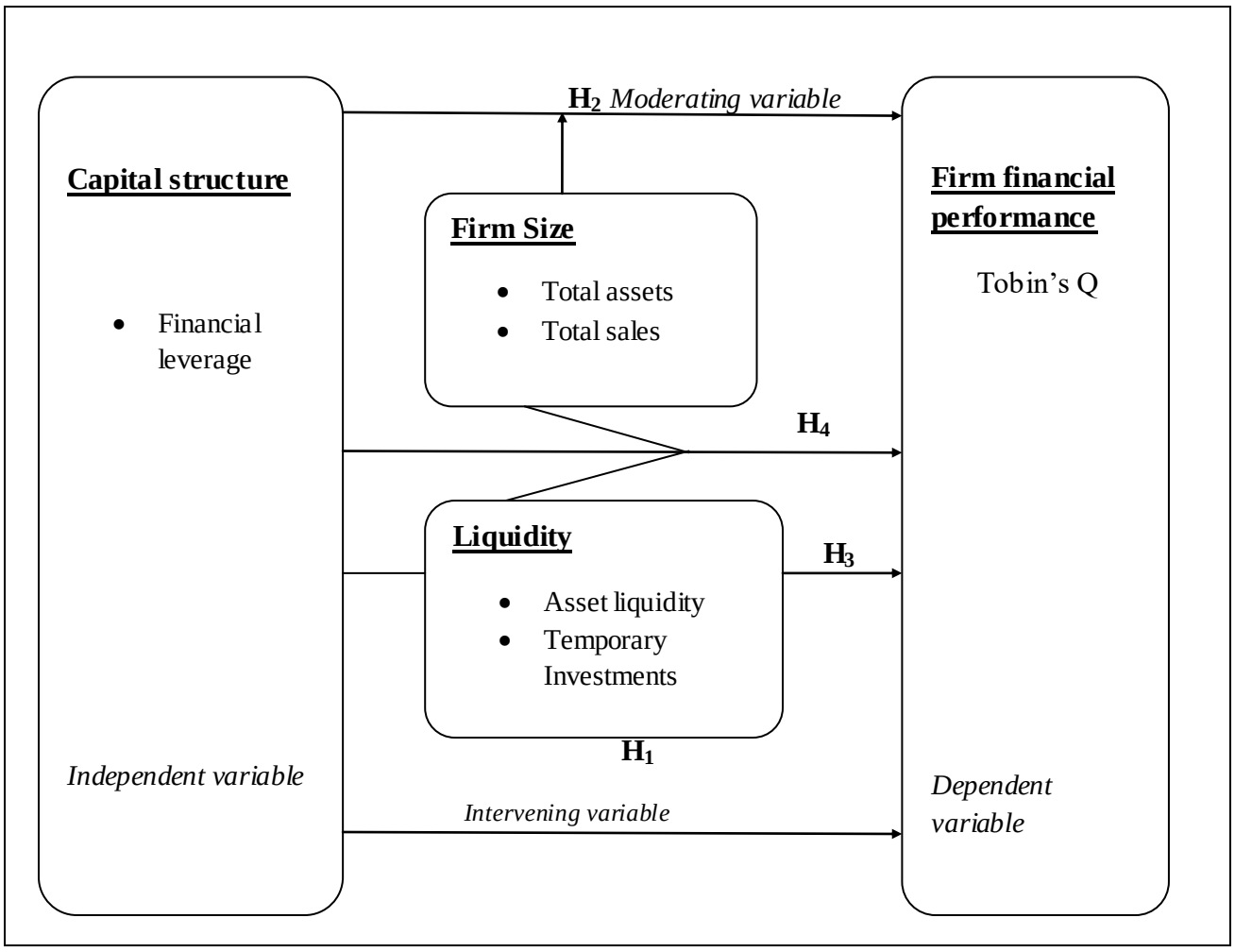
The focus of this study is the relationships among CS, firm size, liquidity and financial performance. This study's dependent variable is financial performance. The study measures the performance of a firm using Tobin's Q. This ratio tests whether a firms' financial performance is a result of the firm having sufficient liquidity or due to good capital structure choice. The independent variable is CS. Capital structure choice is vital due to the cost of capital implications that result from the use of debt financing. CS decisions are motivated by the trade-off among the effects of personal, corporate taxes, agency costs and bankruptcy costs. Bolton and Scharfstein (1998) for instance posit that more output is realized when the levels of debt are increased both at firm and industry level thereby making competition stiffer. The result of such competition among firms leads to an increase in a firm's financial performance.

Firm size is assumed to moderate the link between capital structure and firm financial performance. Firm size is considered to influence capital structure choice. The decision on whether to use debt or equity affects a firm financial performance. According to Muigai and Muriithi (2017), firm size has a strong moderating impact on the relationship between nonfinancial firms' capital structure and financial distress. Liquidity is considered as an intervening variable on the link between capital structure and the financial performance of the

firm. Firms that are highly leveraged tend to be liquid. Williamson (1988) contends that the logic for a positive impact of leverage on asset liquidity lies in the notion that less liquid assets attract higher liquidation costs, debt, and bankruptcy. Therefore, highly leveraged firms need higher liquidity of assets to reduce the likelihood of default. Highly liquid firms tend to have increased financial performance due to their ability to meet their current and long-term financial obligations and avoid costly defaults.

Figure 2.1 shows the conceptual framework used in the research study. The independent variable is Capital structure. The dependent variable is firm financial Performance. The intervening variable is Liquidity and the moderating variable is Firm Size.

Figure 2.1: Conceptual Model



2.5.2 Research Hypotheses

This study sought to establish the intervening and moderating effect of liquidity and firm size respectively on the relationship between capital structure and firm financial performance of listed non-financial firms by testing the below set of null hypotheses;

H_{01}: There is no relationship between capital structure and financial performance of non-financial firms listed at the NSE.

H_{02}: The relationship between capital structure and performance of non-financial firms listed at the NSE is not intervened by liquidity.

$H_{02:a}$: The relationship between capital structure and financial performance of non financial firms listed on the NSE is not intervened by asset liquidity.

$H_{02:b}$: The relationship between capital structure and financial performance of non financial firms listed on the NSE is not intervened by temporary investments.

H_{03}: The relationship between capital structure and financial performance of non financial firms listed at the NSE is not moderated by firm size.

$H_{03:a}$: The relationship between capital structure and financial performance of non financial firms listed on the NSE is not moderated by total assets.

$H_{03:b}$: The relationship between capital structure and financial performance of non financial firms listed on the NSE is not moderated by total sales.

H_{04}: The joint effect of capital structure, firm size and liquidity on the financial performance of non financial firms listed at the NSE is not significant.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes methods of research that were applied to objectively conduct the proposed study. The section shows the research philosophy, research design, data collection techniques, the reliability, validity of measurement instruments and the procedure through which data was analyzed.

3.2 Research Philosophy

Research is defined by Proctor (1998) as a process to find out the unknown. A critical phase in doing social science research is to decide and validate the preferred research philosophy embraced by the researcher. Interrelated paradigmatic conventions concerning the nature of reality, the researcher's role and the research process initiate scientific research. Research philosophy is the primary essential credence that supports the options that need to be selected in taking a position in research. Philosophy has consequences on what, how and why research is conducted (Carson *et al.*, 2001).

According to Blumberg *et al.*, (2005), two unique research philosophies stand out from the different research approaches that exist. These are the positivistic paradigm and the phenomenological paradigm (Salkind & Miller, 2002).This study was anchored on a positivism research philosophy because it is based on existing theory and it formulates quantitative hypotheses to be tested. The existing theories elucidated in this study included the capital irrelevance theory, the pecking order theory, the trade off theory, the agency cost theory and the signalling theory. The choice of positivism research hypothesis is based on the fact that in order

to empirically establish the relationships between the variables, hypotheses formulated was tested and findings generalized. The study variables capital structure, firm size, liquidity and financial performance were empirically tested to determine the relationship that exists among them.

According to Remenyi and Williams (1998) positivism is less concerned with impressions but facts which are close to the concept of 'notable social reality'. Positivism philosophy involves the use of large samples to produce quantitative data and testing of hypothesis and theory. Data that was employed in this study was obtained from the financial statements of all the non financial firms. The data obtained on these study variables was operationalized. This data was then analysed quantitatively. Baroudi and Orlikowski (1991) state that positivism are hypotheses testing, measures of variables and the formulating of conclusions about a phenomenon from a given population's sample. The study also involves formulating hypotheses from a given study population of all the listed nonfinancial firms at the Nairobi Securities Exchange. These hypotheses were then tested, inferences made about them and conclusions drawn from the study population.

3.3 Research Design

There are three basic types of research design: exploratory, causal and descriptive. The goal of exploratory research is to discover ideas and insights. Causal research is used to establish cause-and-effect relationships between variables while descriptive research is usually concerned with describing a population with respect to important variables. The key objectives of descriptive designs are descriptions of phenomena or characteristics associated with a subject population,

estimates of the proportions of a population that have these characteristics and discovery of associations among different variables (Cooper and Schindler, 2003).

Descriptive designs involve three main methods namely survey studies which describe the status quo, the correlation studies which investigate the relationship between variables and developmental studies which seek to determine changes over time. This study sought to investigate the relationship among capital structure, firm size, liquidity and financial performance. Therefore, this study made use of the correlation analysis in order to determine the interrelationship among the study variables. Descriptive designs can also be categorized either as cross-sectional which involves drawing a sample of elements from the population of interest and measuring characteristics of the elements only once or longitudinal where sample members are measured repeatedly over time (Sekaran, 1992).This study employed cross-sectional which involves research design that involves measuring the study variables of capital structure, firm size, liquidity and financial performance.

This study therefore used a correlational descriptive research design. Correlational descriptive research design is used to describe relationships, as they exist, between specific variables. The relationship between capital structure and financial performance is determined. The moderating effect of firm size on the relationship between capital structure and financial performance is also determined. Furthermore, the intervening effect of liquidity on the relationship between capital structure and financial performance is established. Sekaran (1992) indicates that a wide spectrum of descriptive studies exists such as undertaking in-depth descriptions of specific individuals, social events, groups, companies or social artefacts. Alternatively, researchers may also focus on the frequency with which a specific characteristic or variable occurs in a sample. Furthermore, Collis and Hussey (2003) notes that the description of phenomena may range from a narrative

type of description (as in historic and discourse analyses) to a highly structured statistical analysis (as is the case in correlation studies). This study employed the use of historical data on firm size, capital structure, liquidity and financial performance from the financial statements of listed non financial firms from the year 2010 to 2017.

Research design is the outline employed to direct a research study to make certain that the research addresses the study problem (Gorard, 2013).Various research designs described by research experts such as Cooper and Schindler (2006),Mugenda and Mugenda (1999) as well as the purpose of the study were considered. The philosophical tradition adopted, the topical scope, researcher involvement, time period over which the data was collected, the nature of the data and the type of data analysis, the study design and the cross sectional descriptive design were also considered.

This study sought to establish relationships among capital structure, firm size, liquidity and financial performance of non financial firms listed at the NSE. Since the study deals with events that are past occurrences, a descriptive cross-sectional design was suitable for data collection from the NSE to establish the relationships between the variables under study over a seven year period from January, 2010 to December, 2017.

Gravetter and Forzano (2011) posit that descriptive research design involves measuring a set of variables as they exist naturally. Houser (2011) notes that it is designed to provide in-depth information about the characteristics of subjects within a particular field of study, thus, it can help identify relationships between variables.

3.4 Population

This study's unit of analysis are the listed firms and the target population was all the listed non-financial firms at the NSE. The choice on of non financial firms was based on the fact that they have the broadest menu of financing choices and can adjust their capital structures at relatively low cost (Myers, 2001). Nonfinancial firms also tend to face liquidity problems in meeting their short-term financial obligations as compared to financial firms. Financial services firms are also excluded in this study since they are the companies that provide leverage and other debt services to the non-financial firms.

Furthermore, the decision to base this study on non-financial firms derives from the fact that unlike financial firms whose capital holding is strictly regulated by the CBK, capital holding regulations do not apply among listed non-financial firms in spite of all listed firms falling under the purview of CMA. This means that non-financial firms are technically at liberty to adopt any capital structure configuration favourable to them in financing their operations. This laissez-faire approach predisposes non-financial firms to possibilities of over-gearing, subsequent distress and decreased financial performance (Bitok, Masulis, Graham, & Harvey, 2011).

A census survey was conducted since the size of the population was small. There are a total of fifty three (53) non-financial companies listed at the NSE listing as at 31stDecember, 2017.The intention of this study was to include all the 53 listed non-financial companies (attached as appendix 2) from 2010 to 2017 by using unbalanced panel data. The list of quoted non financial companies was obtained from the NSE database.

3.5 Data Collection

According to Burns and Grove (2010) data collection is the precise gathering of information relevant to the research sub-problems, using methods such as interviews, participant observations, focus group discussion, narratives and case histories. The study used quantitative secondary data.

The reliability and validity of a study can be seriously jeopardised if incorrect data collection methods are employed. Consequently, great care was taken to utilise acceptable methods. The research objectives pertain to the positivistic dimension of this study. The implication is that appropriate procedures for the sourcing of secondary quantitative data need to be planned and executed.

Quantitative secondary data on capital structure, firm size, liquidity and financial performance was collected from annual financial statements in the NSE website. Data on capital structure was determined by obtaining debt and equity employed by the listed non financial firms in their various operations. Current assets, current liabilities and temporary investments were used to determine the asset liquidity of the listed nonfinancial firms. Total assets and total sales were used to determine firm size. The book values of total equity and total assets were used to determine the financial performance of the listed non financial firms. Secondary data on capital structure, liquidity, firm size and financial statements was used because it gives reliable results as compared to primary data. Secondary data was mainly a seven-year (2010-2017) annual historical data on the listed non financial firms' financial performance. The study period 2010 to 2017 was chosen because in that time many non financial firms faced financial distress, bankruptcies and takeovers.

3.6 Operationalization of Study Variables

The variables in this study, namely capital structure, firm size, liquidity and financial performance were operationalized in accordance with previous studies. The independent variable capital structure with financial leverage as the indicator is measured using debt to equity ratio while Tobin's Q which is the dependent variable is used to measure firm financial performance of the listed non financial firms.

Liquidity is the intervening variable and is measured by current ratio, quick ratio and liquidity ratio whereas firm size is the moderating variable with total sales and total assets as the indicators. Firm size is measured by natural log of total assets and natural log of total sales.

3.6.1: Operationalization of Capital Structure

Capital structure is the debt and equity capital employed and existing in a company. Capital structure has financial leverage as the indicator. Financial leverage gives the amount of debt employed in the firm as compared to the amount of equity in its capital structure. Capital structure is operationalized based on Akhtaruddin, *et al.,* (2009). Financial leverage indicator is operationalized by Debt/Equity ratio. See table 3.1 below.

3.6.2: Operationalization of Liquidity

Liquidity is the ability of a firm to meet its short term obligations (Bhunia, 2010). Liquidity has asset liquidity and temporary investment ratio as indicators. Asset liquidity indicator is operationalized by current assets to current liabilities based on (Jorion, 2001). Liquidity was used as an indicator because it indicates the ability of the firm in meeting its short-term financial obligations. Temporary investment ratio indicator is operationalized by total current assets-

Inventory-Prepaid expenses)/Current Liabilities based on (Kim *et al.,* 1998). Temporary investments ratio was used as an indicator because it indicates ability of the firm to meet short-term obligations that include investments. See table 3.1 below.

3.6.3: Operationalization of Firm size

Firm size can be defined in terms of total assets held by an organization (Pandey, 2015). Frank and Goyal (2009) define firm size as being determined by the natural logarithm of total assets of the firm. Firm size has been identified with total assets and total sales indicators. Total assets can be operationalized by natural logarthim of total assets (Akhtaruddin, *et al.,* 2009).Total sales is operationalized by natural logarithm of total sales (Demsetz & Lehn,1985). Total assets are resources with economic value that a firm owns or controls with the expectation that it will provide a future benefit and generate cash flows, reduce expenses, or improve sales and total sales. Total sales are the grand total of all sales revenues a business generates from normal activities. This is a vital number for any business because it gives the starting point for determining a firm's net income or net profit. Therefore, total assets and total sales are indicative of firm size. See table 3.1 below.

3.6.4: Operationalization of Financial Performance

There is no single index to explain firm financial performance. This has led to the reluctance in the application of both non-financial and financial measures of performance of a business entity (Chakravarthy, 1986). Financial performance is an evaluation of the firm’s ability to utilize its current assets while undertaking its daily business activities to generate income (Macleod & Baxter, 2007).

Financial performance has Tobin's Q as the indicator based on (Kabir & Dey, 2012). Tobin Q is a stock market-based measure and comprehensively measures firm financial performance. Tobin's Q is operationalized by the book values of total equity and total assets=Market capitalization + (Total assets –equity)/Total assets. See table 3.1 below.

Table 3.1: Summary of Operationalization of Study Variables

Variable	Indicators	Measure	Scale	Source
CAPITAL STRUCTURE (INDEPENDENT VARIABLE)				
	Financial leverage	Debt/Equity ratio	ratio	Akhtaruddin, *et al.*, (2009
LIQUIDITY(INTERVENING VARIABLE)				
	Asset liquidity	current assets to current liabilities	ratio	Adopted from Jorion (2001)
	Temporary investment	ratio of temporary investments to total assets	ratio	Kim *et al.*, (1998)
FIRM SIZE(MODERATING VARIABLE)				
	Total assets	Natural logarithm of total assets	ratio	Akhtaruddin, *et al.*,(2009)
	Total sales	Natural logarithm of total sales	ratio	Demsetz and Lehn(1985)
FIRM FINANCIAL PERFORMANCE(DEPENDENT VARIABLE)				
	Tobin's Q	The book values of total equity and total assets: Q=Market capitalization +(Total assets –equity)/Total assets	ratio	Adopted from Kabir & Dey (2012).

Source: Author, 2019

3.7 Data Analysis

Zikmund *et al.,* (2013) define data analysis as the application of reasoning to understand the data that has been gathered with the aim of determining consistent patterns and summarizing the

relevant details revealed in the investigation. Sekran (2006) suggests a four step approach in data analysis namely, get the data ready for analysis (editing for accuracy, consistency and completeness), get a feel of the data (descriptive statistics, test the goodness of fit (diagnostic tests) and finally hypothesis testing. The statistical package for social sciences (SPSS) version 25 and statistical software package (STATA) were used for the data analysis. The study used correlation and multiple regression analysis to establish the relationship between capital structure and financial performance of non-financial firms listed on the NSE.

The data obtained on capital structure, liquidity, firm size and financial performance was analyzed through use of descriptive statistics. Regression analysis was used to establish the nature and magnitude of the relationships between the study variables and to test the hypothesized relationships. The Baron and Kenny (1986) approach was used to test the intervening and moderating effect of liquidity and firm size respectively, on the relationship between capital structure and firm financial performance.Pearson's correlation analysis was employed to ascertain the degree of linear relationship between the study variables. Diagnostic tests were carried for Serial Independence Test, Cointegration test, Panel Unit root test, Multicollinearity test, Homogeneity of Variance test, Linearity Test and Normality Test.

3.7.1 Capital structure and Financial Performance

To determine the relationship between capital structure and financial performance (objective i), the first hypothesis (H_1) was tested by the following model;

$Y=\beta_0+\beta_1 X_1 +\varepsilon$.....3.1

Y=Firm financial Performance,

B_0=intercept, X_1=CS, β_1, β_2, β_3, β_4= coefficients, ε= Error term

Where Y and CS are vectors for firm financial performance and capital structure respectively.

3.7.2 Capital structure, Liquidity and Financial Performance

To test the intervening effect of liquidity on the relationship between capital structure and financial performance (objective iii), the two sub-hypotheses under the second hypothesis (H2) were tested using the process advocated by Baron and Kenny (1986). Four steps were followed to test the mediating effects of liquidity on the relationship between capital structure and financial performance. Furthermore, the mediating effects of temporary investments on the relationship between capital structure and financial performance were also carried out. In step one of the mediation model, regression analysis was performed to assess the relationship between financial performance (dependent variable) and capital structure (independent variable) while ignoring asset liquidity and temporary investments (the mediator).

In the second step of the mediation analysis, regression analysis was performed to assess the relationship between liquidity (asset liquidity and temporary investments), the intervening variables and capital structure (independent variable) ignoring the dependent variable (financial performance). In the third step of the mediation analysis, regression analysis was performed to assess the relationship between liquidity (asset liquidity and temporary investments), the intervening variables and financial performance (dependent variable) while ignoring the independent variable (capital structure). The fourth step of the mediation analysis was performed to assess the relationship between financial performance (dependent variable), liquidity (asset liquidity and temporary investments) the intervening variable, and capital structure (independent variable). Mediation (intervention) occurs if capital structure predicts liquidity (asset liquidity

and temporary investments), liquidity (asset liquidity and temporary investments) predicts financial performance and still capital structure predicts when liquidity (asset liquidity and temporary investments) is in the model.

3.7.3 Capital structure, Firm Size and Financial Performance

Multiple regression model was used to determine the moderating effect of firm size (total assets and total sales) on the relationship between capital structure and financial performance (objective ii) in line with the methodology suggested by (Baron& Kenny, 1986). The third hypothesis (H_3) was tested by the following model;

$Y= \beta_0+\beta_1X_1+\beta_2X_2+ \beta_3U+\varepsilon$.....3.2

Y=Firm financial Performance,

B_0=intercept, X_1=CS, X_2=Firm Size, β_1, β_2, β_3= coefficients, U=interaction term of Capital Structure & Firm Size= Error term

Where Y and CS are vectors for financial performance and capital structure respectively

3.7.4 Capital structure, Liquidity, Firm Size and Financial Performance

To determine the joint effect of capital structure, liquidity (asset liquidity & temporary investments), and firm size (total sales & total assets) on financial performance of the NSE listed nonfinancial firms (objective 4), hypothesis six (H4) was tested as follows:

$Y= \beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon$.....3.9

Y=Firm financial Performance,

B_0=intercept, X_1=CS, X_2=liquidity, X_3=Firm Size, β_1, β_2, β_3, β_4= coefficients, ε= Error term

The correlation coefficient was determined and the tests of significant carried out using the t-test to establish if there is a relationship between the dependent variable and the independent variables. A relationship exists if any one of the coefficients (βi) is found to be statistically significant.The objectives, hypotheses analytical models, and interpretation of the results are summarized in Table 3.2 below.

Table 3.2: Summary of Research Objectives, Hypotheses, Analytical Methods, Statistical test and Interpretation

Objectives	Hypotheses	Analytical methods	Interpretation
To determine the effect of CS on financial performance among the non financial firms listed on the NSE	Hypothesis 1 There is no significant relationship between CS and FP among the listed firms at the NSE	Simple Regression Analysis Financial Performance = f (CS) $Y = \beta_0 + \beta_1 X_1 + \varepsilon$ Y= Financial Performance, β0= intercept,X1=CS I,β ε=Error term, 1=coefficient	Relationship exists if β_1 Significant
To ascertain the intervening effect of liquidity on the relationship between CS and FP among the firms listed nonfinancial firms on the NSE	Hypothesis 2a: There is no relevant intervening effect of asset liquidity on the relationship between CS and the FP of the listed nonfinancial firms on the NSE	Stepwise Regression Analysis Firm financial performance = f (CS, asset liquidity)) $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$ Y= Financial performance, β0= intercept, X1= CS, X_2= Asset liquidity, β_1, β_2= coefficients, ε = Error	Some form of mediation is supported if Capital structure is no longer significant when Liquidity (asset liquidity)is controlled
	Hypothesis 2b: There is no relevant intervening effect of temporary investments on the relationship	Stepwise Regression Analysis Firm financial performance = f (CS, Temporary Investments)) $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$ Y= Financial performance, β0= intercept, X1= CS, X_2= Temporary Investments, β_1, β_2= coefficients, ε = Error	Some form of mediation is supported if Capital structure is no longer significant when Liquidity(temporary investments) is controlled

	between CS and financial performance of the listed nonfinancial firms on the NSE		
To establish the moderating effect of firm size on the relationship between CS and financial performance of the nonfinancial firms listed on the NSE	Hypothesis 3_a:No significant moderating effect of total assets exists on the link between CS and financial performance	Multiple Regression Analysis Financial performance = f (CS, Total Assets) $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \beta_{3U} + \varepsilon$ Y= Financial performance, β_0= intercept, X_1= CS, X_2= Firm Size, β_1, β_2= coefficients=interaction term of Capital Structure &Firm Size ε= Error	A significant change in R^2 upon introduction of the interaction term U confirms a moderating effect.
	Hypothesis 3_b:No significant moderating effect of total sales exists on the link between CS and financial performance	Multiple Regression Analysis Financial performance = f (CS, Total Sales) $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \beta_{3U} + \varepsilon$ Y= Financial performance, β_0= intercept, X_1= CS, X_2= Firm Size, β_1, β_2= coefficients=interaction term of Capital Structure &Firm Size ε= Error	A significant change in R^2 upon introduction of the interaction term U confirms a moderating effect.
To establish the joint impact of liquidity and firm size on the link between CS and financial performance of the listed nonfinancial firms on the NSE	Hypothesis 4: There is no significant joint impact of CS, liquidity and firm size on listed financial performance	Hierarchical multiple regression analysis Firm financial Performance = f (CS, Firm Size, Liquidity) $Y=\beta_0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+\varepsilon$ Y=Financial Performance, B0=intercept, X_1=Liquidty,X_2=CapitalStructure,X_3=Firm Size, β_1, β_2, β_3, β_4= coefficients, ε= Error term	Relationship exists if at least of the $\beta_1 ... \beta_3$ are significant.

3.8 Diagnostic Tests

Porta (2014) defines diagnostic tests as the estimation procedures in research for evaluating whether the assumptions of classical linear regression have been complied with. These assumptions include normality, linearity, homoscedasticity, multicollinearity and independence tes and Cointegration test. Panel Unit Root Test was also carried out as a diagnostic test for panel data.

3.8.1 Multivariate Normality Test

Normality is one of the panel least square basic requirements that assume that error terms have asymmetric distribution or centered at zero. Besides, the construction of confidence interval estimates such as the Chi-square ($\chi 2$), Z-test, t-test and F-statistics assume data normality (Rawlings *et al.,* 2001). Non-normality is a violation of this requirement that could lead to flawed hypothesis tests results associated with the exaggerated test statistics and often occurs when the data distribution is not bell-shaped. There are various tests for normality including Kolmogorov-Smirnov, histogram plots, Jarque-Bera, Shapiro-Wilk, Skewness, Kurtosis, Anderson-Darling and Pearson's Chi-square tests among others.

This study used the Shapiro-Wilk test in which data is assumed to be significant if the statistic is statistically insignificant ($p > 0.05$). However, Shapiro-Wilk test is preferred since it is a powerful test of non-normality and is able to detect even slight departures from normality even with small sample sizes. Any variable that fails the statistical test was subjected to graphical methods of assessing normality. Histogram was visually examined to assess the normality. Non-normal data can be transformed using natural log transformations.

3.8.2 Heteroscedasticity Test

Heteroscedasticity implies that the model constant and slope coefficients vary across individuals while homoscedasticity implies constant and slope coefficients do not vary across individuals. Under the ordinary least square assumptions, the variance of the linear model needs to be constant (homoscedastic) for the linear regression model to hold. That is, in a case where the error terms variations are not constant, it implies that they are heteroscedastic. The homoscedasticity assumption states that the population metric variance must be equal for all groups (literally, same variation). Therefore, in the case of heteroscedasticity absence, homoscedasticity prevails, which describes a situation in which the error term is constant.

The study adopted Breusch-Pagan (1979) test to assess the presence of heteroscedasticity in the panel data because of its sensitivity to normality assumption, unlike the extreme White test. The null hypothesis is that the error terms are homoscedastic against the alternative of heteroscedasticity and the insignificant outcome is desired. That is the observed R-squared value of more than .05 implies the absence of heteroscedasticity. Importantly, when a study achieves the homoscedasticity assumption, the chances for making Type I & II errors drastically reduce and improves the accuracy of the research findings. In case of the presence of heteroscedasticity, the study would standardize the panel data and use the weighted least square models such as general least square (GLS) or general moment methods (GMM).

3.8.3 Multivariate Linearity Test

Linearity exists when the dependent variable is a linear function of the predictor variables as well as the random error. Assessing non-linearity is important since correlation, regression and other general linear models assume linearity. Linearity can be tested using both graphical and statistical techniques. The widely applied statistical methods for testing linearity include;

Ramsey's RESET test, tolerance factor, eta correlation coefficient and ANOVA test. Graphical methods involve inspection of scatterplots to ascertain whether linearity exists. In this technique, standardized residuals are plotted against the standardized estimates of criterion variable and if the plot exhibits a random patter, then it infers presence of linearity. This study eta correlation coefficient and ANOVA test

A p-value of greater than 0.05 ($P < 0.05$) imply that there is a linear association between the variables. Were the $P > 0.05$ then it would imply that there is no linear association between the variables. Therefore, the data would be transformed through logs or reciprocal methods. Regarding the scatter plot, linearity is assumed to exist when the data values form an oval shape. If the data does not assume linearity the treatment option that can be used is data transformation through logs or reciprocal methods.

3.8.4 Multicollinearity Test

Multicollinearity problem occurs in panel least square regression when the regressors inter-correlate highly with each other, and as such makes, it possible to predict with precision from each other variable. In a situation where multicollinearity exists, the condition overestimates the residual/error term of estimates of beta values, leads to misleading results as well as reducing reliability of study findings. Consequently, this causes the individual predictor coefficients to become unstable. Sweet and Grace-Martin (2012) outlined various methods of identifying multicollinearity in a particular data set. One of the indicators outlined is when high standard errors which are greater than the coefficients are observed.

The other method is identifying the level of variance inflation factor and the tolerance levels. A higher inflation factor and a low tolerance level indicate that there is presence of multicollinearity. This study adopted the variance inflation factor (VIF) to determine whether

multicollinearity exists among the variables. VIF measures the severity of multicollinearity in Panel regression analysis. A VIF value of < 10 signifies absence of multicollinearity. Apart from VIF, tolerance value (reciprocal of VIF) can also be used to assess the multicollinearity. A tolerance value which is > 0.1 indicates absence of multicollinearity.

3.8.5 Serial Independence Test

Serial correlation affects time series data and occurs when covariance between error terms is not zero (cov (εi, εj) = 0, for $i \neq j$) or follows an autocorrelated pattern. If a data has no serial correlation, it means that an error term of an individual observation cannot influence the error term relating to another observation. However, the presence of autocorrelation implies variables are dependent on each other, a violation of the ordinary least square assumption for robustness, and leads to the generation of smaller standard errors and hence inaccurate hypothesis tests results. There are several ways of assessing serial correlation among Durbin-Watson (1950), Correlogram-Q-Statistics, BreuschGodfrey, Lagrange Multiplier (LM) among others.

Autocorrelated disturbance distorts the efficiency of regression estimators when performing linear regression analysis, thus testing for independence is required. One of the most effective and convenient tests for independence is the Durbin- Watson test. A coefficient between 1.5 and 2.5 indicates that the variables are independent. Anything above 2.5 would require an alteration of original model using lagged model techniques. This study adopted the Durbin-Watson test to check for serial independence due to its effectiveness and convenience.

3.8.6 Panel Unit Root Test

According to Herranz (2017) a unit root is a stochastic trend of random probability distribution process comprising time series models that causes serious challenges in statistical inferences. A

unit root remains to one of the principal cause of non-stationary in time series studies. Unit roots can either be non-stationery autoregressive or autoregressive moving average time series processes, which may include a trend or an intercept. Some time series processes may include both an intercept and a trend. Unit root test are used to address the null hypothesis of a unit root or the alternate hypothesis of a time series which is stationery. The test is also used in determining where some variables in the model are non-stationery, since time series data suffers stationery problems. Non-stationary data may cause serious false regressions because of non-constant mean and variance.

There is various test which can be used to check if the model is non-stationary in nature. Some of the unit root test include: Dickey Fuller unit root test, which is commonly used as a standard autoregressive model with a Gaussian white noise, which is probabilistic in nature without any deterministic components. The Dickey Fuller test was further extended to Augmented Dickey Fuller test, in order to incorporate both autoregressive (AR) time series and autoregressive moving average (ARMA) time series processes. This study adopted the Augmented Dickey Fuller unit root test for panel data due to its commonality in testing for unit root and sensitivity to the number and choice of lags. A p-value of < 0.05 implies that the statistical assumption of stationarity has been met.

3.8.7 Cointegration Test

Variables are termed to cointegrate if two non-stationary time series variables move together through time. If variables are cointegrated, the treatment is differencing the non-stationary data. Granger (1981) introduced the concept of cointegration and its relationship with error correcting model. His approach relied on the premise that data needs to be critically looked at before determining the model to be used in econometric analysis. Some of the methods suggested for

testing for cointegration include; Durbin Watson statistic, which is used to test if the residuals appear to be stationery. If the residuals are non-stationary, the figure will tend to move towards zero thus rejecting non- cointegration. The second method involved using Dickey Fuller's description of performing an auxiliary regression. This method assumes that the first order model is correct.

The third method which was described was the use of augmented Dickey Fuller test which is more advanced and analyses beyond the first order case and involve higher order cases. The fourth method described was the use of restricted vector auto regression test (RVAR). This study adopted Johansen test to check for cointegration. Johansen (1988) introduced a statistical analysis on cointegration by testing linear hypothesis on cointegration vectors. Johansen test focused on two elements, the trace and the eigenvalue. In this test, the p value is monitored in order to check the statistical significance level. P <0.05 implies that regression coefficients are statistically significant. If this is not the case, the treatment option is differencing non-stationary data

Table 3.3: Summary of Diagnostic Tests

Assumption	**Description**	**Test**	**Interpretation**	**Treatment**
Normality Test	Data which is normal distributed will form a bell-shaped curve graphically. Both graphical and statistical techniques were used to assess normality.	Shapiro-Wilk test Graphical Display (Histogram)	Straight line formed by P-P indicates that data is normally distributed. P>0.05 indicates that variables are normally distributed. Bell shaped curve indicates the variables are normally distributed.	Application of square roots or logs.
Linearity Test	Linearity exists when the dependent variable is a linear	ANOVA test	P <0.05 implies linear association between the	Data transformation through logs or

Assumption	Description	Test	Interpretation	Treatment
	function of the predictor variables as well as the random error.	Scatter plots	variables.	reciprocal methods.
Homogeneity of Variance test	Homogeneity of variance (homoscedasticity) is a classical assumption that dependent variable shows analogous degree of variance across entire values of independent variable.	Levene's test	Statistic is significant at 0.05 and above.	Variance stabilization transformation of data using logs or reciprocals.
Multicollinearity test	Multicollinearity refers to unacceptably high degree of correlation among independent variables which results to large standard errors (residuals).	Variance Inflation Factor (VIF)	VIF factor >10 implies serious multicollinearity.	Dropping collinear variables or obtaining additional data.
Panel Unit root test	Unit root test is used to determine whether some variables in the model are non-stationary since time series data suffers stationary problems. Non-stationary data causes serious spurious regressions because of non-constant mean and variance.	Augmented Dickey-Fuller test	If $p < 0.05$ data is stationery	Differencing non-stationary data.
Serial Independence Test	The variables should not be correlated with the error terms.	Durbin-Watson test	Coefficient between 1.5 and 2.5 indicates independent observations.	Alteration of original model using lagged model techniques.
Cointegration test	Two non-stationary time series variables are cointegrated if the move together through time.	Johansen Test	$P < 0.05$ implies that regression coefficients are statistically significant.	Differencing non-stationary data.

CHAPTER FOUR

DESCRIPTIVE DATA ANALYSIS AND RESULTS

4.1 Introduction

The study sought to establish the relationships among capital structure, firm size, liquidity and financial performance of nonfinancial firms listed in the NSE. Secondary data was collected to test the relationships between variables. This chapter represents an analysis of the results. More specifically, the chapter has focused on descriptive statistics, test of normality, linearity, homoscedasticity, multicollinearity, independence test, unit root test, Cointegration test and correlation analysis.

4.2 Pre-estimation Diagnostics

There are various assumptions that should be met to undertake classical linear regression as per Porta (2014). Test of normality, linearity, homoscedasticity, multicollinearity, independence test, Cointegration test and unit root test were undertaken in order to evaluate these assumptions.

4.2.1 The Hausman Test for Model Effects Estimation

In order to establish which estimation effects (between fixed and random) provided superior results for the study, Hausman test was carried out. The test was conducted against the null hypothesis that random effect model was the preferred model. The test results rejected the null if the chi-square statistic was significant at 5% significance level; otherwise, the null was accepted.

Table 4.1: Hausman Test Results

	(b)	(B)	(b-B)
	fe	re	difference
ASSET LQ	0.466666	0.680864	-0.0214198
TEMPINV	0.1265722	0.1323729	-0.058006
TASSETS	0.740678	0.067417	0.0066508
TSALES	0.1207066	0.1147897	0.0059169
LEVERAGE	0.1509317	0.1952601	-0.0443284

H_0 Difference in coefficients not systematic

Prob>Chi2-0.000

Source: Research Data

Table 4.1 display the Hausman specification test results

The null hypothesis of the Hausman test is that the random effects model is preferred to the fixed effects model. Hausman test reported a chi-square of 0.0000. Hence there was a strong indication of rejecting the null hypothesis. Therefore, the study used the fixed effects model.

4.2.2 Normality test

The Shapiro wilk test for normality was conducted to test whether the variables were normally distributed. The null hypothesis was that the data did not come from a population that was not normally distributed. Therefore, the alternate hypothesis is that the data originated from a normally distributed population. The test statistics for each variable are shown in the table 4.2 below.

Table 4.2: Normality Test

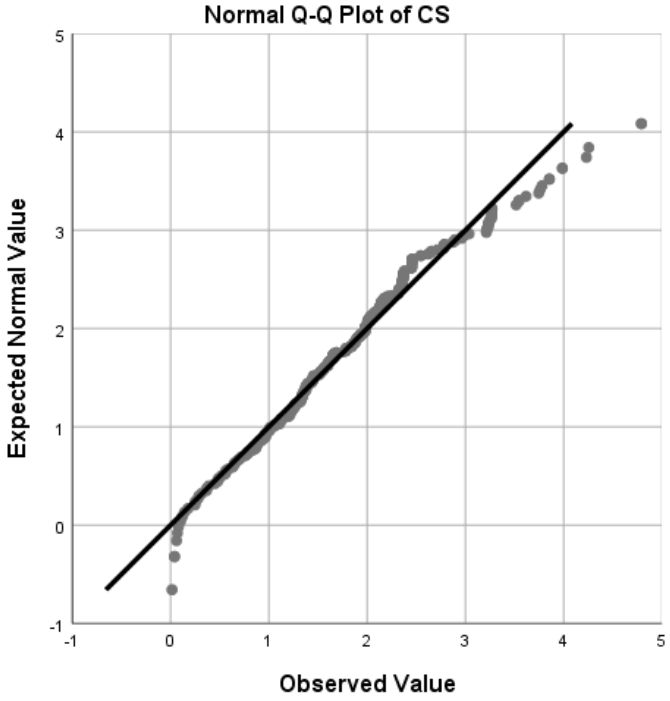
	Shapiro-Wilk		
Variable	**Statistic**	**df**	**P value**
Capital structure	1.687	364	0.082
Liquidity	1.501	364	0.160
Firm total assets	0.832	364	0.129
Firm total sales	1.004	364	0.076
Asset liquidity	1.321	364	0.062
Temporary investment	1.432	364	0.074

Source: Research Data

Table 4.2 above shows that the p-values for the variables were greater than 0.05. Therefore, we failed to reject the null hypothesis that the variables were normally distributed at a 5% level of significance. Therefore, OLS could be applied to the data considering that the data met the assumed conditions for the application of multiple regression analysis. In case the p-values were less than 0.005 we would reject the null hypothesis and therefore the data would be subjected to the application of square roots or logs.

Field (2013) recommends the use of visual inspection or Quantile-Quantile (Q-Q) plots to supplement the use of tables or numbers. These plots are presented below.

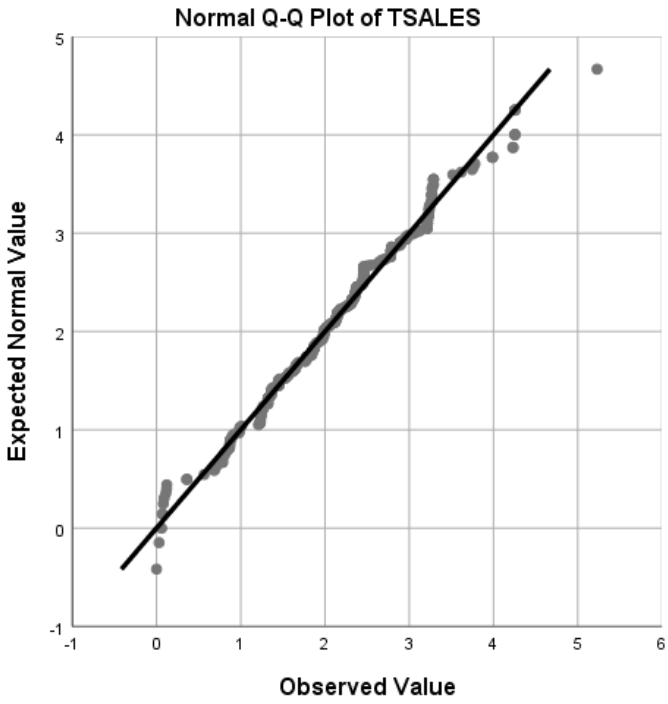
Figure 4.1: Q-Q plots for capital structure (2010-2017)



Q-Q plots are conducted to test whether the data on capital structure is normally distributed. If the results of the Q-Q plot show that most of the observations seem to be on the straight line then the data is normally distributed.

Q-Q plot in figure 4.1 above for capital structure (CS) exhibits normality because most of the observations seem to be on the straight line with a few cases appearing to be far away from the line. In case most of the observations seemed not to be on the straight line with most cases appearing to be far away from the line, then data would fail to exhibit normality. Therefore, the data would be subjected to the application of square roots or logs.

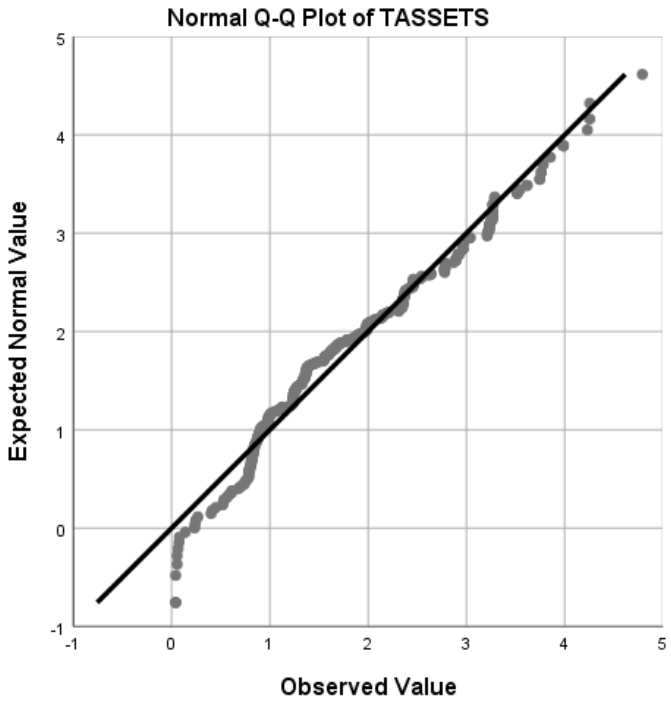
Figure 4.2: Q-Q plots for firm size (Total sales) - (2010-2017)



Q-Q plots are conducted to test whether the data on firm size (Total sales) are normally distributed. If the results of the Q-Q plot show that most of the observations seem to be on the straight line then the data is normally distributed.

Figure 4.2 Q-Q plot above for firm size (total sales) reveals normality because the majority of the observations seem to be along the straight line. Large data sets can be analyzed even if some datasets do not meet normality assumptions (Tabachnick & Fiddel, 2013). In case most of the observations seem not to be on the straight line with most cases appearing to be far away from the line, then data would fail to exhibit normality. Therefore the data would be subjected to the application of square roots or logs. Furthermore, outliers would be investigated and corrected or eliminated where necessary.

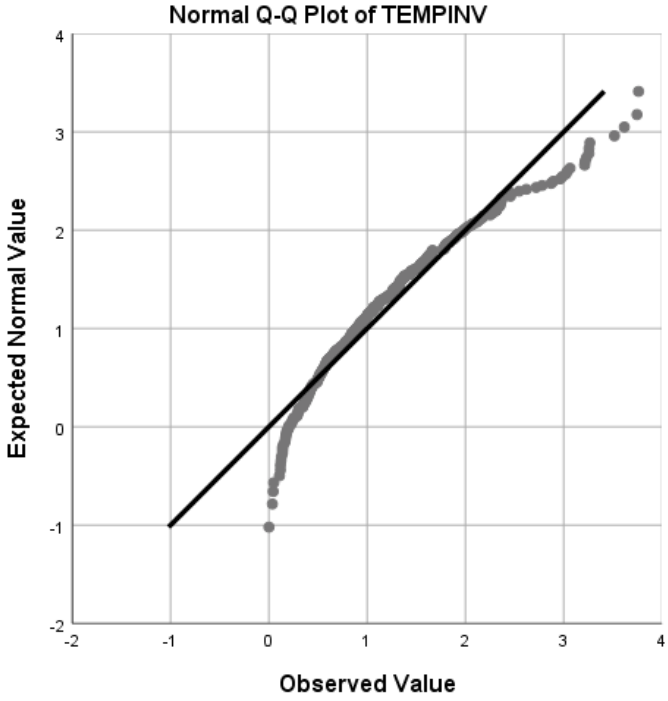
Figure 4.3: Q-Q plots for firm size (Total assets) - (2010-2017)



Q-Q plots are conducted to test whether the data on firm size (Total assets) are normally distributed. If the results of the Q-Q plot show that most of the observations seem to be on the straight line then the data is normally distributed.

The results of the Q-Q plot in figure 4.3 above for firm size (total assets) exhibit normality because most of the observations seem to be on the straight line with a few cases appearing to be far away from the line. In case most of the observations seemed not to be on the straight line with most cases appearing to be far away from the line, then data would fail to exhibit normality. Therefore, the data would be subjected to the application of square roots or logs.

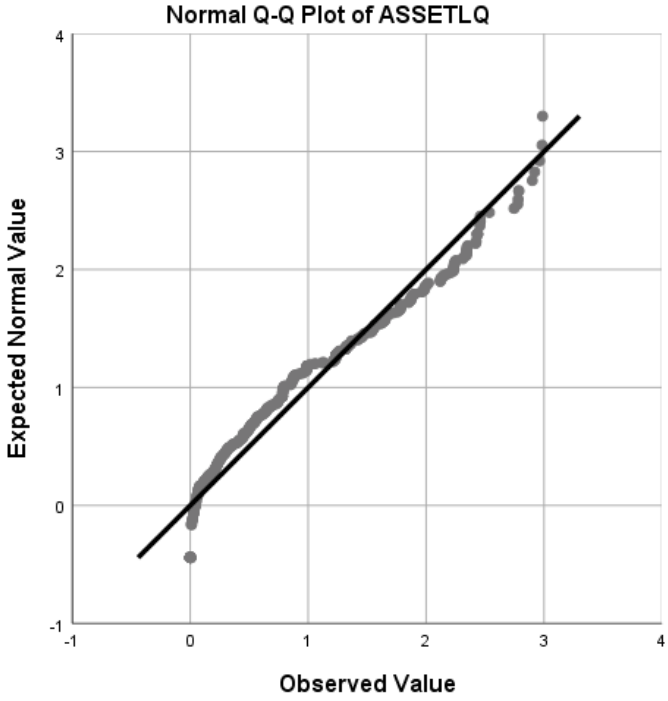
Figure 4.4: Q-Q plots for Liquidity (Temporary Investments) (2010-2017)



Q-Q plots are conducted to test whether the data on liquidity (temporary investments) is normally distributed. If the results of the Q-Q plot show that most of the observations seem to be on the straight line then the data is normally distributed.

The results of the Q-Q plot in figure 4.4 above for liquidity (temporary investments) exhibit normality because most of the observations seem to be on the straight line with a few cases appearing to be far away from the line. In case most of the observations seemed not to be on the straight line with most cases appearing to be far away from the line, then data would fail to exhibit normality. Therefore, the data would be subjected to the application of square roots or logs. Furthermore, outliers would be investigated and corrected or eliminated where necessary.

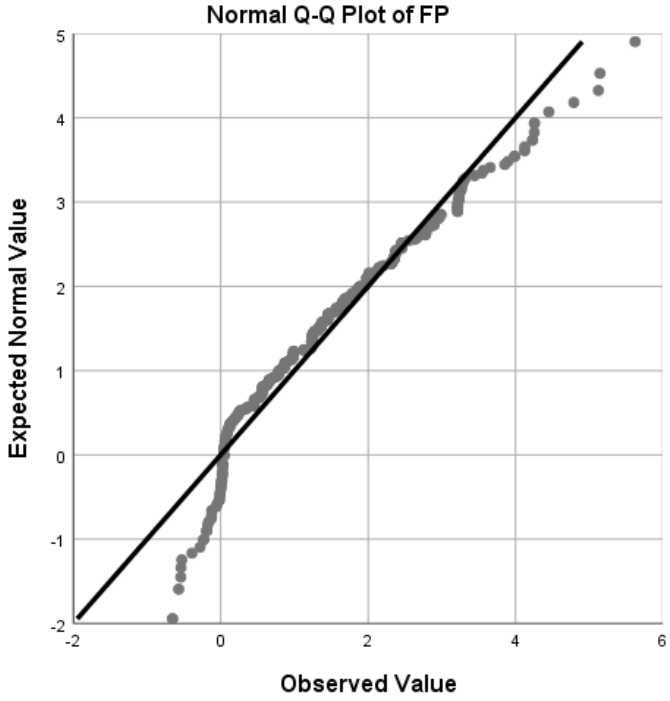
Figure 4.5: Q-Q plots for Liquidity (Asset Liquidity) (2010-2017)



Q-Q plots are conducted to test whether the data on liquidity (asset liquidity) is normally distributed. If the results of the Q-Q plot show that most of the observations seem to be on the straight line then the data is normally distributed.

The results of the Q-Q plot in figure 4.5 above for liquidity (asset liquidity) exhibit normality because most of the observations seem to be on the straight line with a few cases appearing to be far away from the line. In case most of the observations seemed not to be on the straight line with most cases appearing to be far away from the line, then data would fail to exhibit normality. Therefore, the data would be subjected to the application of square roots or logs. Furthermore, outliers would be investigated and corrected or eliminated where necessary.

Figure 4.6: Q-Q plots for Financial Performance (2010-2017)



Q-Q plots are conducted to test whether the data on financial performance is normally distributed. If the results of the Q-Q plot show that most of the observations seem to be on the straight line then the data is normally distributed.

The results of the Q-Q plot in figure 4.6 above for financial performance (FP) exhibit normality because most of the observations seem to be on the straight line with a few cases appearing to be far away from the line. In case most of the observations seemed not to be on the straight line with most cases appearing to be far away from the line, then data would fail to exhibit normality. Therefore the data would be subjected to the application of square roots or logs. Furthermore, outliers would be investigated and corrected or eliminated where necessary.

4.2.3 Homogeneity of Variance Test

This study adopted Breusch Pagan Test to measure heteroskedasticity. This was critical for analysis since there is a likelihood of falsely rejecting the null hypotheses if the homoscedasticity is violated. If the p value of the Breusch Pagan Test is less than 0.05, then it's an indication that the variance are not equal and other parametric tests such as ANOVA are not suited. Table 4.3 below demonstrates the Breusch Pagan Test for heteroskedsticity.

Table 4.3: Breusch Pagan Test

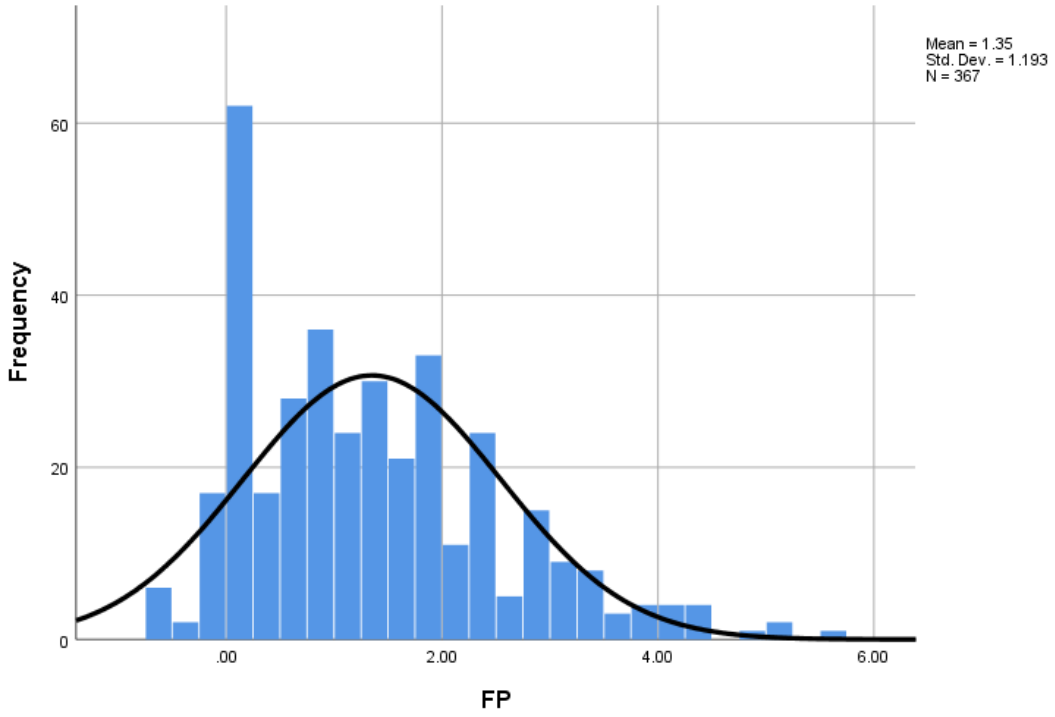
Breusch –pagan/cook-weisberg test for heteroskedasticity
Ho: Constant variance
Variables fitted values of FP
Chi2-2.45
Prob>chi2-0.1172

Source: Research Data

The p value as indicated above in table 4.3 is more than 0.05 thus indicting the variance are equal. Therefore, there was no need for data transformation of the data before further analysis

Homoscedasticity can be also be tested using histograms, scatter plots, and normal P-P plots by splitting the data into high and low values to assess whether the samples were significantly different. The results of the Heteroscedasticity diagnostic tests were done using histograms and are presented in Figures 4.7 to 4.11 below.

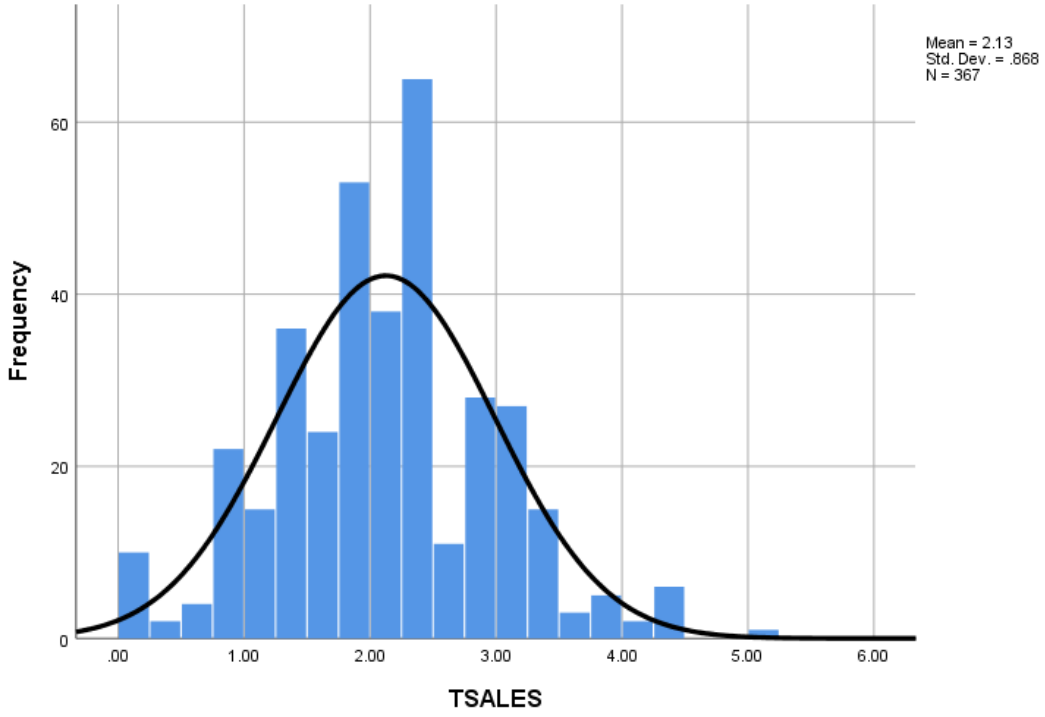
Figure 4.7: Histogram of the Residuals of Financial Performance Data



Source: Research Findings (2019)

The histogram shown in Figure 4.7 above shows a normal distribution in the financial performance panel data. Were figure 4.7 above not showing a near-normal distribution, then data would fail to exhibit normality. Therefore the data would be subjected to the application of square roots or logs.

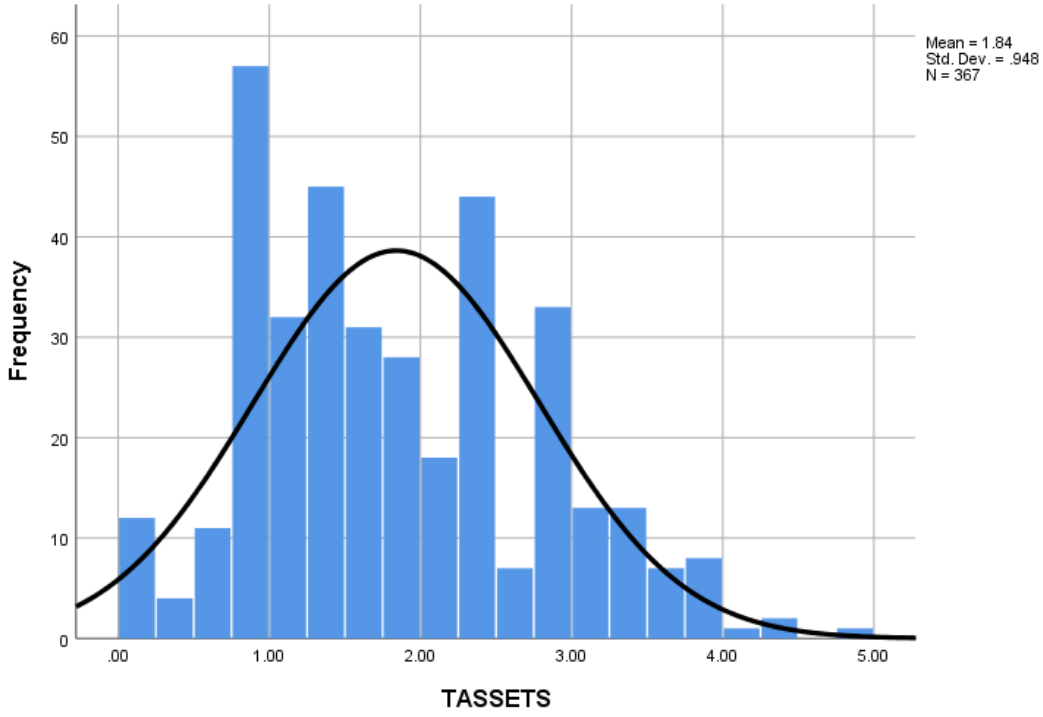
Figure 4.8: Histogram of the Residuals of Total Sales (Firm Size) Data



Source: Research Findings (2019)

The histogram above shows a normal distribution of the data and no evidence of heteroscedasticity. Were the figure 4.8 above not showing a near-normal distribution, then data on total sales (firm size) would fail to exhibit normality. Therefore the data would be subjected to the application of square roots or logs.

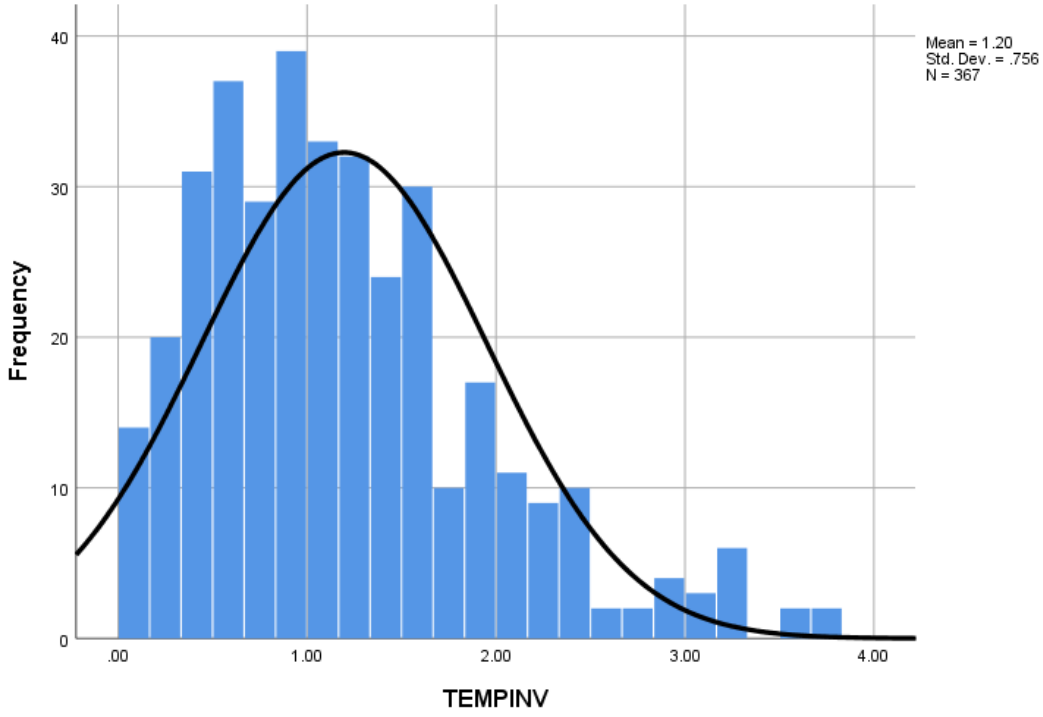
Figure 4.9: Histogram of the Residuals of Total Assets (Firm size) Data



Source: Research Findings (2019)

The histogram in Figure 4.9 above shows normal distribution in the total assets (firm size) panel data. Were the figure 4.9 above not showing a normal distribution, then the data on total assets (firm size) would fail to exhibit normality. Therefore, the data was subjected to the application of square roots or logs.

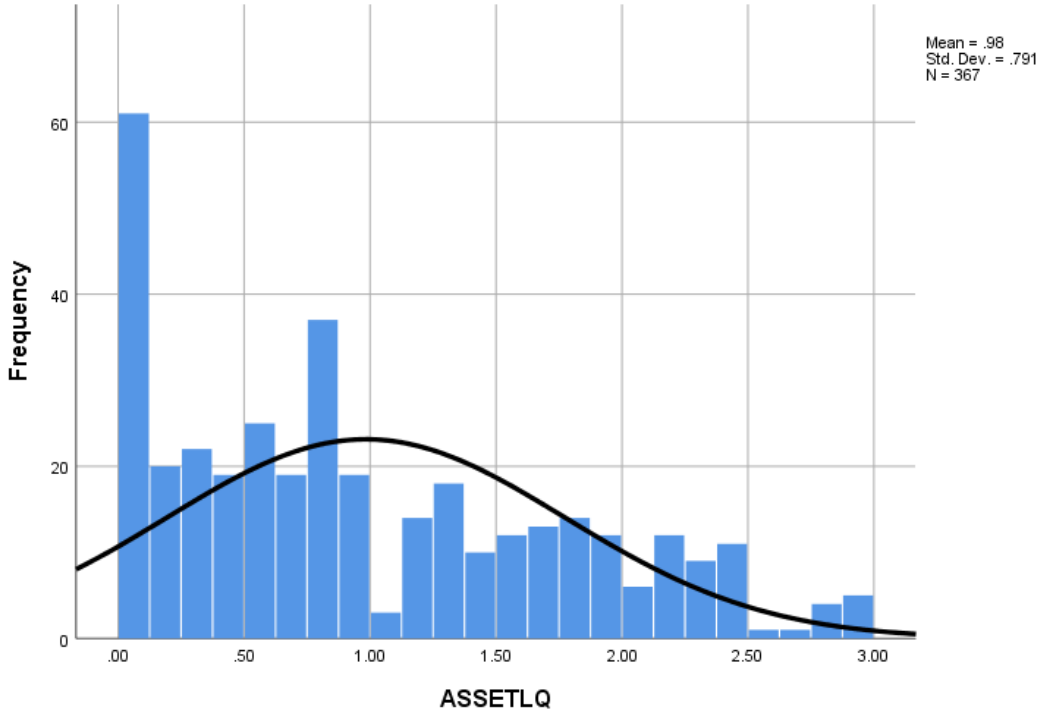
Figure 4.10: Histogram of the Residuals of Liquidity (Temporary Investments) Data



Source: Research Findings(2019)

The histogram in figure 4.10 above shows a near-normal distribution of the data and no evidence of heteroscedasticity. Were figure 4.10 above not showing a normal distribution, then data would fail to exhibit normality. Therefore, the data was subjected to the application of square roots or logs.

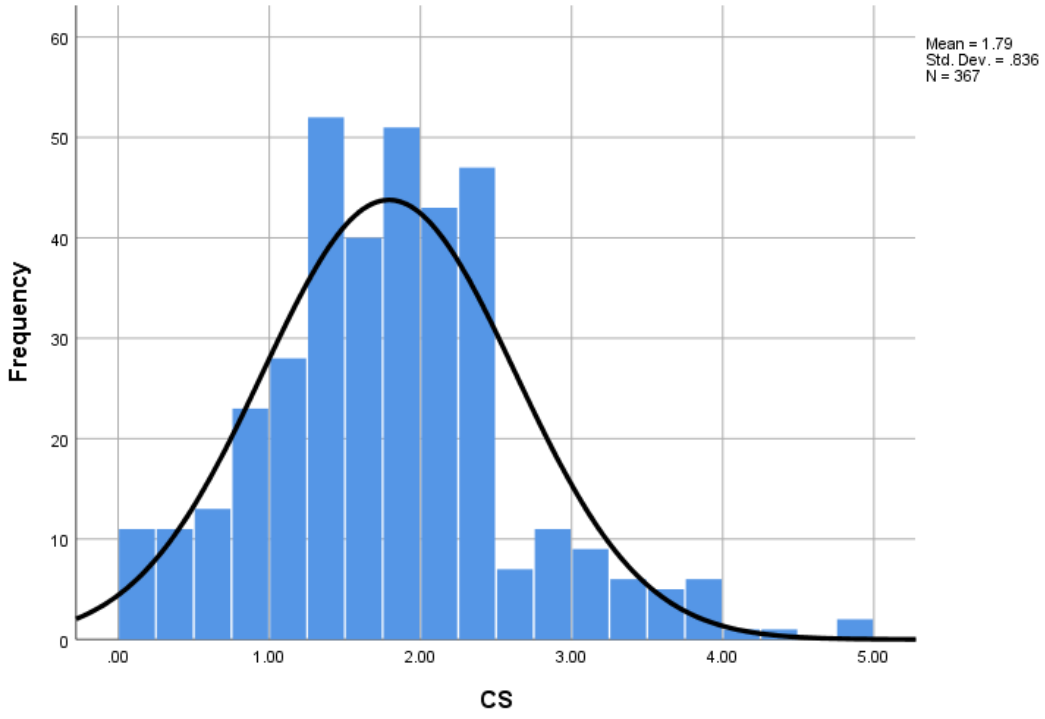
Figure 4.11: Histogram of the Residuals of Liquidity (Asset Liquidity) Data



Source: Research Findings (2019)

The histogram in figure 4.11 above shows a near-normal distribution of the data and no evidence of heteroscedasticity. Were figure 4.11 above not showing a normal distribution, then data would fail to exhibit normality. Therefore, the data was subjected to the application of square roots or logs.

Figure 4.12: Histogram of the Residuals of Capital Structure Data



Source: Research Findings(2019)

The histogram in figure 4.12 above shows a normal distribution of the data and no evidence of heteroscedasticity. Were figure 4.12 above not showing a near-normal distribution, then the data on capital structure would fail to exhibit normality. Therefore, the data was subjected to the application of square roots or logs.

4.2.4 Test for Linearity

In testing whether the variables were linearly associated, a correlation analysis was done. The null hypothesis for the test was that there is no linear relationship. The test statistic for the linear

relationship between the capital structure (predictor variable) and firm financial performance (explanatory variable) are shown in Table 4.4 below.

Table 4.4: Test for Linearity

Reference Variable: Firm Performance	Coefficient of Correlation	P-Value
Capital structure	0.506	0.000
Liquidity(Temporary Investments)	0.701	0.000
Liquidity(Asset Liquidity)	0.521	0.000
Firm size(Total sales)	0.619	0.000
Firm size(Total assets)	0.590	0.000

Source: Research Data

From table 4.4 above capital structure shows a coefficient of correlation of 0.506, liquidity (temporary investments) indicate 0.701, liquidity(asset liquidity) indicate 0.521,firm size (total sales) 0.619 and firm size(total assets) 0.590. All the values exceed 0.5000 meaning that there is a positive correlation. Financial performance is the reference variable. All the p-values of the respective coefficients of correlation are 0.000 which is lower than 0.05.

Thus, all the predictor variables have a significant positive correlation with financial performance at a five percent level of significance. Therefore the predictor variable and the explanatory variables (financial performance) move in the direction which suggests a linear relationship. This positive correlation indicates that the signage coefficients of the predictor variables in the simple regression models are positive. Were the P >0.05 then it would imply that there is no linear association between the variables. Therefore the data would be transformed through logs or reciprocal methods.

4.2.5 Multicollinearity Test

Multicollinearity occurs if there is a strong relationship between two or more independent variables in the regression model. Multicollinearity becomes an issue only in multiple regressions and not for simple regression analysis. Multicollinearity poses several problems such as increases in the standard errors β coefficients. This means that the βs have relatively higher variability across samples and are less likely to represent the population. The second problem is limiting the size of R, which measures multiple correlation between the independent variable and the result, and R^2, the variance of the result for which the independent variables explain making the second variable explain very little of the remaining variance. The problem posed by multicollinearity is that it reduces the importance of predictors, making it hard to measure the specific significance of the predictor (Field, 2009).

To test the level of multicollinearity that would be tolerated in the estimated models, Variance Inflation Factor (VIF) was used. The requirement is that value of VIF of less than 10 means that the level of multicollinearity can be tolerated (Robinson & Schumacker, 2009). Since the multicollinearity test is only applicable for multivariate regressions, only VIF statistics are reported since the regressions involve more than one independent variable.

Variables	**VIF**
Capital structure	1.280
Liquidity(Asset liquidity)	1.470
Liquidity(Temporary investments)	1.621
Firm Size(Total sales)	1.007
Firm Size(Total assets)	1.009
Financial Performance	1.712

Source: Research Data

Table 4.5 shows that the VIF for all models are between the acceptable ranges of 1.007 to 1.712 showing that VIF results are between the acceptable ranges of 1 to 10 (Robinson&Schumacker,2009). This shows that the variables did not exhibit multicollinearity and regression analysis could then be carried out. Were the VIF factor >10 it would imply serious multicollinearity. Serious multicollinearity can be dealt with by dropping the collinear variables or obtaining additional data.

4.2.6 Serial Independence Test

This study adopted Durbin Watson test to confirm if the observations among the variables were independent. As per this test, the coefficient needs to be between 1.5 and 2.5 in order to confirm that the observations were independent. Table 4.6 below represents the independence test conducted in this study.

Table 4.6: Independence test

Model Summary				
Variable	R^2	Adjusted R^2	S.E of the Estimate	Durbin-Watson
FP	0.474292	0.465494	0.1688594	1.861820
ASSETLIQ	0.396796	0.389288	0.0886273	2.064575
TEMPINV	0.506484	0.389288	0.0806557	1.897517
TASSETS	0.497961	0.504470	0.0474313	2.011893
TSALES	0.507624	0.505614	0.0528701	2.011623
CS	0.59400	0.59000	0.550981	1.965421
Investment income ratio	0.507624	0.505614	1.259701	2.000623

a. Predictors: (Constant), Capital structure, Asset liquidity, Temporary investments, Total sales, Total Assets
b. Dependent Variable: Financial performance
Source: Research Data

From table 4.6 above, the coefficient observed as per the Durbin-Watson test for capital structure was 1.965421, total sales 2.011623,total assets was 2.011893, temporary investments was 1.897517 and asset liquidity was 2. 064575. Since the coefficients lie between 1.5 and 2.5, it is an indication that the observations made were serially independent.

4.2 .7 Panel Unit Root Test

This study adopted augmented Dickey-Fuller test in determining whether variables in the time series are non-stationary in nature. It tests if the autoregressive model has a unit root. For this study to reject the null hypothesis (the data has a unit root), the p value should be less than 0.05.

Table 4.7 below shows the results of the augmented Dickey Fuller test adopted in checking for unit root.

Table 4.7: Panel Unit Root Test

Variable	ADF Test	Prob.*	Remarks
ASSETLQ	-0.6.337	0.0000	Stationery
TEMPINV	-7.692	0.0000	Stationery
TASSETS	-8.392	0.0000	Stationery
TSALES	-7.375	0.0000	Stationery
CS	-6.681	0.0000	Stationery
FP	-5.384	0.0000	Stationery

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Variable has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=15)

Source: Research Data

Table 4.7 above shows that all the P values for the augmented Dickey- Fuller test are less than 0.05, thus indicting that capital structure (leverage),liquidity (asset liquidity & temporary investments),firm size(total assets& total sales) and financial performance have no unit root meeting the condition required for being station.

4.3.7 Cointegration Test

This study adopted Johansen test to check for cointegration. In this test, the p value is monitored in order to check the statistical significance level. P <0.05 implies the regression coefficients are statistically significant. Table 4.8 below displays the findings of Johansen's cointegration test.

Table 4.8 Cointegration Test

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.21889	89.4288	3.841466	0.0000
None *	0.19870	71.5046	3.841466	0.0000
None *	0.17924	58.8676	3.841466	0.0006
None *	0.15008	48.7481	3.841466	0.0000
None *	0.12599	38.6762	3.841466	0.0000
None *	0.10133	30.2785	3.841466	0.0000
None *	0.08024	19.9766	3.841466	0.0000

* signifies rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Research Data

For the regression coefficients to be termed as statistically significant, the p value ought to be less than 0.05. The results in table 4.8 above shows that all the p values are less than 0.05 thus confirming that the regression coefficients are statistically significant and rejecting the null hypothesis at 0.05 level of significance. Rejection of the null hypothesis as per the cointegration rank test indicates that there is no cointegration.

4.3 Descriptive Statistics

Table 4.9: Descriptive Statistics for secondary data-2010 to 2017

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FP	367	.00	5.62	1.3511	1.19312
ASSETLQ	367	.00	2.99	.9835	.79082
TEMPINV	367	.00	3.76	1.1953	.75652
TASSETS	367	.04	4.23	1.8404	.94751
TSALES	367	.00	5.23	2.1252	.86823
CS	367	.01	4.79	1.7916	.83616
Valid N (listwise)	367				

Table 4.9 above shows descriptive statistics for secondary data for 7 years from 2010 to 2017. Table 4.9 gives the descriptive analysis for the main variables used in the research. The table shows that the average Tobin Q is 1.3511. This suggests that on average, nonfinancial firms listed on the NSE have recorded fairly impressive performance. Tobin's Q mean of 1.3511 suggests that the firm's market values are more than the firms' book values. Since their market price to book value ratio is more than one, the market expects the value of these firms to increase in the future because the market price also takes any future earnings into account at the current price.

For capital structure the average is 1.7916, meaning that most non-financial firms listed in the NSE have a large amount of debt compared to equity in their capital structure. The mean for liquidity (asset liquidity) was found to be 2.0429 indicating high current assets to current liabilities ratio. The mean for liquidity (temporal investments) was found to be .9835 indicating an almost equal amount of temporary investments to total assets ratio. On average the mean for total sales of listed firms at the NSE is indicated by a log of 2.1252 indicating that the firms have

fairly high total sales. The average mean for total assets of listed firms at the NSE is indicated by a log of1.8404 indicating that the firms have a fairly high asset value

4.4 Chapter Summary

The chapter presented information on pre-estimation diagnostics. These include normality test, linearity test and multicollinearity test. The chapter also gave results of analysis and tests run on the data that was collected. These include descriptive statistics. Results were indicated by standard deviations, mean scores, minimum scores and maximum scores.

CHAPTER FIVE

HYPOTHESIS TESTING & DISCUSSION OF FINDINGS

5.1 Introduction

This section presents the hypotheses of the study, which are derived from the study objectives and the results of the hypothesized relationships. This study was informed by the premise that there exists a relationship between capital structure and financial performance of the nonfinancial firms listed on the NSE and that this relationship is intervened by liquidity and moderated by firm size.

5.2 Correlation Analysis

The relationship between the strength and direction of the variables' relationship was investigated by the Pearson product moment correlation coefficient. This was significant to assess whether any relationship exists between the variables before proceeding with further analyses. The study employed the following classification: strong if 0.7 and above; moderate if 0.4 but less than 0.7 and weak if 0 and less than 0.4.

Apart from analysing the direction and strength of the relationship, correlation analysis was also used to test the presence of multicollinearity between the independent variable. Multicollinearity exists if independent variables are highly correlated. (r=or greater than 0.75).Multicollinearity reduces the importance of predictors, making it difficult to assess the individual importance of a predictor. Multicollinearity may lead to poor regression modeling (Dancey& Reid, 2011). The

results in table 5.1 below show that there is no multicollinearity since all the predictor coefficient results are below 0.75.

Table 5.1: Pearson Moment Correlations among the Dependent, Independent, Intervening and Moderating Variable

Correlations

		FP	ASSETLQ	TEMPINV	TASSETS	CS	TSALES
FP	Pearson Correlation	1	.518**	.340**	.084	.556**	.316**
	Sig. (2-tailed)		.000	.000	.109	.000	.000
	N	367	367	367	367	367	367
ASSETLQ	Pearson Correlation	.518**	1	.301**	.009	.343**	.398**
	Sig. (2-tailed)	.000		.000	.859	.000	.000
	N	367	367	367	367	367	367
TEMPINV	Pearson Correlation	.340**	.301**	1	-.010	.389**	.367**
	Sig. (2-tailed)	.000	.000		.846	.000	.000
	N	367	367	367	367	367	367
TASSETS	Pearson Correlation	.084	.009	-.010	1	.036	-.041
	Sig. (2-tailed)	.109	.859	.846		.487	.429
	N	367	367	367	367	367	367
CS	Pearson Correlation	.556**	.343**	.389**	.036	1	.370**
	Sig. (2-tailed)	.000	.000	.000	.487		.000
	N	367	367	367	367	367	367
TSALES	Pearson Correlation	.316**	.398**	.367**	-.041	.370**	1
	Sig. (2-tailed)	.000	.000	.000	.429	.000	
	N	367	367	367	367	367	367

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

As indicated in table 5.1 above there is a strong positive correlation between financial performance and capital structure(r=0.556).The correlation between financial performance and

total assets is weak but positive(r=0.084). The correlation between financial performance and total sales is also weak but positive(r=0.316). The correlation between financial performance and liquidity (temporary investments) is weak but positive(r=0.340). The correlation between financial performance and liquidity (asset liquidity) is fairly strong but positive(r=0.518). All the correlations were significant. The relationship between financial performance and capital structure, liquidity, total sales and total assets moved in the same direction as hypothesized in the study. These variables were further assessed using regression analysis as shown in section 5.3 below.

5.3 Hypotheses Testing using Regression Analysis

To establish the relationships, four hypotheses were formulated and tested. For purposes of testing the hypotheses, different regression models were run. First, finding out the correlation between capital structure and financial performance; secondly tests to determine the intervening effect of liquidity on the correlation between capital structure and financial performance; thirdly tests were carried out to test the moderating effect of firm size on the relationship between capital structure and financial performance; and lastly to find out the joint effect of capital structure, firm size, liquidity and financial performance of nonfinancial firms listed on the NSE.

To ascertain these relationships, the hypotheses were formulated and tested using simple and multiple regression analyses. The hypotheses were tested using the 95 percent confidence level (α=0.05) while p-values were used to establish the individual significance of the hypothesized relationships. The significance and general robustness of the model was assessed using F-statistic and p-values of significance. Overall, the F-statistic value greater than 1 signifies goodness of fit.

P-values greater or equal to 0.05 indicated that we would fail to reject the null hypothesis while those p-values of less than 0.05 signified that the null hypothesis would be rejected. ANOVA and panel analyses results have been presented and discussed below.

5.3.1 Capital structure and Financial Performance.

The study sought to determine the effect of capital structure and financial performance of the listed nonfinancial firms on the NSE and it employed panel data design. Panel data was used in establishing financial performance which was measured by Tobin's Q (equity market value/book value). Capital structure on the other hand was measured by total debt/total assets. The study sought to identify the effect of capital structure on financial performance. The following hypothesis was developed:

H_{01}: Capital structure has no effect on the financial performance of nonfinancial firms listed on the NSE. The maximum Likelihood Regression Model was employed in data analysis. The test statistic regression results with financial performance as the dependent variable and capital structure as the independent variable are reported in Table 5.2 below:

Table 5.2: panel data results for capital structure and financial performance

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567[a]	.321	.319	.98432

a. Predictors: (Constant), CS

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	167.231	1	167.231	172.602	.000[b]
	Residual	353.643	365	.969		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), CS

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.589	.077		7.602	.000
	CS	.715	.054	.567	13.138	.000

a. Dependent Variable: FP

The model coefficients are shown in table 5.2 (b) above. The results indicate that capital structure is a significant predictor because the p-value is 0.000 which is lesser than 0.05(level of significance). Furthermore, the results indicate R^2 of 0.321 which implies that capital structure explains 32.1% of the variability in financial performance. The results have rejected the null hypothesis implying that capital structure has a statistically significant effect on the financial performance of nonfinancial firms listed at the NSE. The regression model that explains the variation in financial performance as a consequence of capital structure is shown below:

$$\mathbf{Q_{it}=0.589+0.715CS_{it}}$$

Where:

Q= Financial Performance

CS= Capital Structure

5.3.2 Capital structure, Liquidity and Financial Performance

This study sought to ascertain the effect of liquidity on the relationship between capital structure and financial performance of the listed nonfinancial firms on the NSE. The corresponding hypothesis is:

Hypothesis 2: Liquidity has no effect on the relationship between capital structure and financial performance of nonfinancial firms listed at the Nairobi Securities Exchange.

The study employed secondary panel data in determining the results under this hypothesis. Secondary data was obtained from financial statements. Since (asset liquidity and temporary investments) are additive each of them was tested separately. Therefore under this hypothesis, two sub-hypotheses were developed as follows:

H_{02a}: The relationship between capital structure and financial performance of nonfinancial firms listed on the NSE is not intervened by asset liquidity.

H_{02b}: The relationship between capital structure and financial performance of non financial firms listed on the NSE is not intervened by temporary investments.

Asset liquidity was measured using current assets and current liabilities. In testing for mediation, first, the relationship between the dependent variable (financial performance) and the independent variable (capital structure) was carried out ignoring the intervening variable liquidity (asset liquidity). This was step 1 and is similar to the regressions performed under hypothesis 1 section 5.2. The model should indicate significance, where $p=<0.05$.

Next in the regression analysis is done between capital structure (independent variable) and liquidity (asset liquidity) ignoring financial performance (the dependent variable). Capital structure and liquidity (asset liquidity) relationship should be significant ($p=<0.05$) if one is to move to step 3.

Under step 3, regression analysis is done with financial performance as the dependent variable and both capital structure and liquidity (asset liquidity) as the independent variables. Regression results for step 1 are the same as shown in table 5.2 earlier: Results from step 1 shown in Table 5.2 indicate the p-value of 0.000 and is therefore significant. The regression model is specified as $Q_{it}=0.589+0.715CS_{it.}$ This necessitates moving to step 2 the results of which are depicted in Table 5.3 below.

Table 5.3: Panel data results of Liquidity (asset liquidity) as the Dependent variable and Capital structure as the Independent variable

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.351[a]	.124	.121	.90094

a. Predictors: (Constant), CS

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.748	1	41.748	51.433	.000[b]
	Residual	296.269	365	.812		
	Total	338.017	366			

a. Dependent Variable: ASSETLQ

b. Predictors: (Constant), CS

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.676	.071		9.532	.000
	CS	.357	.050	.351	7.172	.000

a. Dependent Variable: ASSETLQ

Results in Table 5.3(c) above indicate that capital structure is a significant predictor of asset liquidity as shown by sig=<0.05. Table 5.3(a) above shows R squared of 0.124 which implies 12.4% of variations in asset liquidity are explained by capital structure. The regression model for the relationship between capital structure and asset liquidity ignoring financial performance is given below:

$$\mathbf{Q_{it} = 0.676 + 0.357CS_{it}}$$

Since the relationship between capital structure and asset liquidity is significant (as depicted by sig=0.00) we can now move to step 3; where financial performance is the dependent variable, while capital structure and asset liquidity are the predictor variables. The results for step 3 are displayed in table 5.4 below:

Table 5.4: Panel Data Results of Financial Performance as the Dependent variable while Liquidity (asset liquidity) and Capital Structure are the Independent Variables.

(a)Model Summary

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.661[a]	.437	.434	.89726

a. Predictors: (Constant), ASSETLQ, CS

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	227.828	2	113.914	141.496	.000[b]
	Residual	293.046	364	.805		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), ASSETLQ, CS

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.283	.079		3.588	.000
	CS	.554	.053	.439	10.444	.000
	ASSETLQ	.452	.052	.364	8.676	.000

a. Dependent Variable: FP

The findings in Table 5.4 above indicate that financial performance is significantly predicted by asset liquidity (p=0.000 which is<0.05). Capital structure also significantly predicts financial performance. This is depicted by (p=0.000 which is <0.05). From the regression results above, R squared changed from 0.124 to 0.473 showing a significant increase in the relationship between capital structure and financial performance of the listed nonfinancial firms on the NSE.

This change is attributed to the intervening variable effect. The conclusion drawn from the findings, therefore, is that asset liquidity has a positive statistically significant intervening effect on the relationship between capital structure and financial performance. The null sub-hypothesis that asset liquidity has no intervening effect on the relationship between capital structure and financial performance of nonfinancial firms listed on the Nairobi Securities Exchange is therefore rejected. The resultant regression model is as shown below.

$$\mathbf{Q_{it} = .283 + 0.452ASSETLQ_{it+} \ 0.554CS_{it}}$$

Temporary investments were measured by using the temporary investments to the total assets. In testing for mediation, first, the relationship between the dependent variable (financial performance) and the independent variable (capital structure) was carried out ignoring the intervening variable liquidity (temporary investments). This was step 1 and is similar to the

regressions performed under hypothesis 1 section 5.2. The model should indicate significance, where p=<0.05.

Next in the regression analysis is done between capital structure (independent variable) and liquidity (temporary investments) ignoring financial performance (the dependent variable). Capital structure and liquidity (temporary investments) relationship should be significant (p=<0.05) if one is to move to step 3.

Under step 3, regression analysis is done with financial performance as the dependent variable and both capital structure and liquidity (temporary investments) as independent variables. Regression results for step 1 are the same as shown in table 5.1 earlier: Results from step 1 shown in Table 5.2 indicate the p-value of 0.000 and is therefore significant. The regression model is specified as $Q_{it=}0.589+0.715CS_{it.}$ This necessitates moving to step 2 the results of which are depicted in Table 5.5 below.

Table 5.5: Panel data results of Liquidity (temporary investments) as the Dependent variable and Capital structure as the Independent variable

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.450[a]	.202	.200	.67692

a. Predictors: (Constant), CS

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.461	1	42.461	92.665	.000[b]
	Residual	167.252	365	.458		
	Total	209.714	366			

a. Dependent Variable: TEMPINV

b. Predictors: (Constant), CS

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.811	.053		15.234	.000
	CS	.360	.037	.450	9.626	.000

a. Dependent Variable: TEMPINV

Results in Table 5.5(c) above indicate that capital structure is a significant predictor of liquidity (temporary investment) as shown by sig=<0.05. Table 5.5(a) above shows R square of 0.202 which implies 20.2% variations in liquidity (temporary investment) are explained by capital structure. The regression model for the relationship between capital structure and temporary investment ignoring financial performance is given below:

$$\mathbf{Q_{it} = 0.811 + 0.360 CS_{it}}$$

Since the relationship between capital structure and liquidity(temporary investment) is significant (as depicted by sig=0.00) we can now move to step 3; where financial performance is the dependent variable, while capital structure and liquidity(temporary investments) are the predictor variables. The results for step 3 are displayed in table 5.6 below:

Table 5.6: Panel Data Results of Financial Performance as the Dependent variable while Liquidity (temporary investments) and Capital Structure are the Independent Variables.

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.631[a]	.399	.395	.92764

a. Predictors: (Constant), CS, TEMPINV

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	207.645	2	103.823	120.651	.000[b]
	Residual	313.229	364	.861		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), CS, TEMPINV

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.190	.093		2.034	.043
	TEMPINV	.492	.072	.312	6.853	.000
	CS	.538	.057	.426	9.366	.000

a. Dependent Variable: FP

The findings in Table 5.6 above indicate that financial performance is significantly predicted by temporary investments (p=0.004 which is<0.05). Capital structure also significantly predicts financial performance. This is depicted by (p=0.000 which is <0.05). From the regression results above, Adjusted R squared changed from 0.202 to 0.395 showing a significant increase in the relationship between capital structure and financial performance of the listed nonfinancial firms on the NSE.

This change is attributed to the intervening variable effect. The conclusion drawn from the findings, therefore, is that temporary investment has a positive statistically significant intervening effect on the relationship between capital structure and financial performance of the listed nonfinancial firms. The null sub-hypothesis that temporary investment has no intervening effect on the relationship between capital structure and financial performance of nonfinancial firms listed on the Nairobi Securities Exchange is therefore rejected. The resultant regression model is as shown below.

$$\mathbf{Q_{it} = 0.190 + .492\ TEMPINV_{it} + 0.538CS_{it}}$$

5.3.3 Capital Structure, Firm Size and Financial Performance

This study sought to identify the effect of firm size on the relationship between capital structure and financial performance. The corresponding hypothesis is:

Hypothesis 3: Firm size has no moderating effect on the relationship between capital structure and financial performance of nonfinancial firms listed on the Nairobi Securities Exchange.

The study employed secondary panel data in determining the results under this hypothesis. Secondary data was obtained from financial statements. Since (total sales and total assets) are additive each of them was tested separately. Therefore, under this hypothesis, two sub-hypotheses were developed as follows:

H_{03a}: Firm size (Total sales) has no moderating effect on the relationship between capital structure and financial performance of nonfinancial firms listed on the Nairobi Securities Exchange.

H_{03b}: Firm size (Total assets) has no moderating effect on the relationship between capital structure and financial performance of nonfinancial firms listed on the Nairobi Securities Exchange.

Secondary data was obtained from financial statements and measured firm size using total assets and total sales. Total sales were measured by using the natural log of total sales and total assets were measured by the natural log of total assets. The moderating effect of firm size on the relationship between capital structure and financial performance was assessed using the centered approach by (Wu & Zumbo, 2008).

This involves the following two steps. Step 1 involves the independent variables and the moderator variables being regressed against financial performance. Step 2 on the other hand entails the introduction of the centered approach in the model with the predictor, moderating variable and interaction term being factored into the model. The regression results are shown in Table 5.7 below.

Table 5.7: Panel Data Results for Financial Performance as a Dependent Variable and Capital structure and Firm Size (Total Sales) as the predictor variables.

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591[a]	.349	.345	.96512

a. Predictors: (Constant), TSALES, CS

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	181.825	2	90.912	97.603	.000[b]
	Residual	339.049	364	.931		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), TSALES, CS

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.098	.145		.675	.500
	CS	.717	.053	.568	13.431	.000
	TSALES	.230	.058	.167	3.958	.000

a. Dependent Variable: FP

Results in Table 5.7(a) above show R^2 of 0.349 and adjusted R^2 0.345. Table 5.7(c) above shows the coefficients of capital structure and total sales as 0.717 and 0.230 respectively. The p values for capital structure and total sales are 0.000, indicating statistical significance for capital structure because the p-value is less than 0.05. Results for step 2 are displayed in Table 5.8 below, where the interaction term is introduced.

Table 5.8: Panel Data Results for Financial Performance as the Dependent Variable and Capital Structure and Firm Size (Total Sales) as the Predictor Variables, Centered Approach

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.594[a]	.353	.348	.96351

a. Predictors: (Constant), TSALES_CENTRED, CS_CENTRED, CS_TSALES_CENTERED

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	183.884	3	61.295	66.026	.000[b]
	Residual	336.990	363	.928		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), TSALES_CENTRED, CS_CENTRED, CS_TSALES_CENTERED

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.351	.050		26.855	.000
	CS_TSALES_CENTERED	.082	.055	.068	1.489	.137
	CS_CENTRED	-.694	.056	-.550	-12.501	.000
	TSALES_CENTRED	-.204	.061	-.148	-3.364	.001

a. Dependent Variable: FP

Results from table 5.8 above show R squared show change from 0.349 to 0.353 which is a change of 0.004(0.4% change) and adjusted R squared change from 0.345 to 0.348 which is a

change of 0.003(0.3% change) which is occasioned by the interaction term. This is also confirmed by the p-values which are less than 0.05 which means that firm size (Total sales) significantly moderates the relationship between capital structure and financial performance. The regression model for the moderation effect of total sales is shown below:

$Q_{it} = 1.351 + -0.694 CS_{it} + -.0204 SALES_{it} + 0.082\ CS\ SALES_{it}$

Table 5.9: Panel Data Results for Financial Performance as a Dependent Variable and Capital Structure and Firm Size (Total Assets) as the predictor variables.

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567[a]	.321	.317	.98555

a. Predictors: (Constant), TASSETS, CS

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	167.318	2	83.659	86.130	.000[b]
	Residual	353.557	364	.971		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), TASSETS, CS

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.618	.125		4.930	.000
	CS	.716	.055	.567	13.125	.000
	TASSETS	-.016	.054	-.013	-.298	.766

a. Dependent Variable: FP

Results in Table 5.9(a) above show R^2 of 0.321 and adjusted R^2 of 0.317. Table 5.9(c) above shows the coefficients of capital structure and total assets as 0.716 and- 0.016 respectively. The p-values for capital structure and total assets are 0.000 and 0.766 respectively, indicating statistical significance for total assets because the p-value is less than 0.05. The p-value for capital structure is less than 0.05 indicating statistical significance. Results for step 2 are displayed in Table 5.10 below, where the interaction term is introduced.

Table 5.10: Panel Data Results for Financial Performance as the Dependent Variable and Capital Structure and Firm Size (Total Assets) as the Predictor Variables, Centered Approach

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.571[a]	.326	.321	.98329

a. Predictors: (Constant), CS_TASSETS_CENTERED, TASSETS_CENTERED, CS_CENTRED

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	169.903	3	56.634	58.576	.000[b]
	Residual	350.971	363	.967		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), CS_TASSETS_CENTERED, TASSETS_CENTERED, CS_CENTRED

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.352	.051		26.339	.000
	CS_CENTRED	-.707	.055	-.560	-12.944	.000
	TASSETS_CENTERED	.022	.054	.018	.411	.681
	CS_TASSETS_CENTERED	-.097	.059	-.071	-1.635	.103

a. Dependent Variable: FP

Results from table 5.10 above show R squared change from 0.321 to 0.326 which is a change of 0.005(0.5% change) and adjusted R squared change from 0.317 to 0.321 is a change of 0.004(0.4% change) which is occasioned by the interaction term. This is also confirmed by the p-value for total assets which are less than 0.05. This means that firm size (total assets) significantly moderates the relationship between capital structure and financial performance of the listed nonfinancial firms. The regression model for the moderation effect of total assets is shown below:

$$Q_{it} = 1.352 + -0.707CS_{it} + .022ASSETS_{it} + -0.097CS\ ASSETS_{it}$$

5.3.4 Capital Structure, Liquidity, Firm Size and Financial Performance

This study sought to establish the joint effect of capital structure, liquidity, firm size and financial performance. The corresponding hypothesis is as follows:

Hypothesis 4: There is no joint effect of capital structure, firm size, liquidity and financial performance of nonfinancial firms listed in the Nairobi Securities Exchange.

Secondary data was obtained from financial statements. The independent variable is capital structure measured by total debt/total assets; the intervening variable is liquidity measured by

current assets to current liabilities. The moderating variable is firm size measured by the natural log of total assets and the natural log of total sales. Financial performance was measured using Tobin's Q and is the dependent variable. Panel data results are presented in Table 5.11 below:

Table 5.11: Panel Data Results for Capital structure, Liquidity, Firm Size and Financial Performance.

(a)Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.695[a]	.484	.476	.86323

a. Predictors: (Constant), TEMPINV, TSALES, TASSETS, CS, ASSETLQ

(b)ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	251.872	5	50.374	67.602	.000[b]
	Residual	269.003	361	.745		
	Total	520.874	366			

a. Dependent Variable: FP

b. Predictors: (Constant), TEMPINV, TSALES, TASSETS, CS, ASSETLQ

(c)Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.384	.172		-2.228	.026
	CS	.490	.054	.389	9.078	.000
	TASSETS	.007	.048	.006	.150	.881
	TSALES	.232	.052	.169	4.449	.000
	ASSETLQ	.349	.057	.281	6.133	.000
	TEMPINV	.282	.076	.179	3.713	.000

a. Dependent Variable: FP

From the panel study results, the intercept (constant) is -0.384 with a statistically significant p-value of 0.026. Capital structure has a coefficient value of 0.490 with a p-value of 0.000 which is significant. The findings indicate that capital structure still has a positive effect on the financial performance of the listed nonfinancial firms and the effect is still significant even when control variables are introduced in the model. The effect of liquidity (asset liquidity) is also positive and significant at a p-value of 0.000. The effect of liquidity (temporary investment) is also positive and significant at a p-value of 0.000. Total sales show a positive and significant joint effect (p is 0.000). Total assets show a positive and insignificant joint effect (p is0.881). The R^2 is 0.484 indicating that 48.4% of changes in financial performance are accounted by the joint effect of capital structure, liquidity (asset liquidity and temporary investments) and firm size (total assets and total sales).

The joint effect of capital structure, liquidity and firm size on the financial performance of listed nonfinancial firms at the Nairobi Securities Exchange indicates a positive significant relationship. The null hypothesis is therefore rejected. There is a significant joint effect of capital structure, liquidity and firm size on the financial performance of nonfinancial firms listed on the Nairobi Securities Exchange. The regression model that explains the variation in firm financial performance as a result of the joint effect of capital structure, liquidity and firm size is as shown below:

$$\mathbf{Q_{it} = -0.384 + 0.490CS_{it} + 0.349\ ASSETLQ_{it} + 0.282TEMPINV_{it} + 0.232SALES_{it} + 0.007\ ASSETS_{it}}$$

Where:

Q_{it} =Financial Performance

CS=Capital Structure

ASSETLQ=Asset Liquidity

TEMPINV=Temporary Investment

SALES=Total Sales

ASSETS=Total Assets

5.4 Discussion of Results

The study had four hypotheses. The results under each objective are discussed here below.

5.4.1 The influence of capital structure on Financial Performance

The first objective of the study was to establish the influence of capital structure on the financial performance of nonfinancial firms listed on the Nairobi Securities Exchange. This was achieved through analyzing the audited financial statements of the listed nonfinancial firms (panel data).

The results indicate that there is a significant positive relationship between capital structure and financial performance. The findings on the influence of capital structure on financial performance also showed a statistically significant relationship. These studies are consistent with other studies on capital structure and financial performance. For example, Saeedi and Mahmoodi (2011) found a positive and significant relationship between capital structure and financial performance of firms listed at the Teheran Securities Exchange. The positive significant effect of capital structure on financial performance is due to the increased level of leverage by firms. This leads firms to employ more debt in their capital structure thereby obtaining the debt tax benefits. Consequently, the tax benefits lead to increased profitability hence improved financial performance.

Similarly, Cyril (2016) established that capital structure has an effect on both ROA and AT of the conglomerates but no effect on ROE and EPS of the conglomerates. The study difference in the study findings by Cyril (2016) is due to business factors that affect a particular industry depending on the industry where the firm operates. This is due to the different tax benefits obtained in the debt-equity mix in various industry sectors. Furthermore, differences in the study findings are due to differences in the operationalisation of financial performance between the accounting-based and market-based measures.

The study findings also indicate that nonfinancial firms have consistently increased the use of debt in their capital structure. Lenders often perceive larger firms as less risky consumers of credit because of their superior collateral structure. This is in contrast to smaller entities that apparently possess inferior tangibility and therefore suffer from credit rationing. Considering the advantage enjoyed by larger firms in accessing credit, they are hypothetically expected to perform better, have higher financial performance and have less financial distress as compared to smaller firms. The findings of the study are consistent with those by Javed and Akhtar (2012) who opine that there is a positive relationship between financial leverage, financial performance, growth and size of the companies. The findings of the study are consistent with the agency cost theory. According to Jensen and Meckling (1976), agency cost theory is concerned with the diverging interest when the firm ownership and management are separated. The positive significant effect of capital structure on financial performance is due to the increased level of leverage by firms. Therefore, the amount of leverage a firm employs has a similar positive effect despite the differences in economic conditions from one country to another. This is because firm managers are compensated accordingly when they make the best firm financing decisions that involve high leveraging to enhance firm value and work in the shareholders' interest.

The major assumption of the agency theory is that the separation of ownership and management creates conflicts among principals and agents. The main argument behind the agency theory is that corporate managers act in their interests. They are looking for job security, prerequisites, and in the worst cases getting a hand on assets and cash flows. Managers have incentives to decrease the firm value unless the free cash flow distributes between stakeholders. Jensen (1986) argues that the problem is how to motivate managers to disgorge the cash rather than investing it below the cost of capital or wasting it on organization inefficiencies. The study findings indicate increased use of debt has a positive effect on financial performance. This is due to the application of more debt in the capital structure to confine the managers. This strategy would force the firm to limit its spending or perks to avoid the default risk thereby enhancing firm value.

5.4.2 The influence of Liquidity on the relationship between Capital Structure and Financial Performance

The second objective was to assess the influence of liquidity on the relationship between capital structure and financial performance of nonfinancial firms listed at the NSE. The study hypothesized that liquidity has no significant intervening effect on the relationship between capital structure and financial performance of nonfinancial firms listed at the NSE. The assessment of liquidity, capital structure and financial performance was achieved by reviewing financial statements of nonfinancial companies listed at the NSE. The results indicate a positive statistically significant intervening effect of liquidity on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE.

Furthermore, higher leverage is associated with high liquidity levels. This is because liquidity principally affects financial costs reduction or growth, changes in the sales dynamic, as well as it influence on company risk level. The decisive significance of liquidity means that it is important for company development. Consequently, high asset liquidity and temporary investments lead to an increase in the financial performance of nonfinancial firms. These findings are supported by Akenga (2015) who posits that liquidity plays a major role in influencing the profitability of the firms listed at the NSE. Akenga(2015) further argues that liquidity needs to be emphasized in the financial department of firms by ensuring that firms have adequate amounts required for meeting their obligations, as and when they fall due to maximize their ROA.

Highly leveraged firms hold to highly liquid assets to avoid high costs associated with liquidation that ultimately affect financial performance. Furthermore, companies that hold to highly liquid assets can avoid costly defaults to debt holders when repayments of those debts become due. This ultimately leads to an increase in the financial performance of the listed nonfinancial firms. These findings are supported by Kimondo *et al.*, (2016) who found a positive relationship between liquidity and financial performance of the nonfinancial firms quoted on the Nairobi Securities Exchange. The similarities in the study findings are due to similarities in the study context in that both studies were done on the listed nonfinancial firms although in different time periods. These study findings indicate efficient management of current assets that reduces the cost of possible interruptions in the production process and loss of business due to scarcity of products and stockouts. These study findings also confirm that increasing the level of temporary investments affects increasing firm liquidity.

The study also shows that highly leveraged nonfinancial firms tend to have high liquidity. This is to prevent money from becoming tied up in systems that are difficult to cash out of and even

more difficult to assess for actual cash value. During times of emergency, large financial institutions shut down, making it difficult for people to access the cash they need to buy essentials like food, gasoline and other emergency supplies. These study findings are in agreement with Frieder and Subrahmanyam (2005) who conducted a study that sought to determine how leverage influenced liquidity levels of firms listed in the Toronto stocks exchange, Canada. They sought to test the validity of the agency hypothesis of capital structure as propounded by Jensen and Meckling (1976) on the Canadian capital markets. Leverage was represented by the total debt to total capital ratio, while the current ratio was used as a proxy for liquidity. The study found a significant and negative relationship between the study variables. The differences in the study findings are due to low liquidity levels caused by increased cash outflows in form of debt repayments. The firms in the Canadian capital markets held unto highly illiquid assets thereby they were unable to meet their current obligations.

Consistent with these findings, Ogundipe *et al.,* (2012) in their study to assess the effect of debt structure on liquidity levels of the Nigerian listed firms over the period 2002-2010, found a significant positive relationship between long term debt and liquidity. On the other hand, a significant inverse relationship between short-term debt and liquidity ratios was observed. This finding aligns with the signalling effect theory of debt structure postulated by Ross (1977) which opines that higher levels of long-term debt signify higher quality to the investors who respond by investing in the firm; effectively raising the cash flow levels. The results of this study reveal that liquidity is positive and significantly associated with financial performance. This is attributed to liquidity providing the necessary cash to firms to be able to meet their precautionary, transaction and speculative needs effectively. This helps increase firms' financial performance. The

similarity in the study findings indicates that the study contexts are similar in that the firms under study are based in developing countries that share almost similar economic risks.

5.4.3 Effect of Firm Size on the relationship between Capital Structure and Financial Performance of the listed nonfinancial firms on the NSE.

The third objective of the study was to determine the moderating effect of firm size on the relationship between capital structure and financial performance of the listed nonfinancial firm on the Nairobi Securities Exchange.

The study indicates that the use of leverage in financing operations is more common among large firms compared to small ones. Among the reasons for limited use of leverage among small firms include asymmetric information (adverse selection), higher bankruptcy costs, huge costs of resolving informational asymmetries and greater agency costs. The study findings, therefore, indicate that firm size exhibits a statistically significant positive moderating effect on the relationship between capital structure and financial performance, and the effect is statistically significant. The positive effect of firm size confirms the results of the study conducted by Mugai and Muriithi (2017) who found out that firm size has a strong moderating effect on the relationship between capital structure and the nonfinancial firms' financial distress. This indicates that larger firms report higher financial performance and tend to face higher financial distress as compared to smaller firms. Similarly, Abbasi (2015) found out a significant moderating effect of firm size on the relationship between firm growth and firm performance in Pakistan. The study findings show that increases in firm size lead to a commensurate increase in financial performance. This is because big firms can attract exemplary human resources that significantly contribute to their financial performance.

Large firms can benefit from economies of scale, scope, specialization and stronger bargaining power. Consequently, bigger firms must be profitable than smaller firms. Relatively large firms tend to be more diversified; therefore, they are less prone to insolvency. Large firms are less likely to go bankrupt since they undertake massive diversification compared to smaller companies. Therefore, low bankruptcy levels enable large firms to finance their operations using more debts. Consequently, higher debt levels lead to an increase in financial performance. Similarly, Wahome *et al.*, (2015) studied the effects of firm size and risk on the decisions regarding capital structure among the Kenyan Insurance Industry using the panel regression model. The results of the study indicated that the use of leverage in financing operations was more common among large insurance companies compared to small ones and this led to an increase in the financial performance of firms. Among the reasons identified for limited use of leverage among small firms include asymmetric information (adverse selection), higher bankruptcy costs, huge costs of resolving informational asymmetries and greater agency costs. From the study findings, the increase in financial performance as a result of an increase in firm size is due to the reason that large firms are also less likely to go bankrupt even with increased leverage levels since they undertake massive diversification compared to smaller companies. This massive diversification helps in risk mitigation that leads to an increase in the financial performance of the listed nonfinancial firms.

The study findings also indicate that firms' total assets influence the financial performance of the listed nonfinancial firms. There is a distortion in the degree of information asymmetry between insiders and the capital markets in larger firms because they face more examination by ever-suspicious investors. Consistent with these findings, Nyameino and Olweny (2014) found firm size to be positively related to financial performance. Abbasia and Malik (2015) classified the

relationship between firm size and financial performance by concluding that larger firms had higher likelihoods of obtaining credit from financial institutions and could get loans at lower rates because they have superior credit worth ratings and have a lower risk of bankruptcy. From the study findings, the increase in financial performance as a result of an increase in firm size is attributable to benefits accrued by larger firms such as low level of information asymmetries and ease in obtaining financial resources. The combinative effect of these factors; low level of information asymmetries and ease in obtaining financial resources helps in enhancing the financial performance of the listed nonfinancial firms. Furthermore, big firms tend to enjoy economies of scale that help to reduce costs and promote sales through aggressive marketing and lower product costs.

5.4.4 The Joint effect of Capital Structure, Liquidity, Firm Size and Financial Performance

The last objective of the study was to establish the joint effect of capital structure, liquidity, firm size and financial performance of the listed nonfinancial firms as measured by Tobin's Q. Panel data results indicate that there is a positive statistically significant joint effect of capital structure, liquidity and firm size on the financial performance of the listed nonfinancial firms on the NSE. These findings support results by (Leibenstein, 2004). This can be attributable to the argument that bigger firms do attract exemplary human resources that can significantly contribute to their financial performance.

The study reveals that there is a positive impact of capital structure on asset liquidity that lies on the reasoning that less liquid assets attract higher costs which increases liquidation costs, debt and bankruptcy. Therefore, highly leveraged firms need higher liquidity of assets to reduce the likelihood of default. Debt financing helps enhance firm liquidity because highly leveraged firms

tend to hold on to highly illiquid assets to avoid costs that may result from any debt defaults. Consequently, this leads to an increase in the financial performance of the listed nonfinancial firms. The findings are also similar to Abbasia and Malik(2015) who posit that bigger firms tend to hold unto high debt levels as compared to equity in their capital structure. This leads to an increase in financial performance.

Large nonfinancial firms have fewer chances of facing bankruptcy as they tend to be well-diversified, unlike the financial firms that tend to face overregulation. Therefore, nonfinancial firms tend to be highly leveraged to help improve their financial performance. Furthermore, large nonfinancial firms can easily raise funds from debt markets compared to small firms that find it difficult to raise their capital from the stock exchange. Consistent with these findings, is the study by Tamizhselvan (2010) who determined the relationship between firm size and profitability. The authors used the natural logarithm of sales and total assets as measures of size and profit margin as well as profit to total assets as measures of profitability. The study found a positive and significant relationship between the two variables. The consistency in the study findings is attributed to the fact that large firms can arrange for debt at discounted interest rates as well as refinance long-term debt hence enjoy sustained liquidity to finance the capital projects.

Overall, the joint effect of capital structure, firm size, liquidity and the financial performance of nonfinancial firms listed on the NSE indicate a positive significant relationship. Therefore, the null hypothesis which says that there is no joint effect of capital structure, liquidity and financial performance of the nonfinancial firms listed on the NSE is rejected. These results have rejected the capital irrelevance theory. This is because capital structure, liquidity and firm size have indicated a positive joint effect on firm financial performance. On the other hand, the trade off theory and pecking order theory are supported by these findings.

Table 5.12: Summary of Tests of Hypotheses, Results, and Conclusions

Hypothesis	R^2	(P-value)	Conclusion
H_1: Capital structure has no effect on the financial performance of nonfinancial firms listed on the NSE.	32.1	0.000	Null Hypothesis is rejected
H_{2a}: Capital structure and performance of non financial firms listed on the NSE is not intervened by asset liquidity.	12.4	0.000	Null Hypothesis is rejected
H_{2b}: Capital structure and performance of non financial firms listed on the NSE is not intervened by temporary investments.	20.2	0.000	Null Hypothesis is rejected
H_{3a}: Capital structure and financial performance of non financial firms listed on the NSE is not moderated by a firm's total sales.	34.9	0.001	Null Hypothesis is rejected
H_{3b}: Capital structure and financial performance of non financial firms listed at the NSE is not moderated by a firm's total assets.	32.1	0.681	Null Hypothesis is accepted
H_4: There is no joint effect of capital structure, firm size and liquidity on the financial performance	48.4	0.000	Null Hypothesis is rejected

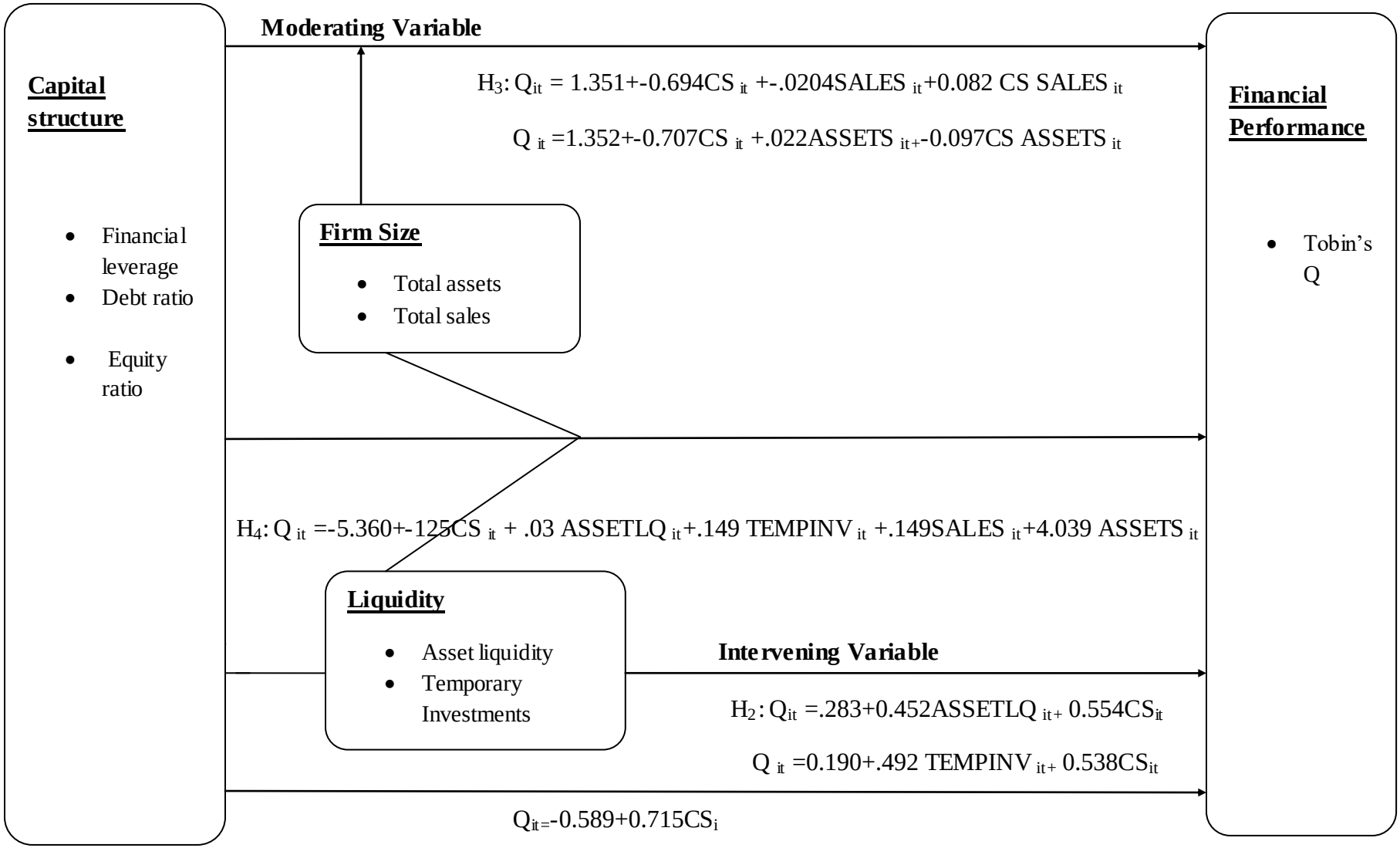
of nonfinancial firms listed at the NSE.			

5.5 Summary and Presentation of Empirical Models

The chapter presented the study results from analytical tests conducted to verify the study hypotheses. The findings of the statistical analyses carried out were presented and interpreted. The study established that capital structure has a statistically significant positive effect on financial performance. The relationship is intervened by liquidity (asset liquidity& temporary investments) and moderated by firm size (total sales & total assets).

Liquidity (asset liquidity & temporary investments) has a statistically significant positive intervening effect on the relationship between capital structure and financial performance. Furthermore, firm size (total sales & total assets) has a statistically significant positive moderating effect on the relationship between capital structure and financial performance. Overall, the study established that there is a joint effect of capital structure, liquidity (asset liquidity & temporary investments), firm size (total sales & total assets) and financial performance of nonfinancial firms listed on the NSE. The joint effect is positive and statistically significant. The empirical conceptual model depicting the relationships between the variables is presented in figure 5.1 below:

Figure 5.1: Revised Empirical Model-Financial Performance



CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The study investigated the relationship between capital structure, liquidity, firm size and financial performance of the NSE listed nonfinancial firms. The independent variable is capital structure; liquidity is the intervening variable while firm size is the moderating variable. Financial performance is the dependent variable. The chapter has summarized the findings of the study and made conclusions upon which recommendations are drawn. Discussions, recommendations and conclusions have been presented. These have been discussed in the light of other studies that have investigated the same or similar variables in other settings. The chapter ends with the study implications to theory, policy, practice and recommendations for further research.

The study had four objectives upon which conclusions are aligned to. The objectives were: first to determine the relationship between capital structure and financial performance of nonfinancial firms listed at the NSE; second, to assess the influence of liquidity on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE; third, to determine the effect of firm size on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE; and lastly to determine the joint effect of capital structure, liquidity, firm size and financial performance of the nonfinancial firms listed on the NSE.

6.2 Summary of Findings

This study was founded on the premise that capital structure has an influence on financial performance, that the relationship between the two is intervened by liquidity and moderated by firm size. A conceptual framework was therefore developed and the study empirically tested. Hypotheses were guided by the study objectives. The first objective of the study was set to find out the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE. The findings reveal that capital structure has a statistically significant positive effect on the financial performance of the nonfinancial firms listed on the NSE. The findings are supported by a coefficient of 32.1 which indicates that the variations in financial performance (explanatory variable) are explained by capital structure (predictor variable). The effect of capital structure was established to be statistically significant and therefore the null hypothesis was rejected. Therefore, we reject the null hypothesis that capital structure has no statistically significant effect on the financial performance of the nonfinancial firms listed on the NSE.

The results indicate that there is a significant positive relationship between capital structure and financial performance. The findings on the influence of capital structure on financial performance also showed a statistically significant relationship. These studies are consistent with other studies on capital structure and financial performance. For example, Saeedi and Mahmoodi (2011) found a positive relationship between capital structure and financial performance of firms listed at the Teheran Securities Exchange. The positive significant effect of capital structure on financial performance is due to the increased level of leverage by firms. This leads firms to employ more debt than equity in their capital structure thereby obtaining the debt tax benefits.

Consequently, the tax benefits lead to increased profitability hence improved financial performance.

Similarly, Cyril (2016) established that capital structure has an effect on both ROA and AT of the conglomerates but no effect on ROE and EPS of the conglomerate. The study difference in the study findings by Cyril (2016) is due to business factors that affect a particular industry depending on where the firm operates. This is due to the different tax benefits obtained in the debt-equity mix in various industry sectors. Furthermore, differences in the study findings are due to differences in the operationalisation of financial performance between the accounting-based and market-based measures.

The study findings also indicate that nonfinancial firms have consistently increased the use of debt in their capital structure. Lenders often perceive larger firms as less risky consumers of credit because of their superior collateral structure. This is in contrast to smaller entities that apparently possess inferior tangibility and therefore suffer from credit rationing. Considering the advantage enjoyed by larger firms in accessing credit, they are hypothetically expected to perform better, hence have higher financial performance and less financial distress as compared to smaller firms. The findings of the study are consistent with those by Javed and Akhtar (2012) who opine that there is a positive relationship between financial leverage, financial performance, growth and size of the companies. The findings of the study are consistent with the agency cost theory. According to Jensen and Meckling (1976), agency cost theory is concerned with the diverging interest when the firm ownership and management are separated. The positive significant effect of capital structure on financial performance is due to an increased level of leverage by firms. Therefore the amount of leverage a firm employs has a similar positive effect despite the differences in economic conditions from one country to another. This is because firm

managers are compensated accordingly when they make the best firm financing decisions that enhance firm value and work in the shareholders' interest.

The second objective of the study sought to assess the influence of liquidity on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE. Liquidity had two indicators of asset liquidity and temporary investments. The findings indicate that asset liquidity has a positive statistically significant intervening effect on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE. The study also indicates that temporary investments have a positive statistically intervening effect on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE. Thus the study rejected the null hypotheses which state that liquidity (asset liquidity and temporary investment) has no significant intervening effect on the relationship between capital structure and financial performance of the nonfinancial firms listed at the NSE.

Highly leveraged nonfinancial firms tend to have higher liquidity of assets to reduce the likelihood of default. Liquidity can allow a firm to deal with unexpected contingencies and to cope with its obligations during periods of low earnings. Large firms deal with liquidity challenges by holding onto liquid assets and increasing the amount of current assets in their books of account. These findings are supported by Akenga (2015) who posits that liquidity plays a major role in influencing the profitability of the firms listed at the NSE. Furthermore, the trade off theory and the pecking order theory seem to be supported by these findings. The results reveal that liquidity is positive and significantly associated with financial performance. This is attributed to liquidity providing the necessary cash to firms to be able to meet their

precautionary, transaction and speculative needs effectively. This helps increase firms' financial performance.

Similarly, Kimondo *et al*., (2016) found a positive relationship between liquidity and financial performance at a 1% level of significance. These findings are contrary to the argument of the capital irrelevance theory. On the contrary, the trade off theory and the pecking order theory are supported by the results. These study findings are due to efficient management of current assets that reduces the cost of possible interruptions in the production process and the loss of business due to scarcity of products and stockouts.

The third objective of the study sought to determine the effect of firm's size on the relationship between capital structure and financial performance of the nonfinancial firms listed on the NSE. Firm size had two indicators of total sales and total assets. The findings indicate that firm size (total sales) has a positive significant moderating effect on the relationship between capital structure and financial performance of firms listed on the NSE. The findings also indicate that firm size (total assets) had an insignificant moderating effect on the relationship between capital structure and financial performance of firms listed on the NSE. The positive effect of firm size confirms the results of the study conducted by Mugai and Muriithi (2017) who found out that firm size has a strong moderating effect on the relationship between capital structure and the non-financial firms' financial distress. Similarly, Abbasi (2015) found out a moderating effect of firm size on the relationship between firm growth and firm performance in Pakistan. This is because big firms can attract exemplary human resources that will significantly contribute to their financial performance.

Large firms can benefit from economies of scale, scope, specialization and stronger bargaining power. Consequently, bigger firms tend to be profitable than smaller firms. Relatively large firms tend to be more diversified; therefore, they are less prone to insolvency. Large firms are less likely to go bankrupt since they undertake massive diversification compared to smaller companies. Therefore, low bankruptcy levels enable large firms to finance their operations using more debts. Consequently, higher debt levels often lead to an increase in financial performance. Similarly, Wahome *et al.*, (2015) studied the effects of firm size and risk on the decisions regarding capital structure among the Kenyan Insurance Industry using the panel regression model. The results of the study indicated that the use of leverage in financing operations was more common among large insurance compared to small ones and this lead to an increase in the financial performance of firms. Among the reasons identified for limited use of leverage among small firms include asymmetric information (adverse selection), higher bankruptcy costs, huge costs of resolving informational asymmetries and greater agency costs. From the study findings, the increase in financial performance as a result of an increase in firm size is due to the reason that large firms are also less likely to go bankrupt even with increased leverage levels since they undertake massive diversification compared to smaller companies. This massive diversification helps in risk mitigation that leads to an increase in financial performance of the listed nonfinancial firms.

The study findings also indicate that total assets influence financial performance of the listed non financial firms. There is distortion in the degree of information asymmetry between insiders and the capital markets in larger firms because they face more examination by ever-suspicious investors. The ever-suspicious investors, therefore, cause firm managers of these large firms with huge asset base to embrace higher leverage in their firms to signalize company stability to these

investors. Consistent with these findings, Nyameino and Olweny(2014) found firm size to be positively related to financial performance. Abbasia and Malik (2015) classified the relationship between firm size and financial performance by concluding that larger firms had higher likelihoods of obtaining credit from financial institutions and could get loans at lower rates because they have superior credit worth ratings and have a lower risk of bankruptcy.

From the study findings, the increase in financial performance as a result of an increase in firm size is attributable to benefits accrued by larger firms such as low levels of information asymmetries and ease in obtaining financial resources. The combinative effect of these factors; low level of information asymmetries and ease in obtaining financial resources helps in enhancing the financial performance of the listed nonfinancial firms. Furthermore, big firms tend to enjoy economies of scale that helps to reduce cost and promote sales through aggressive marketing and lower product costs which leads to an increase in the financial performance of the nonfinancial firms.

The fourth and final hypothesis sought to determine the joint effect of capital structure, liquidity, firm size and financial performance of the nonfinancial firms listed at the NSE. Results show positive coefficients for all variables, which means that as capital structure, liquidity and firm size jointly increase, the financial performance of the nonfinancial firms listed on the NSE also increases. Firm size (total assets & total sales) shows a positive statistically significant joint effect on firm financial performance and liquidity (asset liquidity & temporary investments) shows a positive statistically significant joint effect on firm financial performance. The results have rejected the capital irrelevance theory. On the hand, the results seem to support the trade off theory and the pecking order theory.

The study reveals that there is a positive impact of leverage on asset liquidity that lies in the reasoning that less liquid assets attract higher costs which increase liquidation costs, debt and bankruptcy. Therefore, highly leveraged firms need higher liquidity of assets to reduce the likelihood of default. Debt financing helps enhance firm liquidity because highly leveraged firms tend to hold on to highly liquid assets to avoid costs that may result from any debt defaults. Consequently, this leads to an increase in the financial performance of the listed nonfinancial firms. The findings are also similar to Abbasia and Malik (2015) who posit that bigger firms tend to hold unto high debt levels as compared to equity in their capital structure. This leads to an increase in financial performance.

Large nonfinancial firms have fewer chances of facing bankruptcy as they tend to be well-diversified, unlike the financial firms that tend to face overregulation. Therefore, nonfinancial firms tend to be highly leveraged to help improve their financial performance. Furthermore, large nonfinancial firms can easily raise funds from debt markets compared to small firms that find it difficult to raise their capital from the stock exchange. Consistent with these findings, is the study by Tamizhselvan (2010) who determined the relationship between firm size and profitability. The authors used the natural logarithm of sales and total assets as measures of size and profit margin as well as profit to total assets as measures of profitability. The study found a positive and significant relationship between the two variables. The consistency in the study findings is attributed to the fact that large firms can arrange for debt at discounted interest rates as well as refinance long-term debt hence enjoy sustained liquidity to finance their capital projects.

6.3 Conclusions of the Study

Based on the findings of the study, capital structure is vital to the firm financial performance of the nonfinancial firms listed at the Nairobi Securities Exchange. Best firm financing choices help firms to enhance their liquidity thereby improving their financial performance. Firms should strive to increase their leverage since it has a statistically significant positive effect on the financial performance of the nonfinancial firms listed on the NSE. Similarly, firms should increase their liquidity (asset liquidity & temporary investments) which; according to the findings in this study if increased leads to increased financial performance. This study has found no evidence supporting the capital irrelevance theory.

Firms should strive to increase their leverage since it has a statistically significant positive effect on the financial performance of the nonfinancial firms listed on the NSE. This is because from the study findings firms employ more debt than equity in their capital structure. This enables them to obtain debt tax benefits. Consequently, the tax benefits lead to increased profitability hence financial performance. Firm managers should seek to grow their firm sizes. This is because larger firms have consistently increased the use of debt in their capital structure. Lenders often perceive larger firms as less risky consumers of credit because of their superior collateral structure. This is in contrast to smaller entities that apparently possess inferior tangibility and therefore suffer from credit rationing.

Considering the advantage enjoyed by larger firms in accessing credit, they are hypothetically expected to perform better and hence have higher financial performance and less financial distress as compared to smaller firms. Consistent with these findings, Nyameino and Olweny (2014) found firm size to be positively related to financial performance. Similarly, Abbasi (2015) found out a moderating effect of firm size on the relationship between firm growth and firm

performance. The findings indicate the bigger the firm the stronger the relationship between capital structure and financial performance. The moderating effect is however contributed by an increase in total sales and total assets of the firms. Therefore firm managers should seek to increase their firms' total sales and total assets.

Firm managers should seek to increase firm leverage to enhance firm liquidity. Highly leveraged nonfinancial firms tend to have higher liquidity of assets to reduce the likelihood of default. Liquidity can allow a firm to deal with unexpected contingencies and to cope with its obligations during periods of low earnings. Large firms deal with liquidity challenges by holding onto liquid assets and increasing the amount of current assets in their books of account. Furthermore, large firms can benefit from economies of scale, scope, specialization and stronger bargaining power. Consequently, bigger firms tend to be profitable than smaller firms. Relatively large firms tend to be more diversified; therefore, they are less prone to insolvency.

Firm managers should furthermore seek to grow their firms because larger companies can attract exemplary human resources that will significantly contribute to their financial performance. Large firms are less likely to go bankrupt since they undertake massive diversification compared to smaller companies. Therefore, low bankruptcy levels enable large firms to finance their operations using more debts. Consequently, higher debt levels lead to an increase in financial performance. Wahome *et al.*, (2015) for instance studied the effects of firm size and risk on the decisions regarding capital structure among the Kenyan Insurance Industry using the panel regression model. The results of the study indicated that the use of leverage in financing operations was more common among large insurance firms compared to small ones. This leads to an increase in the financial performance of these firms.

Large nonfinancial firms have fewer chances of facing bankruptcy as they tend to be well-diversified, unlike the financial firms that tend to face overregulation. Therefore, nonfinancial firms tend to be highly leveraged to help improve their financial performance. Furthermore, large nonfinancial firms can easily raise funds from debt markets compared to small firms that find it difficult to raise their capital from the stock exchange. Consistent with these findings, is the study by Tamizhselvan (2010) who determined the relationship between firm size and profitability. The authors used the natural logarithm of sales and total assets as measures of size and profit margin as well as profit to total assets as measures of profitability. The study found a positive and significant relationship between the two variables.

6.4 Contributions of the study

The study has contributed to knowledge in the areas of capital structure, liquidity, firm size and financial performance. More specifically the study has contributed to theory, policy and practice.

6.4.1 Contribution to Theory

The results of this study have to a larger extent rejected the capital Irrelevance theory by Modigliani and Miller (1958) which postulates that the value of the firm is not determined by its debt and equity mix and the average cost of capital. The findings have therefore given credence to critics of the capital irrelevance theory who argue that it is out of touch with reality despite its opening of knowledge on firm financing. Based on this theory the performance of listed firms will not increase irrespective of the form of the capital structure adopted. However, due to the tax cost implications associated with equity financing and the risk of bankruptcy associated with debt financing, capital irrelevance theory has not been proven from the literature reviewed. On

the contrary, the study findings have indicated that highly leveraged firms tend to have increased financial performance of the listed nonfinancial firms on the Nairobi Securities Exchange.

The study findings have also given credibility to the pecking order theory by Myers and Majluf (1984) which postulates that due to information asymmetry, firm managers make decisions on firm financing depending on the effect of the embraced capital structure on the project NPV. To prevent the possibility of obtaining a negative project NPV, preference conditions come in, whereby, financing projects internally is highly considered than seeking external funding. Capital structure has shown a positive significant effect on financial performance. These findings imply that firms with high leverage tend to have increased liquidity as they tend to hold highly liquid assets that increase the financial performance of NSE listed nonfinancial firms.

The inclusion of firm size as a moderating variable provided an opportunity for the testing of the capital structure theories by providing empirical evidence on how firm size indicators such as total sales and total assets affect the financial performance of firms. The study adopted liquidity ratio (current assets/current liabilities) and temporary investment ratio (Total current assets-Inventory-Prepaid expenses)/Current Liabilities) as a measure of liquidity. This measurement approach has enabled a more robust approach in the assessment of the linkages between the study variables.

6.4.2 Contribution to Policy

The Kenyan context is characterized by the need to embrace the best firm financing choices by firm managers through the adoption of the best capital structure **(**Mugai & Muriithi, 2017). These findings have refuted the capital irrelevance theory by revealing a positive effect of capital

structure on the firm financial performance as intervened by liquidity. This implies that adopting high debt levels in companies by firm managers helps in enhancing liquidity in firms thereby helping in improving financial performance. Firm managers should endeavour to enhance liquidity to enhance firm financial performance. Firm managers also should not focus only on firm growth but on firm size, while examining and endeavouring to improve firms' financial performance.

Making the best capital structure choices involves enhancing a high level of leverage in firms. High leverage involves the increased use of debt in firms to enhance financial performance. Policymakers will therefore promote the call for embracing the best capital structure choices that consist of increased use of debt that will ultimately help enhance and protect shareholders' value.

6.4.3 Contribution to Practice

The study findings have shown the fundamental importance of firms embracing the best capital structure choices in enhancing firm financial performance. The joint effect of capital structure, firm size and liquidity on financial performance has yielded a positive relationship. Firm managers, investors and other practitioners will therefore put more emphasis on firms to make the best capital structure choices that involve higher debt than equity, that enhance liquidity, increase the firm size and promote financial performance.

Firm financing decisions and investment activities will be more keenly analyzed to enhance efficiency in firms. This study has also delineated capital structure decisions from liquidity unlike studies such as Boodhoo (2009) which generally regard capital structure as embracing liquidity. This gives firm managers, investors and other practitioners a better understanding of the variables and their linkages, which will enhance and protect shareholders' value in firms.

6.5 Limitations of the Study

The study focused on the nonfinancial firms listed at the NSE which operate in a unique environment. Unique factors such as regulatory environment, culture and demographics limit the generalizability of the study results to other countries or markets. However, this limitation does not render the study findings applicable to NSE listed firms only. Some aspects would be relevant to other markets.Secondly, the researcher encountered difficulties in obtaining data from firms undergoing administration, statutory management and liquidation.

Lastly, there are few known empirical studies that have been done globally and locally on the effect of capital structure on the financial performance of NSE listed firms with firm size as a moderating variable and liquidity as an intervening variable. Most studies have only focused on the effect of capital structure on the financial performance of firms.

6.6 Recommendations of the Study

The findings have indicated that there exists a positive relationship between capital structure and financial performance of the NSE listed nonfinancial firms. The study, therefore, recommends that firm managers, other practitioners and investors should focus on the need to make the right capital structure decisions that involve increased debt levels that will help increase firm financial performance. The positive capital structure indicates that a firm is utilizing more debt than equity in its financing decisions. The implication of this is that to achieve growth and improved financial performance, firms should be highly leveraged. Firm managers should also seek to enhance asset liquidity and temporary investments to help increase liquidity in firms. Furthermore, firm managers should seek to grow their firm sizes. This is because larger firms have consistently increased the use of debt in their capital structure. Lenders often perceive

larger firms as less risky consumers of credit because of their superior collateral structure. This is in contrast to smaller entities that apparently possess inferior tangibility and therefore suffer from credit rationing. Consequently, increasing firm size will lead to an increase in firm financial performance.

Regulators, policymakers, investors, and other practitioners should emphasize the right capital structure choice and high levels of liquidity in firms to maintain, if not improve firm financial performance. The results indicate that choosing the best firm financing decisions can help firm managers take actions that are in harmony with shareholders' interest which is enhancing firm value.

6.7 Suggestions for further Research

The study used Tobin's Q in measuring financial performance. Further studies need to be conducted using return on sales (ROS), return on equity (ROE), return on assets (ROA), return on investment (ROI), sales growth, market share, or productivity. Secondly, the study population consisted of all the nonfinancial firms listed at the NSE. These firms cut across various industry sectors. Future studies could focus on specific industries such as manufacturing, financial sector, communications, agricultural or automobile industry. This is because focusing on a specific industry could yield different results that are unique for the industry.

Thirdly, the study used only one firm characteristic, firm size as a moderating variable. Future studies could employ sales growth, liquidity, growth prospects, profitability, asset growth, turnover, ownership structure, dividend pay-out and access to capital markets among others. The use of moderating variable may yield different results.

Lastly, the study employed one measure of financial performance, Tobin's Q which is a stock-based measure. Future studies should attempt as a measure of financial performance by using accounting profitability measures such as return on sales (ROS), return on equity (ROE), return on assets (ROA) and return on investment (ROI). The financial performance measures can bring a difference in the results obtained thereby enhancing robustness in the study.

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APPENDICES

APPENDIX 1: SECONDARY DATA COLLECTION SHEET

CENTRE: www.nse.co.ke

NAME OF ORGANIZATION: NAIROBI SECURITIES EXCHANGE

QUARTERLY DATA COLLECTION SHEET

QUARTERLY	DEBT	EQUITY	TOTAL ASSETS	CURRENT ASSETS	CURRENT LIABITIES	MARKET VALUE OF ASSETS	BOOK VALUE OF ASSETS

APPENDIX 2: LISTED NON FINANCIAL FIRMS ON THE NSE

CENTRE: www.nse.co.ke

NAME OF ORGANIZATION: NAIROBI SECURITIES EXCHANGE

NON FINANCIAL FIRMS LISTED ON THE NSE

	FIRM	**SECTOR**
	Kakuzi Ltd	Agriculture
	Eaagads Ltd	Agriculture
	Kapchorua Tea Company Ltd	Agriculture
	The Limuru Tea Company Ltd	Agriculture
	Rea Vipingo Plantations Ltd	Agriculture
	Sasini Ltd	Agriculture
	Williamson Tea Kenya Ltd	Agriculture
	Car and General (K) Ltd	Automobiles & Accessories
	CMC Holdings Ltd	Automobiles & Accessories
	Marshals(E.A) Ltd	Automobiles & Accessories
	Sameer Africa Ltd	Automobiles & Accessories

	Express Kenya Ltd	Commercial & Services
	Longhorn Kenya Ltd	Commercial & Services
	Nation Media Group Ltd	Commercial & Services
	Scan group Ltd	Commercial & Services
	Standard Group Ltd	Commercial & Services
	TPS Eastern Africa Ltd C	Commercial & Services
	Uchumi Supermarket Ltd	Commercial & Services
	Athi River Ltd	Construction & allied
	Bamburi Cement Ltd	Construction & allied
	Crown Paints Kenya Ltd	Construction & allied
	E.A Cables Ltd	Construction & allied
	E.A Portland Cement Company Ltd	Construction & allied
	KenGen Company Ltd	Petroleum& Energy
	KenolKobil Ltd	Petroleum& Energy
	Kenya Power and Lightning Company Ltd	Petroleum& Energy
	Total Kenya Ltd	Petroleum& Energy
	Centum Investment Company Ltd	Investments
	Olympia Capital Holdings Ltd	Investments
	Trans-Century Ltd	Investments
	Nairobi Securities Exchange	Investments
	B.O.C Kenya Ltd	Manufacturing & allied
	British American Tobacco Kenya Ltd	Manufacturing & allied
	Carbacids Investments Ltd	Manufacturing & allied
	East African Breweries Ltd	Manufacturing & allied
	Eveready East Africa Ltd	Manufacturing & allied
	Kenya Orchards	Manufacturing & allied
	Mumias Sugar Ltd	Manufacturing & allied
	Unga Group Ltd	Manufacturing & allied
	Safaricom Ltd	

APPENDIX 3: RATIO DATA FOR THE RESEARCH VARIABLES FOR THE LISTED NON FINANCIAL ON THE NSE

SOURCE: NSE DATA BASE

	YEAR	**FP**	**ASSETLQ**	**TEMPINV**	**TASSETS**	**TSALES**	**LEVERAGE**
Athi river mining	2017	0.01	0.06	0.39	1.62	2.78	0.45

	2016	0.01	0.14	0.41	1.58	2.92	0.15
	2015	0.15	0.47	0.57	1.87	2.96	0.14
	2014	0.04	0.45	0.53	1.84	2.89	0.12
	2013	0.05	0.54	0.69	1.93	2.97	0.12
	2012	0.04	0.25	0.4	1.92	2.37	0.12
	2011	0.02	0.26	0.56	0.81	2.38	0.45
	2010	0.12	0.42	0.65	0.58	2.35	0.78
Bamburi	2017	1.61	3.12	1.79	1.72	1.25	0.12
	2016	1.72	3.21	1.91	2.78	1.37	1.266
	2015	2.78	2.9	1.8	2.92	1.36	1.785
	2014	2.92	2.46	1.52	2.96	1.4	1.897
	2013	2.96	2.42	1.6	2.89	1.99	1.965
	2012	2.89	2.12	1.44	2.97	2.96	1.875
	2011	2.97	2.31	1.34	2.37	2.89	1.654
	2010	2.37	2.21	1.6	2.35	2.97	1.265
Car & General	2017	2.38	2.02	1.35	2.46	2.37	0.18
	2016	2.35	2.01	1.38	2.15	2.35	0.26
	2015	2.35	2.00	1.38	2.15	2.46	0.34
	2014	2.46	1.99	1.34	2.18	2.15	0.18
	2013	2.15	1.87	1.33	2.46	5.23	0.47
	2012	2.15	1.85	1.27	1.68	4.23	0.41
	2011	2.18	1.78	1.26	1.12	2.79	0.42
	2010	2.46	1.56	2.07	1.24	2.45	0.49
Carbacid	2017	1.68	1.42	1.11	1.78	2.62	0.52
	2016	1.57	1.35	1.06	0.99	2.36	0.47
	2015	1.69	1.32	1.01	0.87	2.55	0.19
	2014	1.48	1.35	0.93	0.78	2.32	0.21
	2013	1.57	1.12	0.7	0.79	1.99	0.23
	2012	1.42	1.32	1.03	1.25	3.23	0.41
	2011	1.46	0.05	0.4	1.37	2.32	0.09
	2010	0.57	0.00	0.3	1.36	2.13	0.09
Crown Berger	2017	1.12	0.12	0.41	1.4	2.15	0.41
	2016	1.24	1.61	1.18	1.99	1.99	0.42
	2015	1.78	1.72	1.25	2.92	1.87	0.49
	2014	0.99	2.78	1.79	2.96	1.65	0.62
	2013	0.87	2.92	1.6	2.35	3.12	0.50
East Africa Cables	2017	0.78	2.96	1.62	2.46	2.42	0.92
	2016	0.79	2.35	1.81	2.15	2.12	1.23
	2015	1.25	2.46	1.85	2.15	2.31	1.27
	2014	1.37	2.15	1.24	1.99	2.21	0.82
	2013	1.36	2.15	1.2	1.99	2.02	0.64

	2012	1.4	2.18	1.15	1.69	1.69	0.56
	2011	1.99	0.12	0.23	3.24	3.24	0.72
	2010	1.99	0.11	0.17	3.27	3.27	0.78
E.A Portland	2017	1.69	0.14	1.24	3.99	3.99	0.37
	2016	3.24	0.16	1.34	2.97	4.26	0.29
	2015	3.27	0.21	1.6	2.37	4.25	1.28
	2014	3.99	0.31	1.35	2.38	3.29	3.27
	2013	4.26	0.3	1.38	2.35	3.24	2.37
	2012	4.25	0.29	1.38	2.35	3.21	2.64
	2011	3.29	0.32	1.34	2.46	4.23	2.78
	2010	3.29	0.44	1.27	1.61	2.79	3.27
Eveready	2017	1.27	0.00	1.79	1.72	2.45	3.78
	2016	1.37	0.00	1.9	2.78	2.62	1.27
	2015	2.37	0.00	1.97	2.92	1.88	2.47
	2014	2.37	0.29	1.88	2.96	1.65	0.14
	2013	0.99	0.32	1.65	2.35	1.27	0.45
	2012	1.27	0.44	1.27	1.36	1.37	0.54
	2011	1.79	0.65	2.89	1.4	1.78	0.63
	2010	1.9	0.00	2.97	1.99	2.45	0.23
Kakuzi	2017	1.97	0.41	2.37	1.99	2.5	1.266
	2016	1.88	0.42	2.35	1.69	2.02	1.785
	2015	1.65	0.49	1.45	3.24	2.14	1.897
	2014	1.27	0.62	1.27	3.27	2.66	1.965
	2013	1.37	0.65	1.79	1.61	2.27	1.875
	2012	1.78	0.35	1.9	1.72	2.12	1.654
	2011	1.66	0.23	1.97	2.78	1.57	1.265
	2010	1.45	0.5	1.88	2.92	1.67	0.45
Kengen	2017	4.26	3.24	2.01	2.96	1.46	2.963
	2016	3.27	3.27	1.91	2.89	1.62	2.894
	2015	3.25	3.99	2.13	2.97	1.58	2.965
	2014	3.27	4.26	2.37	2.37	1.87	2.370
	2013	2.78	4.25	2.25	2.38	1.84	2.354
	2012	2.79	3.29	1.82	2.89	1.93	2.458
	2011	2.46	0.23	0.25	2.97	1.92	2.146
	2010	1.24	0.5	0.37	1.78	0.81	2.148
Kenolkobil	2017	3.24	1.79	1.02	1.56	1.01	2.178
	2016	3.21	1.9	1.07	1.27	0.84	2.457
	2015	4.23	1.97	1.11	1.79	0.87	0.58
	2014	2.79	1.88	1.06	1.9	1.27	0.85
	2013	2.45	1.65	1.07	1.97	1.79	0.54
	2012	2.62	1.27	1.03	1.79	1.9	0.32

	2011	2.36	0.89	0.84	1.9	1.97	0.14
	2010	2.55	0.69	0.45	1.97	1.88	0.96
KPLC	2017	2.32	0.61	1.29	4.23	1.25	0.78941
	2016	1.99	4.26	3.06	2.79	1.37	0.89547
	2015	3.23	3.27	2.46	2.45	1.36	0.87954
	2014	2.32	3.25	2.26	2.62	1.4	1.875
	2013	2.13	3.27	2.32	2.36	1.99	1.654
	2012	2.15	2.78	2.28	2.55	1.99	1.265
	2011	1.99	2.79	1.53	2.32	1.69	0.89
	2010	1.87	0.5	0.37	1.99	1.45	0.69
KQ	2017	1.65	1.66	0.95	3.23	3.27	0.61
	2016	0.01	1.47	0.86	2.32	3.25	0.81
	2015	0.01	1.06	0.65	3.75	3.27	0.75
	2014	0.01	0.64	0.43	3.27	2.78	0.85
	2013	0.03	0.75	0.5	3.62	2.79	0.47
	2012	0.04	0.78	0.51	3.76	2.46	0.75
	2011	0.04	0.78	0.51	3.52	1.24	0.52
	2010	0.02	0.5	0.37	3.04	2.23	0.69
Safaricom	2017	5.15	3.24	3.75	2.87	2.78	4.255
	2016	4.13	3.27	3.27	1.2	2.79	3.265
	2015	5.62	3.99	3.62	1.9	2.46	3.247
	2014	4.23	4.26	3.76	1.97	1.24	3.268
	2013	4.79	4.25	3.52	1.00	3.24	2.778
	2012	3.99	3.29	3.04	1.00	1.45	2.785
	2011	3.85	3.29	2.87	0.91	1.32	2.456
	2010	3.55	2.12	1.2	0.91	1.21	2.1245
Sameer	2017	0.00	0.99	0.56	2.06	1.32	2.0124
	2016	0.12	1.27	0.76	2.06	1.45	2.0745
	2015	0.01	1.79	1.02	2.41	1.56	2.0451
	2014	0.02	1.9	1.12	2.54	1.27	2.0124
	2013	0.24	1.97	1.11	2.53	1.79	0.54
	2012	0.2	1.88	1.33	1.68	1.9	0.45
	2012	0.04	0.78	0.66	2.04	1.97	0.56
	2011	0.04	0.23	0.24	1.28	1.88	0.36
	2010	0.02	0.00	0.14	3.27	2.78	0.26
Sasini	2017	1.23	1.57	0.92	2.37	2.79	0.45
	2016	1.37	1.69	0.97	2.64	2.46	0.71
	2015	1.33	1.48	1.13	2.78	1.24	0.82
	2014	1.33	1.57	1.06	3.27	3.24	0.96
	2013	1.98	1.42	1.1	3.78	1.98	0.87
	2012	1.66	1.46	0.91	0.27	1.85	0.278

	2011	1.55	0.57	0.41	1.27	1.77	0.36
	2010	2.35	0.07	0.17	1.49	3.12	0.72
Standard Group	2017	0.56	1.36	1.66	1.41	1.23	1.266
	2016	1.24	0.99	1.43	1.34	1.37	1.785
	2015	0.99	0.99	1.32	1.03	1.33	1.897
	2014	1.57	0.85	1.06	0.89	1.33	1.965
	2013	1.66	0.8	1.08	0.84	1.98	1.875
	2012	1.88	0.79	1.28	0.81	1.23	0.78
	2011	1.99	0.75	1.76	0.45	1.37	0.6478
	2010	2.99	1.23	2.08	0.84	1.33	0.654
Total Kenya	2017	1.66	1.37	2.16	0.83	1.33	1.784
	2016	1.78	1.33	2.11	3.21	1.98	1.564
	2015	1.56	1.33	2.15	2.9	3.27	1.454
	2014	1.45	1.98	2.18	2.46	2.37	2.365
	2013	2.37	1.66	2.02	2.42	2.64	2.451
	2012	2.45	1.27	1.53	2.12	2.78	2.451
	2011	2.45	1.79	1.33	2.31	3.27	2.1231
	2010	2.66	1.9	1.38	2.21	3.78	2.124
TransCentury	2017	1.25	0.78	0.67	3.24	3.75	0.01
	2016	1.32	0.55	0.59	3.27	3.27	0.014
	2015	1.32	0.78	0.66	3.99	3.62	0.12
	2014	2.01	0.37	0.35	4.26	3.76	0.014
	2013	1.99	0.25	0.29	4.25	3.52	0.0147
	2012	1.24	0.87	0.65	3.29	3.04	0.478
	2011	0.99	0.92	0.72	3.29	2.87	0.24782
	2010	0.88	0.22	0.23	0.61	2.07	0.178
Uchumi	2017	0.02	0.01	0.01	3.27	2.14	0.12
	2016	0.02	0.01	0.18	3.25	2.18	2.0167
	2015	0.02	0	0.12	3.27	2.44	1.52519
	2014	0.08	0.03	0.14	2.78	1.86	1.3295
	2013	0.09	0.15	0.2	2.79	2.37	1.381225
	2012	0.03	0.06	0.17	2.46	2.45	0.67355
	2011	0.06	0.21	0.5	1.24	2.45	0.59167
	2010	0.06	0.06	0.15	3.24	2.66	0.23
Unga Group	2017	0.00	0.68	1.12	3.21	2.12	0.321
	2016	0.06	0.67	1.06	2.21	2.34	0.32
	2015	0.07	0.65	1.51	2.02	2.13	0.01
	2014	0.06	0.64	1.55	2.01	2.12	0.12
	2012	0.92	0.62	1.54	2.00	2.00	0.21
	2011	0.85	0.57	1.61	1.99	2.45	0.16
	2010	0.1	0.45	0.6	0.07	2.21	0.14

	2013	0.04	0.45	0.35	0.07	2.43	0.32
Nation Media	2017	0.99	0.51	1.15	0.98	1.90	2.451
	2016	0.88	1.66	1.61	0.97	1.97	2.655
	2015	0.88	1.88	1.66	0.95	1.88	1.245
	2014	0.7	1.99	2.18	0.97	1.65	1.321
	2013	0.79	2.99	2.72	1.36	1.27	1.321
	2012	0.79	1.66	2.05	1.55	1.86	2.014
	2011	0.88	1.78	1.84	1.32	2.37	2.1245
	2010	0.87	1.55	1.66	1.32	2.45	2.014
BOC Kenya	2017	0.68	1.45	1.65	1.37	2.45	0.875
	2016	0.57	0	0.92	0.87	2.66	0.875
	2015	0.57	0	0.84	4.79	0.92	0.699
	2014	0.66	0	0.78	3.99	0.9	0.785
	2013	0.37	0.32	0.89	3.85	0.12	0.785
	2012	0.57	0.21	0.52	3.55	0.88	0.364
	2011	0.66	0.02	0.44	2.46	0.87	0.871
	2010	0.56	0.01	0.44	2.35	0.68	0.365
EABL	2017	4.45	3.27	3.26	2.35	3.27	4.231
	2016	5.12	3.25	3.26	0.99	3.99	4.790
	2015	4.12	3.27	3.02	0.87	4.26	3.987
	2014	3.9	2.78	2.78	0.82	4.25	3.854
	2013	3.66	2.79	2.62	0.8	3.29	3.545
	2012	3.56	2.46	1.85	0.78	3.29	2.4578
	2011	3.45	1.56	1.51	0.77	2.68	2.35461
	2010	3.32	1.68	1.62	0.75	2.46	2.34512
Eaagads Ltd	2017	0.99	1.65	1.55	2.78	0.79	0.987845
	2016	0.97	1.56	1.48	2.79	0.88	0.97845
	2015	0.87	1.42	1.33	2.46	0.87	0.86545
	2014	0.85	1.23	1.43	1.56	0.68	0.82102
Williamson Tea	2017	0.83	1.21	2.46	1.68	0.57	0.21
	2016	0.65	0.02	2.35	1.65	3.27	0.21
	2015	0.52	0.02	2.35	1.56	3.25	0.36
	2014	0.46	0.03	0.99	0.25	3.27	0.21
	2013	0.48	0.07	1.32	0.24	2.78	0.89
	2012	0.78	0.24	1.63	1.48	2.79	0.78
	2011	0.65	0.78	1.36	1.25	2.46	0.25
	2010	0.56	0.03	1.55	1.63	2.12	0.332
Kapchorua Tea	2017	0.63	0.7	1.32	1.54	2.01	0.63
	2016	0.54	0.79	0.83	1.55	2.07	0.32
	2015	0.46	0.79	0.62	1.32	2.05	0.52
	2014	0.46	0.88	0.62	1.32	2.01	0.278

	2013	0.57	0.87	0.59	1.37	2.37	0.62
	2012	0.63	0.68	0.46	0.87	2.38	0.54
	2011	0.32	1.48	0.86	1.22	2.35	0.32
	2010	0.35	1.25	0.75	1.24	2.35	0.36
Limuru Tea	2017	0.75	1.63	0.93	1.13	2.46	0.25
	2016	1.21	1.54	0.88	1.32	2.15	0.25
	2015	1.22	1.54	0.88	1.63	2.15	0.32
	2014	1.24	1.63	0.93	1.36	2.18	0.24
	2013	1.13	1.45	1.12	1.55	2.46	0.87
	2012	0.56	1.32	1.11	1.32	0.9	0.63
	2011	0.54	1.63	1.26	1.32	2.35	0.45
	2010	0.52	1.36	0.79	1.37	2.35	0.56
Marshalls	2016	0.62	1.55	0.89	1.25	2.46	0.75
	2015	0.54	1.32	0.77	1.23	2.15	0.96
	2014	0.45	1.32	0.77	1.25	2.15	0.36
	2013	0.45	1.37	1.19	1.23	3.06	0.23
	2012	0.45	0.87	0.87	1.24	2.46	0.87
	2011	0.62	0.36	0.57	1.24	2.26	0.87
	2010	0.56	0.04	0.41	1.36	2.32	1.66
Express	2017	1.46	1.02	0.84	1.01	2.28	1.78
	2016	1.23	0.72	0.54	1.21	1.53	1.56
	2015	1.25	0.51	0.54	2.35	3.06	1.45
	2014	1.23	0.49	0.57	2.12	2.46	2.37
	2013	1.25	0.52	0.54	1.24	2.26	0.56
	2012	1.23	0.41	0.64	1.25	2.32	0.65
	2011	1.24	0.39	0.69	1.28	2.28	0.63
	2010	1.24	0.2	0.58	3.27	1.53	0.014
TPS	2017	1.36	0.3	2.46	2.37	2.72	0.12
	2016	0.99	0.25	2.32	2.64	2.05	0.12
	2015	0.99	0.17	2.37	2.78	1.84	0.39
	2014	0.85	0.07	1.99	3.27	1.66	1.01
	2013	0.8	0.97	3.21	3.78	1.65	1.21
	2012	0.79	0.87	3.22	1.27	0.99	2.34
	2011	0.75	0.95	0.9	3.75	0.36	2.12
	2010	0.73	0.08	0.42	3.27	0.03	1.24
Scan Group	2017	0.04	0	0.42	3.62	1.23	1.25
	2016	0.03	0	0.11	3.76	1.25	3.62
	2015	0.02	0.02	0.49	3.52	1.23	1.27
	2014	0.04	0.03	0.5	3.04	1.24	0.12
	2013	0.97	0.31	0.59	1.43	1.24	0.45
	2012	0.23	0.23	1.66	1.05	1.36	0.25

	2011	0.12	0.97	1.88	1.11	1.36	0.34
	2010	0.06	0.04	1.99	1.08	1.55	1.25
Business Venture	2017	0.01	0.59	2.99	1.08	1.32	0.85
	2016	0.03	0.57	1.66	1.38	1.32	0.82
	2015	0.03	0.35	1.78	1.01	1.37	0.04
	2014	0.1	0.6	1.56	0.93	0.87	0.06
	2013	0.95	0.99	1.45	0.7	3.23	0.87
	2012	0.78	0.74	0.49	2.37	3.22	0.14
	2011	0.45	0.78	0.51	2.38	2.9	0.79
	2010	0.03	0.56	0.58	2.35	2.79	0.04
Jubilee	2017	3.23	1.21	0.95	2.35	2.46	1.66
	2016	3.22	1.22	0.9	2.46	2.32	1.875
	2015	2.9	1.24	1.01	2.15	2.37	1.987
	2014	2.79	1.13	0.94	1.23	1.99	2.98
	2013	2.46	1.23	0.84	1.24	3.21	1.66
	2012	2.32	1.24	1.05	1.24	3.22	1.78
	2011	2.37	1.24	1.11	1.36	0.78	1.56
	2010	1.99	1.36	0.86	0.99	2.9	1.45
Pan Africa	2017	3.21	0.99	0.99	0.99	2.79	0.44
	2016	3.22	0.99	0.61	1.6	2.46	0.30
	2015	2.99	0.85	0.49	1.35	2.32	0.25
	2014	2.9	0.8	0.58	1.38	2.46	0.17
	2013	2.85	1.46	1.17	1.38	2.32	0.25
	2012	2.78	1.23	1.04	1.34	2.37	0.78
	2011	2.68	1.25	0.73	0.41	1.99	0.64
	2010	2.65	1.23	0.73	0.4	3.21	0.07
Karwitu	2017	0.25	0.45	0.3	2.32	3.22	0.10
	2016	0.37	0	0.12	2.37	2.99	0.25
Kenya Re	2017	1.99	0.85	0.82	1.99	0.09	2.355
	2016	1.97	0.8	0.67	3.21	0.07	2.546
	2015	1.56	0.79	0.53	3.22	0.07	2.315
	2014	1.45	0.75	0.61	2.99	0.11	1.987
	2013	1.63	0.73	2.36	0.85	0.99	3.231
	2012	1.45	0.04	2.55	0.84	0.98	2.315
	2011	1.45	0.78	2.32	0.84	0.78	2.125
	2010	1.32	0	1.99	2.36	0.00	2.147
Liberty	2017	2.32	0	3.23	2.55	0.06	1.987
	2016	2.32	0	2.32	2.32	0.71	1.452
	2015	2.01	0	2.13	1.99	0.08	1.632
	2014	2	0	0.12	3.23	0.12	1.451
	2013	1.99	0.05	0.31	0.61	0.36	1.451

	2012	1.99	0.78	0.83	0.53	0.99	1.321
	2011	1.85	0.78	0.87	0.53	0.78	2.315
	2010	1.75	0	0.14	0.52	3.23	2.785
Britam	2017	3.26	0.26	1.12	0.98	3.22	2.458
	2016	2.46	0.34	1.15	0.92	2.9	2.315
	2015	2.13	0.28	0.92	0.9	2.79	2.365
	2014	1.99	0.23	0.84	0.9	2.46	1.987
	2013	1.85	0.79	1.21	0.9	2.32	3.213
	2012	1.24	0.99	1.22	0.9	2.37	3.217
	2011	0.98	0.15	0.8	0.82	1.99	0.965
	2010	0.88	0.06	0.76	0.78	3.21	0.63
CIC	2017	2.32	0.1	1.28	0.88	3.22	1.984
	2016	2.21	0.95	1.63	0.85	3.27	1.655
	2015	2.1	0.78	1.57	0.83	3.99	1.548
	2014	1.99	0.45	1.22	0.82	4.26	2.354
	2013	1.88	0.65	1.93	0.81	4.25	0.564
	2012	1.66	0.85	2.03	0.08	3.29	0.87
	2011	1.45	0.87	1.93	0.8	3.29	0.44
	2010	1.62	0	1.44	1.98	1.97	0.45
Olympia	2017	0.03	0.05	1.4	1.66	1.56	0.62
	2016	0.01	0.04	0.04	1.55	1.45	0.61
	2015	0.02	0.06	0.04	2.35	1.63	0.47
	2014	0.07	0.07	0.05	1.6	1.45	0.35
	2013	0.02	0.79	0.51	1.35	1.45	0.45
	2012	0.07	0.56	0.7	1.38	1.32	0.63
	2011	0.02	0.74	0.55	1.38	3.23	0.56
	2010	0	0.08	0.16	1.34	3.22	0.96
Centum	2017	1.97	1.85	1.05	0.85	2.13	0.35
	2016	1.85	1.75	0.99	0.83	1.99	0.74
	2015	1.85	3.26	1.81	0.83	1.85	0.68
	2014	1.79	2.46	1.43	0.82	1.24	0.69
	2013	1.76	2.13	1.55	0.81	0.98	0.9654
	2012	1.53	1.99	1.48	1.98	0.88	0.8451
	2011	1.24	1.87	1.33	1.66	0.81	0.9645
	2010	0.99	1.78	1.01	1.55	1.97	0.04
Home Africa	2017	1.85	1.78	1.57	2.35	1.85	0.06
	2016	1.27	1.65	1.32	0.56	1.85	0.07
	2015	1.46	1.54	1.26	1.85	1.79	0.08
	2014	1.37	0.99	0.92	1.27	1.76	0.30
	2014	1.24	0.87	0.84	1.46	1.53	0.78
	2013	1.37	0.85	0.82	1.37	2.46	0.85

	2012	1.24	0.89	0.82	1.24	2.13	0.89
	2011	1.45	0.56	0.67	1.37	1.99	0.65
	2010	1.25	0.26	0.25	1.24	1.87	0.26
	2017	0.99	0.52	0.4	1.45	1.78	0.23
	2016	0.65	0.4	0.57	1.25	1.78	0.35
NSE	2017	0.1	0	0.28	0.99	1.65	0.070
	2016	0.09	0	0.3	0.87	2.18	0.070
	2015	0.16	0	0.35	0.78	2.46	0.110
	2014	0.19	0	0.29	0.75	1.88	0.000
	2013	0.45	0.07	0.43	0.73	1.65	0.564
BAT	2017	0.19	0.78	0.53	0.68	2.07	0.050
	2016	0.26	0.55	1.37	2.18	1.97	0.090
	2015	0.27	0.27	1.24	2.46	1.56	0.100
	2014	0.23	0.48	1.45	1.88	1.45	0.180
	2013	0.01	0.78	1.25	1.65	1.63	0.781
	2012	0.25	0.56	0.99	2.07	1.45	0.451
	2011	0.12	0.52	0.44	1.11	1.45	0.231
	2010	0.22	0.54	0.39	0.14	1.32	0.020
MUMIAS	2017	0.06	0.89	0.56	0.96	3.23	0.090
	2016	0.06	0.48	0.36	0.79	3.22	0.160
	2015	0.01	0.11	0.18	0.9	1.97	0.190
	2014	0.01	0.04	0.13	0.88	1.85	0.230
	2013	0.01	0	0.21	1.88	1.85	0.892
	2012	0.01	0.63	0.81	0.06	1.79	0.451
	2011	0.01	0.65	0.72	0.23	1.76	0.362
	2010	0.01	0.18	0.2	0.06	2.97	0.190
Longhorn Publishers Limited	2017	0.06	1.79	1.00	1.61	2.37	0.260
	2016	0.05	1.76	1.00	1.72	2.35	0.78
	2015	0.09	1.53	0.89	2.78	2.46	0.98
	2014	0.13	1.24	0.78	2.92	2.15	0.96
	2013	0.01	0.99	0.65	2.96	2.15	0.78
	2012	0.01	0.99	0.93	2.89	2.18	0.96
	2011	0.45	0.87	0.81	2.97	2.46	0.56
	2010	0.17	0.87	0.78	2.37	1.61	0.87
Deacons (East Africa) PLC	2017	0.01	0.75	0.98	2.38	1.66	0.45
	2016	0.01	0.19	0.96	0.04	2.18	0.56
	2015	0.01	0.45	0.78	0.04	2.72	0.58
	2014	0.04	0.21	0.96	0.04	2.05	0.160