

**EFFECT OF DEBT FINANCING ON FINANCIAL DISTRESS OF FIRMS LISTED  
AT THE NAIROBI SECURITIES EXCHANGE**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF  
BUSINESS ADMINISTRATION IN FINANCE, SCHOOL OF BUSINESS,  
UNIVERSITY OF NAIROBI**

**DECEMBER 2018**

## DECLARATION

This research project is my original work and has not been submitted for examination in any other university.

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

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## **ACKNOWLEDGEMENT**

I am indebted to God the All-Powerful, my Fortress and Pillar of Strength forever.

To my family, particularly to my husband Apollo and children Keren, Martha, Abigail and Ephraim for your patience, fervent prayers and support during my absence period during the study period. Your warmth and love kept me going and revived my passion to stay in course even when I was in doubt.

Many thanks to my Supervisor Dr. Winnie Nyamute. Thank you for your relentless efforts and insightful guidance to complete this project successfully. Your humility, selflessness, passion, patience, and ultimate dedication touched me deeply. I also wish to sincerely thank all department staff both teaching and non-teaching staff for the continuous hard work.

## **DEDICATION**

This project is dedicated to my parents; Mr. Christopher S. Chepkurui and Mrs. Beatrice C. Chepkurui for the foundation they gave me and all the support they have continued to give even in my adult life.

## **ABBREVIATION AND ACRONYMS**

ANOVA	-	Analysis of Variance
CMA	-	Capital Markets Authority
EBITDA	-	Earning Before Interest Tax Depreciation and Amortization
GRC	-	Government Related Companies
IRA	-	Insurance Regulatory Authority
NSE	-	Nairobi Securities exchange
SMEs	-	Small and Medium Enterprises

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## ABSTRACT

Managers in every firm are faced with challenges making decisions on three important aspects of the organizations. The first decision that should be considered by the management is the financing decision, then the investing decision and finally the operating decision. These decisions enable a company to achieve an optimal position in maximizing the shareholder's wealth. It therefore becomes imperative for an organization to have an optimal structure of capital that determines the level of debt financing that would propel it closer to its goals. The realization that capital structure decisions influence the value of a firm, sensitizes the management to try achieve the optimal capital structure that exploits the value of the shares of the company. However, the attainment of this objective exposes most firms to financial distress which arises as a result of debt financing beyond a certain capacity that makes it difficult for the company to achieve its short term and long-term duties as and when they fall due. This study therefore focused on determining the effect of debt financing on financial distress for listed firms at the Nairobi Securities Exchange in Kenya. The study involved the use of descriptive research design as the research methodology, where secondary data collection methods were employed to obtain data from audited published financial statements of these firms for the period 2013 to 2017. A response rate of 24 companies out of 37 non - financial firms listed at NSE had full information for all the six independent variables that were made up of liquidity ratio, leverage, productivity ratio, solvency ratio, Asset utilization ratio and firm size, which represented a 64% response rate. Financial distress for the firms was obtained by Altman's Z score which suggests that a score of below 1.8 shows that the firm would be distressed. A score of 3 shows high chances of distress for the company while above 3 is considered to be a stable firm. The mean score for all the firms was 12.95 that showed that in average the firms listed at NSE were stable. However, several firms were below the threshold requirement of the score at 1.2 and thereabouts. The multiple linear regression model that was employed showed a coefficient of determination (R squared) value of 58.7% that suggested that the model was able to predict the dependent variable (Financial distress) to the level of 58.7%. The F statistic from ANOVA table was above the F critical value that led to rejection of the null hypothesis. The alpha value of 0.000 was less than 0.05 and the study therefore concluded that there was negative significant effect of debt financing to financial distress for these firms. The financial leverage had a negative correlation to financial distress, while liquidity, productivity, solvency and asset utilization had positive correlation towards financial distress.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

The determination of an optimal capital composition for a company is among the three resolutions, alongside and dividend policy investment, which takes most of the day-to-day financial managers' duties with an intention of capitalizing on company's worth (Karadeniz, Kandir, Balcilar & Onal, 2012). The determination of what level of debt that a firm should use to finance its operations is a key decision for managers since sub-optimal financing mix has been established to influence the value of a firm and to the extreme lead to the collapse of a firm. Hu, (2011) highlight that a firm's source of debt financing comprise of both unsecured and secured loans and requires offering collateral to the lender as a guarantee that the loan will be paid back. On condition that the debtor fails to pay back the loan, the consequence will affect the collateral which will be termed as forfeited to meet the requirements of debt payment. Debt financing can comprise of long-term debt and short term debt, with short-term debt having maturity tenure of one year or less, while long-term debt is a responsibility that has a maturity span of not less than one year for example bonds (Scherr & Hulburt, 2011). It is possible that when a firm uses a high proportion debt, both short and long-term, it might have challenges in repaying the interest and principal when they fall due. This leads to a financial distress condition.

This study was anchored on the Agency theory, Wreckers theory of Financial Distress, and the normative theory of bankruptcy. Campbell, Hilscher and Szilagi (2005) advanced the Wreckers theory of financial distress in which it suggest that the stocks of distressed companies perform in a way that is widely sub standardized to stocks of firms that are

financially healthy. Similarly, the theory argues that for firms that are financially distressed, profitability of non-cash to the ownership may be regarded as the best outline of payout and that if the market is effective, the payout of profitability will be seen in stock appraisal, implying that shareholders and lenders will tend to generate good returns from the (wreck) collapsing firm. Normative theory of financial distress also referred to as modern theory of bankruptcy was advanced by Alder (2002) and attempts to relate the outcomes of a bankruptcy process to prior phases in the life of a company that borrows. The theory argues that an efficient bankruptcy system would realise a high payoffs compared to what creditors will receive from insolvent firms. Further, Agency theory was progressed by Jensen and Mechkling (1976) is concerned with the relationship between two parties who engage and cooperate in a way that one party (the principal) assigns work and/or decisions to another (an agent) to conduct business on behalf of the principal.

Major financial scandals in both the developed and developing world that have lead to the collapse of large corporations have been attributed to imbalanced financing of the firms. Gill, Biger, Mand and Mathur (2013) opine that the collapse of major organizations in USA ( Enron, World Com and Commerce Bank) have taken aback the faith of investors in capital markets and the effectiveness of active financing structure of the firms that led to the collapse of the organizations. On the subject of the relationship between financial distress and debt financing, Zeitun and Tian (2014) in a study in US report that having a high level of debt is more possible to be related with bankruptcy of a firm. Correspondingly, Dalton and Daily (2004) substantiate the positive relationship between high leverage and the possibility of bankruptcy as measured by debt ratio. In China, Lee and Yeh (2004) expand the literature by availing proof that firms' high leverage enhances the risk of wealth expropriation and, as a result, diminish the value of a firm. Therefore, the view of failure to pay is highly expected.

In Kenya, the fall of major retail chain supermarkets, such as Nakumatt and the instability of Uchumi supermarkets can be attributed to a lack of a proper capital structure mix which affects the operations of the firms, both in the short and long term.

### **1.1.1 Debt Financing**

According to Tirole (2010), debt financing takes many forms and has received varied definition. Nirajini and Priya (2013) define debt financing as the manner in which a company is financed through the two ways of short term and long term capital. Konchhar (1997) as cited in Muratila (2018) consider the debt financing of a firm as the mix or combination of its long and short term sources of financing existing for continuous business operation and is the main factor that determines the way business is conducted. According to Brigham & Houston (2011) debt financing represents the ratio of external financing as a fraction of the firm's assets.

After the establishment of a new corporation, the main source of external capital financing is the debt financing. The effect of debt financing has both benefits and challenges on development of a company as well as its investment strategies (O'Brien & David, 2010). In accordance with Fama and French (2002), the advantages that is brought about by debt financing comprise of deductibility of tax due and the minimization of problems arising from flow of free cash, whereas the expenses of debt financing involves expected bankruptcy costs and conflicts of agency between debt holders and stockholders. Thus, in making decisions regarding debt financing, the management seek to establish stability between the advantages of corporate tax of debt financing and the expenditure on financial distress arising from costs of risks associated with agency and bankruptcy (Jensen &Meckling, 1976).

Different measures of debt financing have been suggested advanced by different scholars. The common measures of debt financing in a firm is the ratio of debt-to-equity and debt-to-asset. The debt to assets ratio estimates the percentage of cash given by creditors (Houston & Brigham, 2011). It can as well be referred to as the percentage of all the resources that are financed courtesy of debt (Fraser &Ormiston, 2008). The debt to equity ratio estimates the degree of riskiness of the company's capital scheme in regard to the association between the funds distributed by creditors as compared to the internally generated funding.

### **1.1.2 Financial Distress**

Financial distress in companies for a long term has raised concerns to the public investors and the government. Keasey, Pindado and Rodrigues, (2015) define financial distress as the condition in which the liquidation status of a firm on total assets is exceeded by the total value claimed by a creditor. In the event that the liquidation state has prolonged, the company may be exposed to the risk of being declared bankrupt. Similarly, Martínez-Solano Baños-Caballero, and García-Teruel (2014) referred financial distress as the possibility of declaration of bankruptcy, which is reliant upon the accessibility of credit and liquidity. More so, Kaplan and Andrade (1998) suggest that financial distress is the initial year that the EBI of a company, tax depreciation and amortization (EBITDA) is lower than financial costs. Adeyemi and Aremu (2011) proposed that financial distress is a situation in which a firm is encountered with challenges concerning investing, financing and operating, to the level that it is not in a position to pay back its due cost of expenses. Therefore, it is important to note that if a company is able to identify the chances of being in the position of falling into financial distress, it needs to strategically respond with immediate effect by setting up counteractive measures to facilitate effectiveness and control costs.

A state of financial distress is a huge setback to a firm because it pressures to indulge in things that will adversely affect the nonfinancial stakeholders and debt holder, an act that will impair accessibility of credit services and hike the expenses of stakeholder associations. In addition, financial distress will weaken the financial status of a company enabling competitors to benefit from the market share left as a result of withdrawal of a bankrupt organization from the market (Opler & Titamn, 2015). In respect to the management team of an organization, they are exposed to risks of being fired, face reduction of bonuses and reported negative reputation against them if their respective organizations are in danger of being in financial distress. Pandey (2010) postulates that when an entity is in a state of financial distress, principle suppliers become less forbearing and may restrict or suspend their suppliers for fear of losing their funds should the entity be liquidated. Financiers or investors in the other hand shy away from providing the all required capital injection to the entity or provide the funds at stringent terms making the already troubled entity unable to turnaround.

Different measures of financial distress have been suggested and applied. Merton (1974) suggest distances-to-default metrics measure of a firm with a shorter distance to default indicating that a firm is close to be declared default; while escalating distances-to-default indicating that the probability of defaulting is very low. A firm is said to be recovering if it is, at some point, moving closer to default and away from it after some time. The measures of financial distress can be categorized as either market based or financial accounting based. The popular accounting based models include the Altman's Z-score (1969) or the Ohlson O-score. However, Balcaen and Ooghe (2004) warn against relying solely on financial ratios because it will absolutely believe that all significant success or failure indicators – both external and internal– are shown in the yearly accounts. It has further been proved that financial information lacks all required details that show a distressed firm and therefore other

measures such as market variables is likely to complement this deficiency. Agarwal and Taffler (2008) assert that market-based variables is more appealing to measuring a firm distress level because market prices replicate the details enclosed in statement of accounts together with other relevant information that are not available in the financial statements, a combination that is expectedly relevant for the forecast of default in the company. This research will adopt Altman Z-Score financial distress. Altman Z-Score uses measures of liquidity, leverage, productivity/ performance of the company, solvency, a ability of the firm to generate sales. The control variable will be the firm size.

### **1.1.3 Debt Financing and Financial Distress**

The major component of external financing as evident in many firms is debt financing which enhances the initial capital of corporations (Baltac & Ayaydin, 2014). However, debt financing is associated with benefits as well as setbacks towards the growth and development of companies and also to its investment strategy (O'Brien and David, 2010). In relation to the sentiments cited by French and Fama (2002), debt financing bring about benefits comprising of reduced taxation rate on interest and minimized riskiness of cash flow, while on the other hand, the challenges as a result of adoption of debt financing include expected conflicts between debt holders and stock holders and the cost of undergoing bankruptcy. Consequently, in debt financing decisions making process, the executive ought to establish a balance between the expenses of financial distress resulting from risks of bankruptcy and the benefits of corporate tax of debt financing.

The use of debt by a firm has also disadvantage in the sense that excessive borrowing will lead to a firm inability to pay the principal and the interest when it falls due. Verifiable evidence suggest that when leverage level increases the firm start experiencing challenges (financial distress) and if the trend continues, the firm will eventually should lead to a decline

in agency costs of ownership and debt holders and this will therefore lead to an improvement in business performance, everything else remained the same as before. Baños-Caballero et al (2014) assert that when the debt level is high the cost of debt will likewise increase, involving an increase in financial distress or bankruptcy cost as a result of disagreements between bondholders and equity holders. Pandey (2010) posits that under a high debt condition, a firm is highly leveraged and possess high risk financial crisis and are prone to indulge in business that incorporates capital-intensive app financial distress such that are likely to result in the firm having challenges to repay the debt especially if the debt comes with high cost of repayment.

#### **1.1.4 Firms Listed at the Nairobi Securities Exchange**

The Nairobi Securities exchange (NSE) was founded in 1954 and acts as the primary and secondary market for initial public offerings and trading of securities. Currently, it is the only market in Kenya where securities are traded. Since its formation, NSE has grown over the period with key milestones being introduction of investment banks that currently stand at 21 in number, increased number of stock brokers (8), custodian banks and increase in the number of firms listed at NSE from 23 to the current 66 firms though 4 firms trading has been suspended. The Capital Markets Authority (CMA) is the regulating agency of government mandated with the role of regulating and licensing the capital markets in Kenya. CMA is also charged with complimenting public listings and suggestions on securities traded at the NSE.

The NSE is grouped into 12 sectors namely; energy and petroleum, insurance, investment, agricultural, manufacturing and allied, construction and allied, automobile and accessories, banking, telecommunication and technology, commercial and services, investment services, and finally the growth venture market sector (Nairobi Securities Exchange, 2015). According to Anyanzwa (2015), until date, it is still indecisive whether to encourage equity or debt

financing as sources of capital to companies however, a group of investment and financial analysts have opined that debt can be more beneficial if it is acquired at the right market rates and also if it is strategically spent. To be able to carry out the study companies that are as comparable as possible within the same industry were investigated. The research will therefore investigate all listed companies in the NSE with the exception of financial institutions such as banks because they are considered highly regulated and their leverage levels are heavily influenced by regulation.

According to the NSE (2017) report, the performance of the firms in the last five years has been mixed

## **1.2 Research Problem**

Firms that are listed in NSE accrue more debt as a result of looking for more financing sources in terms of debt finance to enhance their capital base in order to implement strategic developments and finance business operations (Nairobi Securities Exchange, 2015). According to Kenya CMA report, a lump sum of \$988 million was contributed through rights given by companies that are listed in the NSE from 2004 to 2014 (Anyanzwa, 2015). A number of organizations listed at the NSE such as Uchumi Supermarkets Limited, Nakumatt supermarkets limited, Kenya Airways, Mumias Sugar Limited, and Express Kenya Limited etc. have gone through cycles of financial distress in the recent past arising from a myriad of factors. A research project on the effect of debt financing on financial distress, therefore, presents a pool of knowledge that will allow listed companies to realize their financial status and tell whether they fall under financial distress and if they discover that, the next step to take is to identify the extent at which their values are influenced and look for ways to remedy the state of affairs.

Further, this study presents a perfect opportunity for assessing how firms operating in highly turbulent and competitive environment as well as with inherent operational risks may be affected by financial distress.

The quest to understand the causes of financial distress, especially debt financing in firms, has attracted a lot of research regionally and at the international field. Koh, Durand, Dai and Chang (2015) investigated financial distress: corporate restructuring and Lifecycle measures among Australian firms and discovered that companies at their infant stages of development have the probability of reducing the volume of their workforce whereas established firms tend to involve in restructuring of assets. Tinoco and Wilson (2013) conducted a study to investigate bankruptcy and financial distress forecast among listed firms with the use of macroeconomic, accounting and market variables. The findings presents the utility function of combining macro-economic, accounting and market information in prediction frameworks of financial distress for listed firms. Khaliq et al (2014) ought to establish the frequency of financial distress among the government related companies (GRC) in Malaysia's. The study outcomes implied that there is existence of significant connection between debt ratio and Liquidity; and Z – Scores that verify GRC financial distress.

Maina and Sakwa (2017) seek to establish existence of financial distress among firms listed in NSE. They found out that financial stability of companies listed in NSE calls for improvement. Furthermore, they discovered a disjoint in correlating between potential advantages of listed firms and in regard to financial performance and accrued benefits that they will get from CMA supervision. Baimwera and Muriuki (2014) did an analysis to establish the determinants of company financial distress among the non-financial corporations that are listed in NSE. The discoveries from the study proposed that liquidity and leverage had no considerable impact on the determinants of financial distress of

corporations unlike profitability and growth that had a significant positive effect. Similarly, the model of Altman Z score (a multivariate technique) was discovered as a relevant model for predicting financial distress. Kariuki (2013), ought to examine the effect of financial distress on Kenyan commercial banks' financial performance in. In his study, he discovered that various commercial banks were undergoing financial distress. The degree and vulnerability of financial distress among the listed banks was found to be lesser compared to that of non-listed banks. Shisia, Sand and Okibo(2014) carried out a study to analyse the Altman's model of failure prediction on company financial distress within Kenya's Uchumi supermarket. The findings of the study discovered that definitely the Altman Z-Score prediction model predicted significantly the likelihood of financial distress among companies.

It can be seen from the above studies that the findings from various research on the connection between debt financing and company's financial distress has attracted the attention of scholars across the globe. In Kenya, for example, the studies have concentrated on investigating all the firms listed at the NSE or a particular firm without particularly zeroing in on particular sector in the bourse. Similarly, few studies have evaluated on the effect of debt financing on a firms financial distress level as well as the inclination of most studies preferring to use the Altman Z-score as the measure of financial distress unlike this current research that will use different methodology to measure financial distress. Consequently, this research attempted to provide answers to the following study question; what is the effect of debt financing on financial distress of companies listed in the NSE?

### **1.3 Research Objective**

To establish the impact of debt financing on financial distress of firms listed in the Nairobi Securities Exchange

#### **1.4 Value of the Study**

This is a study aimed at contributing to the existing body of knowledge on the topic of debt financing. This study aims to put into action a religious perception on the entire topic maximum debt financing and financial distress and to contribute uniquely to the literature of related articles by making comparisons on the best combinations of different mechanisms of funding employed by companies in Kenya and to establish the best business practices. Therefore this study may present a pool of detailed information to organizations and strategic decision makers that are engaged in enhancing investment practices for example CMA in Kenya to help in harnessing and analyzing financial resources that are important to business and create policies that promote investment projects in developing countries.

This study may bring benefits to the management team of companies in terms of information that may positively influence the process of decision making and also provide a guide that can be emulated in maximizing the performance and value of firms and as a result maximizing the contribution of shareholders' wealth. The study findings may similarly provide information to entrepreneurs, organizations and consultants with the necessary instruments on how to strategically plan for measures of financing the businesses activities and make informed investment decisions.

The Government of Kenya may find a beneficial effect of this study by understanding how debt financing impacts on the financial distress and value of firms listed at the NSE and is better placed to formulate and implement policies that not only safeguard companies' liquidity but also improve their financial performance.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter discusses other research work on debt financing and its effect on the financial distress of firms. The main sections covered in this chapter include; theoretical framework, determinants of financial distress, review of empirical literatures, literature review and conceptual framework.

#### **2.2 Theoretical Framework**

Various theories have been progressed in an attempt and explain debt financing and its effect on financial distress but despite the fact that the concept of a firms' debt financing is still a puzzle, yet to be resolved. The study will be guided by the Wreckers theory of Financial Distress, the normative theory of bankruptcy, and the Agency theory.

##### **2.2.1 Wreckers Theory of Financial Distress**

Szilagi, Campbell, and Hilscher (2005) advanced the Wreckers theory of financial distress in which it suggest that that stock base of distressed companies perform in a way that is way low compared with stocks of financially stable companies. Meanwhile, the theory seeks to expound on advantages in favour of stakeholders of arising from financial distress and assert that the negativity of results relating to performance of financially distressed firms should not be associated with market inefficiency or irrationality. Consequently the theory assert that for firms that are financially distressed, returns to ownership of non-cash might be the most recommended way of payout and that in the event of market efficiency, the payout of returns will be represented valuation of stock. This can be referred to as 'wrecker's theory' of financial distress. It elaborates the whole system of outcomes thoroughly. Wrecking is the act

of ruthlessly withdrawing funds from companies that are already in a condition of financial distress.

Kalckreuth (2005) further argue that it is hard to reconcile the act of participants of financial market as a group can be inefficient or irrational to wreck an already distressed. Therefore, Campbell, Hilscher and Szilagi (2005), provided a clear insight of a company that has been struck by subsequent states of making losses, negative shocks, and going towards a condition of financial distress. With higher influence, instability of share prices goes up with regard to privacy of information; the final fate of the company relies upon issues unfamiliar to the general public. Having a one sided nature of information, it is becoming more crucial, investors who are uninformed, for this case orphans and widows– will go their way, as, from their perception; it is a market that deals with lemons. Sooner than later, the ownership of equity will be under the insiders – participants of market who possess a particular upper hand in acquiring and deducing information associated with the firm in question.

### **2.2.2 Normative Theory of Bankruptcy**

Normative theory of financial distress otherwise known as modern theory of bankruptcy was advanced by Alder (2002) and attempts to relate the outcomes of a bankruptcy process to initial stages in the lifecycle of the borrowing company. The theory argues that an efficient bankruptcy system would realize high payoffs compared to what creditors will gain from insolvent companies. Therefore, a system tailored to liberate financially distressed companies only is expected to generate greater payoffs for creditors as compared with a system that seeks to rescue firms that are economically distressed. Douglas, (2002) infer that at the stage of borrowing of a firm, a competitive financial market will reduce the amounts required by lenders when they expect the solvent firms to repay.

In summary therefore, the theory suggest that when the lenders' expected insolvency payoffs increase, the debt cost will reduce as the effectiveness of adopted bankruptcy scheme increases, the preference of investors will be to encourage the management team of firms to facilitate every project in that can generate credit and that firms that finance debt establishes less projects than what the society prefers due to the fact that firms must report bad returns status to creditors, although they are subject to sharing good returns status to the customers which is the society (Maina, Muriithi, Meeme & Kinyariro, 2016). Megginson, Ullah and Wei (2014) therefore highlight that a society that wishes to capitalize on social welfare prefer companies to undertake all project that have the capacity of generating credit. This implies that firms that are highly leveraged will tend to undertake less projects than what the public prefers since firms will end up surrendering, not only, bad state profitability to creditors, although good return reputation must be shared with them (Nyamboga et al., 2014).

### **2.2.3 Agency Theory**

Agency theory was advanced by Jensen and Meckling (1976) is concerned with the relationship between two parties who engage and cooperate in a way that one party (the principal) gives mandate of decision making and/or responsibilities to another party (an agent) to conduct the business activities on behalf of the principal. As a result of this relationship, uneven distribution of information will regularly exists between agents and principals and that the agents are more susceptible to risks compared to principals which will lead to efficiency being the selection criteria (Rungtusanatham et al., 2014). In an agency relationship, there are potentially two problems that may arise namely risk-sharing and agency problem. With regard to the agency problem, the objectives of agents vary from the ones of principals and since the owners do not run the firm on the day-to-day basis, it is expensive or difficult to verify whether the delegations awarded to agents were done as required (Jensen & Meckling, 1976). As regards the risk-sharing problems, this challenge

comes up when agents and principals have varying attitudes towards risk that results into conflict about remedies to be undertaken.

Crutchley and Hansen (2012) highlight that the financing and corporate principles decisions in a firm can provide incentive to different stakeholders in a way that will reduce behavior of value-minimizing and therefore lower the costs agency. Particularly, the selection process of dividend payments, management ownership, and leverage, can control the costs of agency that arise from the company's management – shareholders relationship. Jensen and Meckling (2006) suggested that the share of ownership of the management can be increased in the company and put in line with its accompanying interest together with shareholders' which will result in a "union of interests" between managers and shareholders.

Muritala (2012) opines that a company can lower the cost of agency by mounting its dependence on debt financing as sources of capital. By doing so, the necessity of equity financing will be reduced hence the cost of agency is avoided. However, the concept of accruing debt financing dependency is limited as a result of continuous accumulation of debt which may render a firm to get involved in financial distress. On top of financial distress costs, allegiance of emerging debt holders are expected to reduce the claim of active shareholders, thus the requirement of higher return rates that are depicted in increased capital cost of a firm. The major challenge that shareholders face is to guarantee that managers will bring back to them surplus cash flow (via payouts of dividend), rather than having it ploughed back in projects that are no profitable. Consequently, as much as the principals wish to manipulate decision making process of the manager, the cost of agency will rise.

### **2.3 Determinants of Debt Financing Distress**

Different studies have identified causes of a firm distress. These factors are both within the firm and also due to factors beyond the capacity of the organization. This section discusses

the dominant factors identified that are thought to influence the level of financial distress in a firm.

### **2.3.1 Management Efficiencies**

Choy et al. (2011) postulate that one of the causes of corporate failures or bankruptcy is due to the management characteristics that include, for example, inappropriate management skills and qualities, poor strategies implemented and corporate policy that might include inefficient governance structures. Wright and Stigliani (2013) highlight that a management team that does not identify the internal determinants of failure and hold responsible external changes for decline of their business will not be able to respond appropriately to the changes in the environment. Similarly, the perceived management reputation and the policies adopted by the management to run the company and to minimize bank financial distress will affect how signals of a firm distress will be handled.

Athanasoglou et al., (2005) reiterate that, governance efficiency that relate to how the company resources is used will explain how a firm management will develop appropriate strategies to minimise the damage resulting from a financial distress condition. Poletti-Hughes and Ozkan (2014) explains that management efficiency level is reflected in the level of operating expenses, with a lower level of operating expenses being an indicator of higher level of management efficiency, and therefore higher profitability and value of the firm. Similarly, the level of employee motivation, extent of deterrence and detection of fraud, strength of the internal control systems, management culture, consistency and perception in the market are used as measures

### **2.3.2 Leverage**

Udell and Berger (2008) highlight that a longer term debt financing terms, imply that a borrower can manipulate the risk outline and/or experience financial distress. The firms level

of financing mix is associated with the extent of existing innovation within the sector, such that with high investment required, the higher the requirement for investment financing and therefore, the company's expected leverage. In the case of banks, Sussman and Franks (2012) opine that the initial reaction of banks and other category of tenable creditors, to distress mean to salvage the company though lenders were found to be harsh with closely held business units due to the possibility of high asymmetrical level information. Thus Opler and Titman (2004) suggest that, a high degree of long-term debt will increase the costs of financial distress incurred by an organization, thus implying that there exist a positive significant correlation between financial distress and long-term leverage.

Desai (2007) articulate that a firm leverage level could have two effects on a firm. A high leverage level of a firm translates to possibly advanced capital cost with elevated leverage. Further, leverage may influence firm's valuation, with likely leveraged organizations, being considered to be in more risk condition than low leverage ones and as a result receives less reputation compared with firms that are less leveraged. Creditors will always be willing to listen to claims of companies that are trustworthy and have the capability of paying back the principal amount and the interest. As a result, firms that have the potential of growing strategically standards at a better position to lure the perception of investors and creditors (Scherr, & Hulburt, 2011). On the contrary point of view, less leveraged firms are perceived to be susceptible to risks associated with bankruptcy and closure, which makes investors and lenders to have a second thought on whether to invest or lend funds to such companies. Therefore, managers should ensure that the objectives of a company are adhered to from the initial stage of development lifecycle of a company in order to gain a positive reputation from various stakeholders and to ensure that the company focuses on strategically planned projects that will propagate external funding hence facilitating financial performance leading to

profitability (Aremu, & Adeyemi, 2011). In turn, the returns gained might be ploughed back for strengthening the capital reserve structure or paid back as interests.

### **2.3.3 Proportion of Short-Term Debt**

The short-term debt of a firm influences its ability to take immediate advantage of profitable investments and at the same time increases the firm's short-term obligations. Preve and Molina (2012) suggests that if the percentage of short-term debt is high relative to the long-term financing component, it enhances suppliers' incentive to stretch out credit to reimburse for unavailability of other, or better, solutions to the firm's financing scheme and to compensate themselves against the risk exposure level, lenders will charge higher interest rates. High levels of interest rate will make external borrowing very expensive exposing firms that rely on external funding to risk of being in financial distress that may lead into closure of the company as a result of bankruptcy. However, Biais and Gollier (2007) suggest that at the same time, financial distress may be minimized by the presence of trade credit over financial distress periods. In addition, suppliers have been found to avail increased trade credit amid financial distress period and this kind of funding facilitates reduction of costs associated with financial distress.

Berger and Udell (2008) argue that a high level of informational unevenness leads to costly creditworthiness of small and private firms in assessing credit services and is related to, amid other things, high costs of monitoring. As a result, most lenders will prefer short-term lending to business units in this category by serving to moderate the challenges arising from risk of borrower and uneven information that is common. Because of this, Martinez-Solano and Garcia-Teruel (2007) assert that for private firms, short-term debt contributes a relatively a lion's share of the financing in comparison to public companies. Nyamboga et al., (2014) note that the inability of a firm to gather for its obligation in the name of insufficient liquidity

will lead to deprived creditworthiness, loss of confidence from creditors' or rather lawful action resulting to the adjournment of the company.

#### **2.3.4 Firm Size**

Dichev (2008) highlight that several studies point to the fact that the risk factor of a firm distress is likely associated with the firm's book-to-market and the size effects. In reality, an alternative for distress of a firm is risk of bankruptcy in that when bankruptcy is logical, one would anticipate a positive relationship between successive realized returns and risk of bankruptcy. Large companies are percept to continue serving on long term debt (bond) which is associated with reduced fixed cost (overall) because they possess considerably higher scale of economy. Conversely, small firms are incapable of taking profit realized as a result of economic scale and have a propensity of using short term debt that has lower cost of transaction.

Cai, Fairchild & Gueney (2008) highlight that large companies have a higher tendency of issuing bonds while small companies get only short term debt from creditors. In the case of small organization, they prefer to work with short term debt due to its low cost of flotation and because the existing and potential opportunities for investment in small companies are more assured by their value of asset, and then can access short-term funding at a lower cost. To the contrary, Stephan, Talaver and Tsapin (2011) note that large firms are more transparent with the information activities which allows creditors to acquire precise information cheaply and will naturally charge lower cost of debt. Therefore, large firms are at low risk of bankruptcy facilitating acquisition of funds from external sources. The size of the firm and alternative value of firm which is equity capital, supplemented by book value of debts gives positive impact on the maturity of debt. Therefore, the larger the size of manufacturing companies, the higher the long term debt they invest.

## **2.4 Empirical Studies**

The area of a firms' capital structures has received quite attention among researchers locally and transversely over the world. The findings acquired from the studies regarding financial performance and capital composition of companies as well as the entire economic sector, has been mixed. The effect of a firm debt financing on the financial distress as also attracted the interest of different scholars.

Keasey, Rodrigues and Pindado (2015) examine the determining factors of financial distress costs in five European Countries SMEs in which the insolvency principles are the same. The study estimated the model through the use of panel data methodology, specifically, the framework Generalized Method of Moments advanced by Blundell and Bond (1998). The study utilized a ten year secondary data covering 1996 – 2006. The results were that there is existence a negative connection between potential costs financial distress and tangible fixed assets. This finding was elaborated by the fact that tangible fixed assets of a firm can act as security to access credit services and reduce financial obstacles. The findings further justified the position of SMEs, their apparent resilience to distress is due to the fact that, suppliers ordinarily get themselves indebted to offer help to their customers in order to avert getting themselves in a complicated bargaining situation when the company goes under risk of bankruptcy.

Shahwan (2015) investigated the impacts of corporate governance on financial distress and financial performance of companies listed in Egypt. The study employed four dimensions to proxy corporate governance namely; transparency and disclosure, structure of board of directors, investor relations and rights of shareholders, and control and structure of ownership. In addition, to estimate the firm's performance, the study employed Tobin's Q while financial distress level was estimated using the Altman Z-score. The study employed correlation and simple regression technique to estimate the nature of relationship. The

findings supported the earlier findings of Kamel and Shahwan (2014) that there is negative association between CG practices and financial performance of firms. Similarly, there is insignificant negative relationship between probability of financial distress occurring and CG practices. The study will differ with the present research with the regard used to establish the level of financial distress in the sense that the study adopted the Altman Z-score while the present study adopts the present study uses a composite measure as advocated by Pindado et al. (2008).

Koh, Durand, Dai and Chang (2015) wanted to distinguish the nexus between corporate restructuring and financial distress lifecycle. This research however, attempts to establish the effect of lifecycle theory on the preference of streamlining strategic plans in companies undergoing distress. Data was obtained from US firm on COMPUSTAT for the period ranging from 1995 to 2013, a period that firms experience multiple global financial calamities. The findings of the study was that at infant stages of company's development lifecycle, there is a tendency of reducing their volume of workforce while existing firms will focus on reshaping the structure of their asset base. Furthermore, the study shows that, a firm lifecycle is probably evident in the preference of financial streamlining strategies for example lowering dividend rates or changing capital composition.

Anayochukwu and Chinaemerem (2013) ought to discover the impact of external debt financing sources on Nigeria's economic development. The data used for the examination was gathered from CBN statistical staple 2012 which represented 1964-2011. daa analysis was carried out utilizing econometrics systems, for example, Vector Error Correction Model, Unit root, Graph and Co incorporation. The discoveries were that external debt financing of business enterprise advancement, the obligation financing has a positive effect on the business improvement and economic development of Nigeria. Besides, it was discovered that

all the external financing factors were not measurably critical to the development of business enterprises.

Ghati (2009) conducted a research on the nature preparedness on Basel II running among the Kenyan Commercial Banks. The primary data used in the study was assembled utilizing properly structured questionnaires with regard to review of empirical and theoretical literature on Basel II. The study outcomes discovered that Kenyan commercial banks have not implemented Basel II framework in its whole term of service. Besides, the study also found that most firms would be willing to put into operation the new deal in the year 2010, as shown by the degree of consciousness and the small number of organizations with available budget sets for implementation of Basel. In addition, the study recognized that for efficient Basel II implementation, firms must acquire strategic system infrastructures and improve their data and technology systems to enhance and guarantee that models are systematically validated and developed, and that the infrastructure systems are well-matched with the latest models with potential of successfully evaluating the necessary data. More so, the study established that the crucial problems that most institutions are faced with are, among others, model validation, model development, and technology.

Sakwa and Maina (2012) ought to investigate the nature of financial distress within the listed companies in NSE. The study employed the Z'-score multi-discriminant financial model of analysis which gives the lay out for evaluating company's financial performance. Additionally, the study conducted correlation and ANOVA tests in supporting the facts shown on Z-score model. The sample comprised of chosen companies listed in NSE categorized into five distinct industries. The findings discovered that the financial stability of companies listed calls for efficient improvement. Besides, a dislodge was discovered in the

relationship between the possible outcome of the listed firms in with respect to accrued benefits as a result of CMA supervision and guidance and financial performance.

Cheluget et al. (2014) investigated the extent of financial distress within insurance firms in Kenya. The study discovered that liquidity is a potential determining factor of financial distress among the Kenyan insurance companies. The study employed descriptive research design and stratified random sampling method due to heterogeneity of the population. The study targeted an aggregate of 45 insurance companies that are registered with the IRA as at 31 December 2012. Purposive sampling was then utilized in selecting a sample size of 15 firms from each stratum. Primary data collection was achieved by use of properly structured questionnaires. To find out the kind of relationship between dependent and independent variables, the researchers conducted Pearson's correlation and regression analysis to come up with regression model bearing the coefficients of independent factors. The study discovered a positive significant connection between financial distress and liquidity.

## **2.5 Summary of Literature and Research Gap**

The determination of capital composition of a firm has captured the discussion of finance managers and practitioners for a long time and can be outlined from the seminal work of Modigliani and Miller 1958. The question that has been occupying the minds of finance people is whether there exists an optimal blend of equity and debt capital combination that will optimize the company value or not and whether different components of capital will affect the value of a firm in a similar manner or not. Different position have arisen from the studies undertaken, such that successful firms have a little tendency of depending on debt in their structure of capital than less profitable ones and that the firm distress will be minimised. Other empirical studies have concluded that companies with a high rate of growth and size

have a high debt to equity ratio (Kraus and Litzenberger, 1973; Harris and Raviv, 1991, Li Meng et al.(2010).

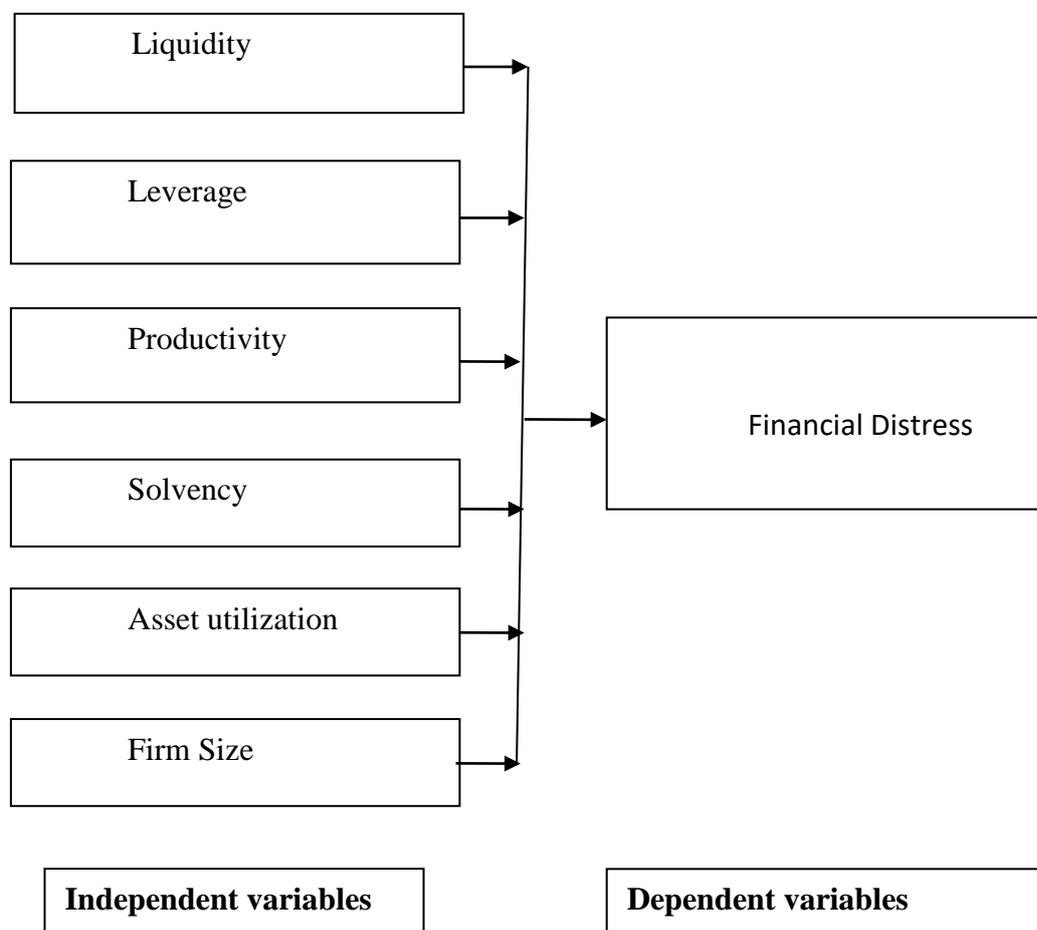
From both the local and empirical evidence review, it can be settled that the dominant view of the relationship between a firm's debt ratio and financial distress shows that there is a positive and considerable connection. However, the studies also reveal that the association between a firm's debt ratio and financial distress rely upon the firm life cycle stage especially those countries such as china in which the government has control majority of firms (Zhao & Sun, 2012). The economic environment that existed over the study period also had an impact on the a firm financial distress likelihood as was evidenced in studies undertaken in USA after the economic depression of 2008-2010 whereby firms that were highly levered were found to have been affected more than those that relied to equity financing.

However, from the reviewed studies, three distinguishing features come out and the present study. First are the sizes of the firms and the countries in which the studies were undertaken. All the studies apart from that of Baimwera and Muriuki (2014) were based on firms that are listed in various countries stock exchanges and this definitely are large firms that meet the capital requirements threshold set. Secondly, the methodological application financial distress that the studies adopted was that most of the studies adopted the Altman Z-score test as the tool for measuring financial distress. Thirdly, the empirical literature outcomes on the link between debt financing and financial distress are contradictory and as such compel additional investigation in spite of those conducted in Kenya and internationally.

## 2.6 Conceptual Framework

A conceptual framework is a diagrammatical research device proposed that will aid in creating a model and a comprehensive summary of the situation that is being studied. This study looks to examine the impact of debt financing on financial distress of firms listed at the NSE. Debt financing level is operationalized by liquidity, leverage, productivity, solvency, ratio, gearing, debt-to-equity and short-term debt to capital ratio.

**Figure 2.1: Conceptual Framework**



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

In this chapter the core subject of discussion was the methodology that was adopted in the study with the aim of achieving the objective of the study. Therefore the section focused on target population, research design, data collection process and analysis of data.

#### **3.2 Research Design**

Kothari (2008) assert that research design is a tactical plan intended to provide a go away procedure used in statistical collection, estimation and analysis of data whose preference is reliant on the phase to which information about the topic of study has highly advanced (Sekaran & Bougie, 2010). This research design provided both qualitative and quantitative information from all the chosen population. It also enabled the researcher to comprehend the distinctiveness of a group; gauge a situation and assemble data around possible change.

This research adopted a descriptive survey. With regard to Johnson and Gill (2006), descriptive research design is apprehensive largely with describing the specific attributes of a particular aggregate of elements. This study design was considered appropriate for this study since it enabled the researcher understand the variables under investigations from all dimensions.

#### **3.3 Population**

A population of study is a complete group of individuals or corporate bodies that the researcher has shown interest to examine some characteristics (Sekaran & Bougie, 2010). It is characterized as far as accessibility of components, time allotment, land limits and theme of intrigue. The population of the study was all the non-financial companies listed in NSE. The

study had an exception of financial institutions such as banks because they are considered highly regulated and their leverage levels are heavily influenced by regulation. There are 37 non- financial firms listed in NSE (Appendix I).

### **3.4 Sample and Sampling Technique**

In this study, the target population is considerably small facilitating the process of census as opposed to sampling. Consequently, census ensured that all elements in the target group are studied strengthening the reliability, completeness and consistency of measuring instruments. The sample selected for this study included all the listed firms at the NSE in the automobile, commercial and services, construction, energy and manufacturing sectors because they possessed the required information and Altman's Z-score, a proxy for financial distress would apply for these companies. The study therefore focused on 37 companies in the automobile, commercial and services, construction, energy and manufacturing sectors out of the 67 companies listed at the NSE.

### **3.5 Data Collection**

The study used secondary data only. The secondary data was acquired from the commercial banks yearly reports and statements of financial information from 2013 – 2017. The financial statement will be obtained from Capital Market Authority library. The data collected was quantitative in nature. Financial information related to working capital, total assets, EBIT, sales and long-term debt. The currency used for reporting the data was the Kenya shillings, abbreviated as KES. The dependent variable was financial distress as determined by the Altman Z-Score.

### **3.6 Data Analysis**

Analysis of data was achieved through the use Statistical Package for Social Sciences (SPSS Version 20.0). Computation of Descriptive statistics incorporated standard deviation and

mean. Additionally, in order to establish existence of relationship between the variables under investigation, the researcher carried out regression analysis. Descriptive statistics, for instance, mean and standard deviation likewise was done to depict variable characteristics.

### **3.6.1 Analytical Model**

A regression model used for data analysis to expressing the relationship between debt financing and financial distress of firm listed in NSE.

$$Z = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \epsilon$$

Where,

$z$  – Overall Z score;  $1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$

$X_1$  = Total Assets/ Working Capital

$X_2$  = Total assets/ Retained Earnings

$X_3$  = EBIT / Total Assets

$X_4$  = Book Value of Total Liabilities/ Market Value of Equity

$X_5$  = Sales / Total Assets

$X_6$  = Log of Total Assets

$\epsilon$  = Error term

### **3.6.2 Tests of Significance**

In this study, the researcher carried out an F- test with the intention of establishing the degree of influence of explanatory variables on outcome variable. The confidence level of significance of at which variables was interpreted was assumed at 95%. Interpretation of results took the following assumption; a variable containing 0.05 of p-value or less value was

regarded as being significant whereas p-value of above 0.05 was regarded as insignificant on the outcomes of the dependent variable.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND INTERPRETATION**

#### **4.1 Introduction**

This particular section makes a presentation of data analysis and interpretation. The objective of this research work was to assess how the non-financial firms listed at NSE have been affected by the management of the debt financing. Collection of data was done from 24 non-financial firms listed at NSE. The data sources included NSE reports, annual statements for a period of 5 years (2013-2017) as well as other publications. Data was collected based on the research variables, that are financial distress; Liquidity, Leverage, Productivity, Solvency, Asset utilization and firm size

#### **4.2 Descriptive Statistics**

Descriptive statistics provides a measure on the general nature of the situation under investigation. It characterizes the definite response nature from both primary and secondary data. The present study computed descriptive statistics which include: standard mean, deviation, maximum and minimum. Analysis of descriptive data was done on the financial distress; Productivity, Liquidity, Solvency, firm size and the Asset utilization

**Table 4.1: Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Z = Financial Distress	120	1.2781	67.4631	12.952493	14.9021157
X1 = Liquidity	120	-.2707	1.9469	.209701	.3218849
X2 = Leverage	120	.0011	1.4691	.330102	.3053835
X3 = Productivity	120	-.2558	18.5211	.614375	2.8056930
X4 = Solvency	120	.0708	60.8611	13.521944	14.3267405
X5 = Asset Utilization	120	.0486	11.6911	1.684405	2.2561870
X6 = Size	120	10.1750	19.7348	15.584765	1.9175666
Valid N (listwise)	120				

Source: Author, 2018

The mean financial distress was 12.95 for the firms researched on, suggesting that non-financial organizations listed at NSE have a relatively low average financial distress. Having a relative maximum of 67.46 and a standard deviation of 14.902, the indication is that non-financial firms listed at NSE financial distress differ relatively significant and consequently, we can settle that levels of liquidity indeed can affect financial distress for non-financial firms listed at NSE

The Liquidity standard deviation and mean are .322 and 0.21 respectively. This thusly imply that the change of Liquidity is significant and henceforth have an impact on financial distress of the non-financial firms listed at NSE. Leverage correspondingly demonstrates comparable physiognomies with Liquidity and financial distress. The average for Leverage is 0.33, and the standard deviation is 0.305. This is revealing of the huge discrepancy among Leverages in the non-financial companies that are listed at NSE. As a result of descriptive study portrayed in table 4.1, there exist a huge discrepancy in the variables among the non-financial companies listed at NSE that were studied.

### **4.3 Diagnostic Tests**

The research paper was able to make an establishment of how suitable the data was by examining on the multicollinearity for the different kind of variables and the outcome are going to be discussed in the following section.

#### **4.3.1 Tests of Normality**

The proper application of the parameters of inferential statistics the assumption of normality is tested. This is to ensure that the kurtosis and skewness of the data is tested. This is just to make a confirmation on whether the data under study is normally distributed. The data normality was then tested by use of Kolmogorov-Smirnov Test and the Shapiro-Wilk Test. The second method is best used when the sample of the data is small i.e. less than fifty. The method is much more reliable especially when making a determination on kurtosis and skewness of the data. When the result is below 0.05, then it is slowly deviating from the distribution of the data that is normal.

**Table 4.1: Kolmogorov-Smirnov Test of Normality**

Variables	Shapiro-Wilk			Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	Sig.	Statistic	df	Sig.
Liquidity	.288	120	.331	.747	120	.401
Leverage	.364	120	.331	.656	120	.401
Productivity	.309	120	.331	.742	120	.401
Solvency	.329	120	.331	.703	120	.401
Asset utilization	.349	120	.331	.616	120	.401
Firm size	.063	120	.200	.616	120	.401

Shapiro-Wilk	Kolmogorov-Smirnov <sup>a</sup>
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In accordance to the results, the Shapiro-Walk values were 0.288 for Liquidity, 0.364 for Leverage, 0.309 for Productivity, 0.329 for Solvency, 0.349 for Asset utilization and 0.063 for firm size. Kolmogorov-Smirnov tested significant values were at 0.401 for Liquidity, Leverage, Productivity, Solvency, Asset utilization and firm size each. This brings an implication that the p-value is far much greater than level 0.05 and therefore we reject the null hypothesis that states that the test for each variable is not from a normal distribution population. Then the prediction that the data was normally distributed cannot be denied. The tested results are therefore of the population emanating from the normal distribution.

### 4.3.2 Test for Multi-collinearity

Multi-collinearity inflates the standard errors and gives spurious results hence it is necessary to test for presence of multi-collinearity before running an ordinary least square regression model. This present study adopted a variance management efficiency factor (VIF) technique to examine the degree of multi-collinearity among the variables under investigation. The the study findings depicted in Table 4.10 discovered that multi-collinearity between variables does not exist because all the VIF values were found to be below 10. This suggests that the application of OLS in assessing the impact of debt financing on financial distress of non-financial companies listed in the NSE was vindicated.

**Table 4.2: Coefficients<sup>a</sup>**

	Colinearity Statistics Tolerance	VIF
Liquidity	.500	2.000
Leverage	.608	1.646
Productivity	.633	1.580
Solvency	.493	2.027
Asset utilization	.242	2.083
Firm size	.498	2.034

In the results above, all the VIFs are very low because they are well below 5. These values suggest that the coefficients are well estimated and the study should trust their p-values.

### 4.3.3 Serial Correlation

Wooldridge F-statistic serial correlation analysis was done to test whether the study variables were correlated in any way. Serial correlation test was done and as per the results it is clear that there is no correlation. This ensures the OLS estimates are not biased. The diagnostic results are found on Table 4.4 below

**Table 4.3: Serial Correlation**

Test	Statistic
Durbin Watson	2.187

Source: Research Findings

The Durbin Watson serial correlation test results as per Table 4.4 indicated the value to be 2.345 which is more than 2 implying that there is no serial correlation.

### 4.3.4 Heteroscedasticity

This takes place when the error term of the variance is different across the observed data. The heteroscedasticity is very essential in examination of the difference that exist in the variance of the observation to the other (Godfrey, 1996). The research work maximised on the conduct of regression analysis of the independent variables Glejser test (1969). In accordance to this case, the assumption made is that if the value  $>0.05$ , then there should be very minimal problem of the herescedasticity. The results for tests of Heteroscedasticity were as presented in Table 4.5.

**Table 4.4: Test for Heteroscedasticity**

<b>Coefficients<sup>a</sup></b>					
<b>Model</b>	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	1.125	.012		3.856	.000
Liquidity	.096	.056	.112	1.714	.148
1 Leverage	.256	.089	.349	2.876	.086
Productivity	.174	.070	.145	2.486	.089
Solvency	.102	.073	.123	1.397	.065
Asset utilization	.241	.113	.331	2.132	.065
Firm size	.254	.224	.267	1.134	.059

a. Dependent Variable: financial distress

Basing on the level of output, the values obtained  $>0.05$ , hence there is no big difference existing in the variation of dependent to independent variables that were tested

#### **4.4 Regression Analysis**

Regression analysis is defined as the statistical approach that classifies the existence of a relationship between two or more measurable factors: an outcome variable, in which the study aim to forecast its outcome, and the explanatory factor (or variable), that provides additional information on the outcome variable and the accompanying information is accessible. The method is applied in finding the equation that denotes the association between the study variables. Multiple regressions gives a linear equation with coefficients that forecasts a single variable from two or more explanatory factors.

The researcher carried out multiple regression analysis with the major aim of testing the relationship among explanatory (independent) variables on the concept of financial distress of non-Financial companies listed at NSE. The statistical package for social sciences (SPSS V 18.0) was used to enter and compute multiple regressions for the variables under study. The coefficient of determination describes the degree at which variations in the outcome variable can be explicated by the variation in explanatory variables or the ratio of variation in the dependent variable which in this case is the financial distress of non-Financial firms listed firms at NSE that is elucidated by all the six explanatory variables (Liquidity, Leverage, Productivity, Solvency, Asset utilization and firm size).

The present study computed multiple regression directed by the following model:

$$FD_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e_t$$

Table 4.6 demonstrates the model summary of regression results where, adjusted R square, R square, and standard error of estimate are presented.

**Table 4.6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.766 <sup>a</sup>	.587	.566	9.8225988

Source: Author, 2018

The results in Table 4.6 shows that the Liquidity had a joint substantial impact on financial distress of non-Financial companies listed at NSE as indicated by r value of 0.766. The R squared of 0.587 imply that the explanatory variables accounted for 58.7% of the discrepancy on listed non-Financial company's financial distress firms.

Table 4.7 displays the analysis of variance results explaining the model fit from the value of F statistic and the likelihood of F-statistic.

**Table 4.5: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	15524.064	6	2587.344	26.816	.000 <sup>b</sup>
Residual	10902.630	113	96.483		
Total	26426.693	119			

Source: Author, 2018

The results in Table 4.7 show that the F statistic was 26.816. At 5% confidence level, the F statistic was found to be significant. Consequently, all the explanatory variables (Liquidity, Leverage, Productivity, Solvency, Asset utilization and firm size) explain a variation in financial distress and that the overall model is significant. The F critical value at 6 and 113 degrees of freedom is 2.2 which is far much less than 26.816. We therefore reject the null hypothesis and concluded that debt financing has an impact on financial distress for non-financial firms listed at NSE. The p value of 0.0000 is also greater than 0.05 which shows that the effect is statistically significant.

Table 4.8 displays the coefficient outcomes for the variables of the model, the t-values of every single independent variables as well as the extent of significance (p-value).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-17.205	8.579		-2.005	.047
	X1 = Liquidity	-.488	3.776	-.011	-.129	.897
	X2 = Leverage	-1.539	3.594	-.032	-.428	.669
	X3 = Productivity	3.250	.327	.612	9.931	.000
	X4 = Solvency	.547	.067	.526	8.221	.000
	X5 = Asset Utilization	1.535	.494	.232	3.105	.002
	X6 = Size	1.205	.507	.155	2.377	.019

Source: Author, 2018

From the discoveries in the above table the research found that holding Liquidity, Leverage Productivity, Solvency, Asset use and Firm size steady money financial will be - 17.205, the investigation likewise discovered that a unit increment in Liquidity practices will cause a 0.488 change in monetary trouble, further it was built up by the study findings that a unit increment in Leverage practices will prompt a decline in financial distress by 1.539, it was additionally discovered that a unit increment in Productivity practices will prompt a decline in financial distress by a factor of 3.25, it was additionally found by the investigation that a unit increment in Solvency practices will prompt an expansion in financial distress by a factor of 0.547, a unit increment in Asset use will prompt a decline in financial distress trouble by a factor of 1.535 and a unit increment in firm size will additionally prompt an increment in financial distress by a factor of 1.205. The resulting predicting equation therefore is  $Z = -17.205 - .488X_1 + 1.539X_2 + 3.25X_3 + 0.547X_4 + 1.535X_5 + 1.205 X_6 + 8.579$

#### **4.5 Interpretation of the Study Findings**

The study uncovered that Liquidity had a joint huge impact on financial distress of listed non-financial firms at Nairobi Securities Exchange as appeared by  $r$  estimation of 0.766. The  $R$  squared of 0.587 demonstrates that the independent factors represented 58.7% of the fluctuation on financial distress of listed non-Financial firms. At 5% significance level, the  $F$  statistic was significant for the study. For this situation, all the indicator factors (Liquidity, Leverage, Productivity, Solvency, Asset use and firm size) clarify a variety in financial distress and that the general model is huge.

From the discoveries in the above table the investigation found that holding Liquidity, Leverage Productivity, Solvency, Asset usage and Firm size consistent financial distress will be - 17.205, the research likewise discovered that a unit increment in Liquidity practices will cause a - .488 increment in financial distress, further it was set up by the investigation that a unit increment in Leverage will prompt a decline in financial distress by 1.539, it was additionally discovered that a unit increment in Productivity practices will prompt an expansion in financial distress by a factor of 0.325, it was additionally found by the study that a unit increment in Solvency practices will prompt an increment in financial distress by a factor of 0.547, a unit increment in asset use will prompt a decline in financial distress by a factor of 1.535 and a unit increment in firm size will additionally prompt an expansion in financial distress by a factor of 1.205. Tandem with the study discoveries,

## CHAPTER FIVE

### SUMMARY CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

The section outline results from the past section and gives our decision, recommendation and constraints of the investigation in accordance with the point of the study. The explanation behind this study is to exhibit the relationship among liquidity and financial distress in Kenya's listed non-financial firms. The present research utilized published financial information or statements from the 24 non-financial companies listed at NSE as auxiliary information from the year 2013 to 2017 and estimated financial distress through profit for assets and liquidity through liquidity ratio, capital ratio and deposit to asset proportion.

#### 5.2 Summary

The study uncovered that Liquidity had a joint critical impact on financial distress of non-financial firms listed at Nairobi Securities Exchange as appeared by  $r$  estimation of 0.766. The  $R$  squared of 0.587 demonstrates that the independent factors represented 58.7% of the fluctuation on financial distress of non-financial firms listed at Nairobi Securities Exchange. At 5% confidence level, the  $F$  statistic was huge. For this situation, all the explanatory factors (Liquidity, Leverage, Productivity, Solvency, Asset usage and size of the firm ) clarify a variety in financial distress and that the general model is significant.

From the discoveries in the above table the investigation found that holding Liquidity, Leverage Productivity, Solvency, Asset use, and Firm size constant financial distress will be - 17.205, the examination likewise discovered that a unit increment in Liquidity practices will cause a 0.488 decline in financial distress, further it was set up by the investigation that a unit increment in Leverage will prompt a decline in budgetary trouble by 1.539

it was likewise discovered that a unit increment in Productivity practices will prompt an expansion in financial distress by a factor of 3.25, it was additionally found by the study that a unit increment in Solvency practices will prompt an increment in financial distress by a factor of 0.547, a unit increment in Asset usage will prompt a decline in financial distress by a factor of 1.535 and a unit increment in firm size will additionally prompt an increment in financial distress by a factor of 1.205

### **5.3 Conclusion**

From the data analysis in chapter four, liquidity is confirmed as a determinant of financial distress. The relationship between financial distress and Liquidity, Productivity, Solvency, and firm size is positive; implying that when liquidity productivity, solvency and firm size goes up, it will make the financial distress of non-financial firms listed at NSE to increase. However, the study concludes that leverage and asset utilization had a negative effect on the financial distress of non-financial firms listed at NSE, implying that when leverage and asset utilization goes up, it will make the financial distress of non-financial firms listed at NSE to decrease.

The research likewise infers that Liquidity had a joint noteworthy impact on financial distress of listed non-financial firms as appeared by r estimation of 0.766. The R squared of 0.587 demonstrates that the autonomous factors represented 58.7% of the difference in the financial distress of listed non-financial firms. At a 5% confidence level, the F measurement was found to be significant. For this situation, all the indicator factors (Liquidity, Leverage, Productivity, Solvency, Asset use, and firm size) clarify a variety of financial distress and that the general model is significant

#### **5.4 Recommendations for Policy and Practice**

Borrowing acquaints a hazard with the organization and on the return to investors as far as minimizing the amount of benefit accessible to them, and in addition, presenting their advantages for disintegration in case of neglecting to reimburse the debt in the time stipulated. At the point when a company's profits are probably going to change significantly, the utilization of expanded debt amplifies the hazard. Satisfactory accentuation must be put on empowering such organizations to utilize a larger number of investors' funding than debt and decrease the hazard that is inborn in the increased utilization of debt.

At the point when a firm has depleted its funds from shareholders' docket and funds its development of activities by getting, exceptional thought must be taken to guarantee that the advantages financed by the borrowed assets acquire a higher return than the premium the firm is required to pay on the debt. On the off chance that this isn't done, the firm will disintegrate the reserves so as to pay the debt as the advantages financed won't make enough profits to cover the debt. The firm should choose its funding sources painstakingly to abstain from falling into the use hazard trap.

#### **5.5 Limitations of the Study**

**Over** the entire process of doing this research, we experienced a ton of issues which frustrated us in directing the study proficiently as required or expected. The financial reports of some non-financial of listed firms at NSE were not accessible so as to be incorporated, henceforth a decrease in the measure of the sample from which the information was gathered.

The research study was done in Kenya and in this way, the outcomes might be important to states in light of the fact that the working condition is extraordinary. The time of the study was five years which isn't sufficient time to make an unequivocal determination

## **5.6 Suggestions for Further Studies**

A study on the relationship between the two factors, liquidity and financial distress, in different enterprises separated from non-financial companies listed at NSE will intrigue. There is a direction on the dimension of liquidity that a firm can keep up. There ought to be crosswise over outskirts concentrate to be conveyed crosswise over Border States so as to comprehend the impact of various operating and economic elements on the relationship between the two factors.

The major concept of this study was debt financing which covers short-term financing and long-term debt financing. This study recommends a study on the effects of either long-term debt or short-term debt financing strategies by firms listed at NSE.

Finally, a study can be carried on the factors that influence debt financing in firms listed at NSE and the major factors that influence their financing choice. A study can also be carried out on the major capital source for firms listed at NSE and the challenges faced by the firms towards accessing finance.

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## APPENDIX

### Appendix I: Data Capture Form

	Financial Distress=EBIT/Total Assets	Working Capital / Total Assets	Retained Earnings / Total assets	Earnings before Interest and Taxes / Total Assets	Market Value of Equity / Book Value of Total Liabilities	Sales / Total Assets	Log of Total Assets
EABL	0.04	0.54	0.15	0.04	11.66	0.55	7.74
SG	0.04	0.82	0.3	0.04	3.7	1.28	6.57
UNGA	0.24	2.61	1.25	0.3	4.35	10.85	6.21
KENGEN	0.01	0.14	0.17	0.01	2.76	0.09	8.44
SAMEER	-0.01	1.22	0.16	-0.01	1.53	0.86	6.5
E.A. PORTLAND	0.32	1.21	0.29	0.32	6.89	0.42	7.21
BAMBURI	0.18	0.5	0.22	0.22	5.51	0.79	4.45
EVEREADY	0.18	1.03	0.02	0.18	3.98	0.95	6.12
TRANSCENTURY	0.11	0.24	0.01	0.11	0.69	0.86	7.12
KENOL	0.1	1.45	0.02	0.1	0.92	3.48	7.49
SAFARICOM	0.25	0.48	0.4	0.25	5.51	1.08	8.17
E.A. CABLES	0.1	1.02	0.2	0.1	0.69	1.03	6.76

PAN AFRICAN	0.19	0.59	0.12	0.19	29.63	3.18	6.23
TOTAL	0.07	1.19	0.11	0.07	6.89	4.75	7.57
CROWN	0.08	1.33	0.46	0.08	6.89	1.49	6.62
SASINI	0.06	0.2	0.81	0.06	1.38	0.09	6.87
KAKUZI	0.06	0.39	0.74	0.06	6.89	0.43	6.59
BOC	0.17	0.71	0.53	0.17	6.89	0.59	6.35
CAR AND GENERAL	10.87	1.03	0.21	10.87	6.89	2.09	6.6
MARSHALL E.A.	0.05	0.71	0.33	0.05	6.89	0.27	5.79
RHINO CEMENT	0.09	1.02	0.26	0.09	1.38	0.48	7.47
BAT	0.37	0.9	0.1	0.37	57.17	2.02	7.24
CARBACID	0.6	0.76	0.73	0.6	1.38	0.76	6.11
REA VIPINGO	0.44	0.64	0.31	0.44	6.89	1.99	6.15

## **APPENDIX II : LISTED OF NON-FINANCIAL FIRMS LISTED AT THE NSE**

1. Eaagads Ltd
2. Kapchorua Tea Co. Ltd
3. Kakuzi
4. Limuru Tea Co.
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd
8. Car and General (K) Ltd
9. Express Ltd
10. Sameer Africa PLC
11. Kenya Airways Ltd
12. Nation Media Group
13. Standard Group Ltd
14. TPS Eastern Africa (Serena) Ltd
15. Scangroup Ltd
16. Uchumi Supermarket Ltd
17. Longhorn Publishers Ltd
18. Atlas Development and Support Services
19. Deacons (East Africa) Plc
20. Nairobi Business Ventures Lt
21. Athi River Mining
22. Bamburi Cement Ltd
23. Crown Paints Kenya PLC.
24. E.A.Cables Ltd
25. E.A.Portland Cement Ltd
26. KenolKobil Ltd
27. Total Kenya Ltd
28. KenGen Ltd

29. Kenya Power & Lighting Co Ltd
30. Umeme Ltd
31. Jubilee Holdings Ltd
32. Sanlam Kenya PLC
33. Kenya Re-Insurance Corporation Ltd
34. Liberty Kenya Holdings Ltd
35. Britam Holdings Ltd
36. CIC Insurance Group Ltd
37. Olympia Capital Holdings Ltd
38. Centum Investment Co Ltd
39. Home Afrika Ltd
40. Nairobi Securities Exchange
41. Kurwitu Ventures
42. Home Africa Ltd
43. British American Tobacco Kenya Ltd
44. Carbacid Investments Ltd
45. East African Breweries Ltd
46. Mumias Sugar Co. Ltd
47. Unga Group Ltd
48. Eveready East Africa Ltd
49. Kenya Orchards Ltd
50. Flame Tree Group Holdings Ltd
51. Safaricom PLC
52. Stanlib Fahari I-REIT
53. New Gold Issuer (RP) Ltd

**(Source: nse.co.ke)**

### APPENDIX III: DATA USED

Z = Financial Distress	X1 = Liquidity	X2 = Leverage	X3 = Productivity	X4 = Solvency	X5 = Asset Utilization	X6 = Size
21.96854	0.084174	0.142481	0.004361	33.80018	1.373563	17.57669
6.543759	0.062201	0.314699	0.050345	7.543539	1.336277	15.09815
17.75257	0.140191	0.997336	0.23782	9.899033	9.463849	14.2855
2.876847	0.039514	0.199969	0.005439	4.073889	0.087194	19.05553
6.100298	0.458433	0.200967	0.182868	5.914734	1.11652	14.95871
2.464547	0.795605	0.255898	0.099749	0.68118	0.413685	16.59807
23.2542	0.234043	0.019806	0.189819	34.43957	0.69806	10.29167
6.376484	0.129683	0.024078	0.269574	6.855785	1.184092	13.65065
18.73842	0.079027	0.001096	0.118644	28.93662	0.888561	16.4024
4.945557	0.020584	0.028463	0.0695	2.138636	3.368478	17.29868
2.521524	0.06876	0.501976	0.21052	0.147241	0.953184	18.68606
14.11504	0.141385	0.253381	0.115746	20.46931	0.927091	15.39595
8.937897	0.304806	0.290438	0.238066	7.286796	3.007819	14.38654
5.647581	0.162977	0.085953	0.058136	2.121069	3.867183	17.50399
4.177529	0.225495	0.488711	0.113797	2.055344	1.614002	14.97754
5.115402	0.023566	0.54165	0.030006	6.846899	0.121654	15.18582
3.350902	0.272725	0.730392	0.064298	2.361567	0.37196	15.12973
6.605696	0.22327	0.445627	0.16148	7.815773	0.491547	14.68687
3.395402	0.011926	0.162513	0.218617	1.414544	1.583412	15.30981
2.539135	0.231327	0.318034	0.025854	2.405215	0.287848	13.29708
1.882841	0.358386	0.271841	0.097859	0.243783	0.602994	16.97314
7.268472	0.111069	0.110689	0.368558	12.87618	2.038273	16.5665
11.22646	0.578242	0.814187	0.66727	26.57855	0.843586	13.93729
15.33089	0.013614	0.244337	0.550757	18.34333	2.148978	13.99446
8.574391	0.039491	0.165604	0.052368	44.95024	1.152198	17.78949
12.74274	0.063133	0.361573	0.058082	17.71909	1.337651	15.08959
21.30777	0.144203	1.176065	0.346081	12.47398	10.86179	14.26361
2.046291	0.00973	0.16415	0.006277	2.857425	0.069638	19.33779
13.89897	0.371893	0.162549	-0.05252	20.68403	0.988021	15.01578
3.547341	0.777757	0.298867	0.422938	0.641138	0.415241	16.57493
8.272146	0.288842	0.016263	0.193743	60.86114	0.746731	10.24789
8.097031	0.210397	0.021773	0.306197	9.200083	1.283573	13.7559
7.320443	0.010911	0.014029	-0.24681	12.03522	0.881041	16.2694
6.400825	0.237621	0.014294	0.116451	4.015149	3.302292	17.13522
2.709991	0.001585	0.513122	0.265016	0.079002	1.067765	18.72372
11.42439	0.056379	0.205127	0.098001	16.46368	0.867942	15.58607

9.002464	0.24239	0.094412	0.054224	7.678434	3.79342	14.13981
8.340431	0.224183	0.137935	0.078309	3.945132	5.252803	17.29681
3.123401	0.168514	0.406336	0.055263	1.271978	1.40676	15.27247
14.5449	0.015356	0.780628	0.053709	21.95547	0.083069	15.97984
3.182333	0.262898	0.740993	0.059594	1.977327	0.446406	15.14672
8.853566	0.240128	0.578799	0.128292	11.22872	0.594496	14.53748
4.182882	0.013837	0.229111	0.018763	2.586864	2.231487	15.12892
3.062505	0.050672	0.343851	0.026542	3.444164	0.366219	13.31117
1.445473	0.233332	0.263538	0.08245	0.099805	0.464555	17.20273
1.278101	0.099234	0.098996	0.354035	10.92458	1.897363	16.70506
12.89134	0.579113	0.761466	0.572206	24.60204	0.680847	14.0092
17.21172	0.019049	0.311041	0.403569	22.29991	2.041683	14.09519
36.2281	-0.046	0.133829	0.058691	59.72878	0.064982	17.87791
14.2145	0.00657	0.274162	0.059952	20.7765	1.159045	15.16941
21.98756	1.91323	1.341818	0.248404	9.372261	11.37005	14.31429
4.233963	0.002595	0.149322	0.016581	6.469273	0.085517	19.65184
22.25174	0.402892	0.332812	0.03358	34.08534	0.740319	15.13759
2.577203	0.145786	0.296556	0.361837	0.61959	0.421263	16.58694
5.127691	0.306204	0.412803	0.255817	40.83601	0.836517	10.25136
5.016883	0.007969	0.024473	0.112296	6.456105	0.728816	14.24926
14.75465	0.030543	0.014016	0.235684	21.66	0.924618	16.32811
6.239407	0.109941	0.014457	0.112186	3.422975	3.663238	17.20491
2.649583	0.012527	0.401109	0.268733	0.070809	1.143695	18.78329
12.50333	0.027183	0.198021	0.09925	17.24218	1.520647	15.60667
9.667931	0.243838	0.093557	0.219292	7.987575	3.728138	14.17119
8.171473	0.17688	0.129811	0.078068	3.85531	5.206672	17.33905
3.569845	0.271601	0.418377	0.078992	1.63409	1.417067	15.28168
14.92944	0.021293	0.905982	0.059596	22.3171	0.048586	15.96819
3.11183	0.26764	0.729383	0.059395	1.911017	0.426912	15.1981
7.989566	0.298015	0.569265	0.143004	9.545752	0.635611	14.56239
62.97994	0.007231	0.222554	17.77991	3.117929	2.115222	15.19163
3.98894	0.110884	0.338631	0.075923	4.901524	0.190335	13.2231
1.537402	0.300122	0.261727	0.086766	0.109486	0.45882	17.23026
67.46312	0.101834	0.101838	0.358864	16.6216	2.04113	16.70567
1.857067	0.387441	0.727955	0.590038	24.05446	0.706805	14.0587
24.9018	0.004202	0.333513	0.452067	34.89395	2.00165	14.15173
32.63506	-0.0242	0.155553	0.102733	53.41396	0.058933	17.80755
14.04627	0.054306	0.320696	0.009455	20.3794	1.273289	15.14571
22.20564	1.946907	1.469052	0.387136	8.073387	11.6911	14.33951
4.777714	0.010147	0.159391	0.022143	7.283678	0.099114	19.72155
34.81457	0.524913	0.045804	-0.25576	56.95512	0.791474	14.88188
2.362074	0.177853	0.29439	0.368687	0.16779	0.419164	16.60731
2.307358	0.310633	0.419207	0.239482	19.45615	0.883727	10.17504
3.096773	0.042965	0.022922	0.113863	3.099704	0.777555	14.33073
14.68066	0.041235	0.012834	0.212414	21.87079	0.789767	16.50309

7.805239	0.092613	0.017157	0.112952	6.067369	3.656923	17.2204
2.615375	0.014112	0.340045	0.270314	0.094049	1.173913	18.8685
12.86697	0.016339	0.178462	0.100075	18.903	0.925472	15.62407
9.046651	0.287959	0.065956	0.219631	8.285405	2.912735	14.4191
7.683294	0.158647	0.094111	0.070575	4.051662	4.697267	17.47038
3.784215	0.265808	0.432016	0.08331	1.770045	1.523471	15.30133
19.21441	0.021771	0.919083	0.070997	29.27016	0.105189	15.97988
3.135991	0.289591	0.75592	0.060915	1.808821	0.443882	15.19211
10.91106	0.283074	0.549046	0.196439	14.2186	0.623304	14.61958
64.17095	0.014234	0.222679	17.79125	4.833542	2.230863	15.20504
3.602737	0.105661	0.337831	0.062804	4.243548	0.249598	13.36098
1.423381	0.291195	0.233212	0.082502	0.103541	0.413068	17.35256
66.88533	0.100249	0.104001	0.376456	15.54596	2.049554	16.70768
16.54798	0.328522	0.677569	0.57429	20.99323	0.714061	14.14869
25.49401	0.023225	0.349648	0.432686	35.84412	2.042302	14.17716
44.85643	0.099983	0.129276	-0.02126	34.1765	0.11971	18.01833
12.86454	-0.14818	0.240492	0.02767	18.90149	1.273456	15.11161
23.57683	1.752552	1.387528	0.406389	11.57106	11.24751	14.43393
4.405413	0.011851	0.161292	0.01765	6.67316	0.103242	19.7348
32.77644	0.587643	0.078132	0.066758	51.80496	0.658605	14.82035
3.204342	0.732382	0.282451	0.34654	0.602985	0.424677	16.66683
2.789366	0.228697	0.221588	0.193513	18.04229	0.740737	10.55945
2.148856	0.055865	0.020783	0.121441	1.496417	0.754116	14.45547
9.758194	-0.0144	0.013561	0.231409	13.65221	0.801518	16.50665
6.966614	0.137719	0.018606	0.108909	5.047414	3.387455	17.3189
2.246049	-0.02887	0.240092	0.247978	0.112272	1.058866	19.00852
14.94196	0.034778	0.15829	0.102492	22.36153	0.923477	15.66103
9.280911	0.277313	0.046863	0.193806	9.640458	2.458691	14.58964
7.932184	0.262355	0.09711	0.073142	4.19715	4.721746	17.50403
3.977984	0.252707	0.555659	0.087549	1.902581	1.466353	15.36583
27.10443	0.023541	0.912373	0.083849	42.36317	0.104254	16.00236
2.97113	0.331794	0.744509	0.064827	1.449979	0.446748	15.20982
22.05547	0.279802	0.521548	0.206819	32.83735	0.604634	14.67815
67.06504	0.010465	0.232465	18.52108	5.563032	2.269645	15.20475
2.982145	-0.27072	0.292821	0.063011	4.041913	0.263971	13.50945
1.672012	0.434903	0.25093	0.089324	0.099802	0.444174	17.29396
65.48237	0.098128	0.108142	0.38734	10.11541	2.065746	16.71205
15.95963	0.368962	0.686109	0.572387	19.67615	0.861753	14.17674
26.61667	0.024967	0.304067	0.38025	38.63803	1.723373	14.36449