FIRM SPECIFIC FACTORS AND FINANCIAL DISTRESS: EVIDENCE FROM LARGE MANUFACTURING FIRMS IN KENYA

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DECLARATION

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

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

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DEDICATION

I dedicate this research project to my family for their prayers and encouragement. Most sincere gratitude to my lovely wife for immense support while undertaking this research project.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

ABI - Aggregate Bankruptcy Index

CMA - Capital Markets Authority

EBIT - Earnings Before Interest & Tax

FMCG - Fast Moving Consumer Goods

GDP - Gross Domestic Product

GLS - General Least Square

GMM - Generalized Method of Moments

KAM - Kenya Association of Manufacturers

KEBS - Kenya Bureau of Standards

NSE – Nairobi Stocks Exchange

POT - Pecking Order Theory

ROA – Return on Assets

ROE - Return on Equity

VIF - Variance Inflation Factors

ABSTRACT

Businesses are often founded with the hope that they infinitely operate into the foreseeable future and increase investors' value with no need to suspend operations or close business. This may not be the reality as companies at some point will be faced by financial difficulties and the measures taken will determine if they survive or are forced to dissolve. The objective of the study was to establish the effect of Firm Specific Factors and financial distress among Large Manufacturing Firms in Kenya. Firm specific factors utilized in the current study included; liquidity, leverage, and profitability. The theories utilized in the current study were; the Wreckers Theory, Trade-off Theory, Credit Risk Theory, Agency Theory and Pecking Order Theory. The target population was the 1045 manufacturing firms in Kenya. Convenience sampling was used in the current study ultimately deriving a sample of 22 large manufacturing firms. Secondary sources of data were employed. The study applied both descriptive statistics as well as inferential statistics that entailed correlation and multiple linear regression analyses. The study findings were that the manufacturing firms are generally in the grey zone and safe zone and the companies are not likely to be headed towards bankruptcy and that only about 25% of the manufacturing firms are likely to be headed towards bankruptcy. Additionally, the current study findings established that the manufacturing firms generally have a range of not having a good current ratio to having a good current ratio and that only about 50% of the manufacturing firms have a good current ratio. The study findings further established that the manufacturing firms' general solvency situation ranges from being a cause for concern to being good and that about 50% of the manufacturing firms have a good solvency situation, 25% are risky, while another 25% have a solvency situation which is a cause of concern. Further findings were that only liquidity and profitability had a significant correlation to financial distress. Further, the findings indicated that they are both negatively significantly correlated with financial distress. Additional study findings were that the firm specific factors entailing liquidity, leverage, and profitability explained financial distress to a large extent and they can significantly influence financial distress. Also, only the firm specific factors, liquidity and leverage were found to have a significant relationship with financial distress. They both had positive significant relationships with financial distress. Policy and practice recommendations were made to policy makers in the trade and industry sector, specifically the Ministry of Trade, Investment, and Industry, as well as the Kenya Investments Authority and Kenya Trade Network Agency, and also the capital markets regulator, the Capital Markets Authority to focus on the firms' internal factors to detect and avert imminent financial distress and bankruptcy. Further recommendations are that they should continually monitor the solvency situation of firms by analyzing and monitoring the internal firm factors. Additional recommendations are that they should monitor and be wary of firms rapidly scaling up their operations. Final recommendations are that they ought to surveil borrowing levels in the capital structure of firms to ensure that it does not exceed the optimal levels. Recommendations are also made to the manufacturing firms, as well as other commercial firm' management and consultants, lenders, and investors to focus on firm specific factors to predict, monitor, and mitigate financial distress and bankruptcy. Additional recommendations made to the practitioners to scale their operations sustainably and recommendations are also made to the lenders and investors to monitor firms which are scaling up rapidly. Final recommendations to firm practitioners are that they should uptake optimal debt in their respective firms' capital structure and also recommendations are made to lenders and investors to monitor firms' uptake of debt.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Businesses are often founded with the hope that they infinitely operate into the foreseeable future and increase investors' value with no need to suspend operations or close business. This may not be the reality as companies at some point will be faced by financial difficulties and the measures taken will determine if they survive or are forced to dissolve. Andrade and Kaplan (1998) define financial distress as a situation where an entity lacks the ability to settle its financial obligations. This may be followed by a company defaulting on its debt obligations to third parties, leading to either bankruptcy or restructuring. As defined by Pandey (2005), financial distress is the inherent probability of a company undergoing difficult business conditions hence have trouble in repaying debts when due. Broadly, the concept of financial distress includes four basic concepts, failure (economic and financial), insolvency, default (technical and legal) and bankruptcy (Ceylan, 2021).

Financial distress causes significant direct and indirect costs for enterprises, which includes; losing important non-financial stakeholders, violating contract terms, and inability to undertake projects with positive Net Present Value (NPV). The contract violations bring about negative situations that might include; financial penalties, accelerated repayments, reduced operational flexibility, and the management bearing high costs in terms of both time and resources in eliminating these problems. Additionally, financial distress also causes disruption in the optimal capital structures of firms which is a significant cost. Further, the situation faced by companies experiencing financial difficulties might encourage their competitors to gain more market shares by leveraging of the firms' situation, thus creating an important distress cost element for companies.

Bankruptcy have vast consequence especially for the publicly listed entities' stakeholders. A firm's financial health is largely in distress then followed by corporate failure. Therefore, determination of distress causes is a significant matter to employees, investors, creditors, and other stakeholders (Baimwera & Muriuki, 2014). At least 6 listed companies became bankrupt and went into liquidation between 2009 and 2018 in Kenya (Walela, Omagwa & Muathe, 2021). Therefore, assessment of corporate failure has emerged as an important area where many professionals and academicians have researched in an attempt to derive other optimal prediction models, based on the specific condition of the firms under study.

Through increased cost of credit, financially distressed companies inflict an in-direct costs of obtaining finances on other financially healthy counterparts in the industry which continues beyond downturns in the market. Entities with superior statement of financial position are able to avoid such negative effects by preying on other market players with an aim of attaining an increased share in the market, in defiance of an increased financing cost. Distressed firms may also utilize other tools to overcome financial difficulties such as tax planning. According to Muhindi (2019), distressed companies are more likely to practice tax avoidance practices in contrast to financially stable entities. This argument is in consensus with the argument that credit constrained companies avoid taxes as an option of business financing and that accumulated reduction on taxes may bring in the required funds to help struggling companies pull through.

Financial distress causes can be categorized into, Firm-specific level, Industry level and Macro level. Firm-specific level causes of financial distress comprise of those factors specific to a particular firm and includes operating risk, ownership, leverage, and governance. Industry level causes of financial distress affect firms in a specific industry. Macro level causes of distress

are those factors which firms have no control as they affect the economy as a whole. They include economic cycles, regulatory changes, and monetary policy effects. According to Dirman (2021), there are several indicators used to identify signs of financial distress seen from external parties, namely decrease in dividend paid to shareholders over a period, continuous decline in profits, massive layoffs, disposal of business units, and steady decline in share price. Hence, assessment of the firm specific factors on level of financial distress is distinctly a significant issue to all stakeholders including employees, creditors, and investors.

1.1.1 Firm Specific Factors

Firm specific factors causing financial distress are unique factors to an individual firm and might be mitigated by measures taken within the firm. Financial distressed firms are characterized by a weak financial performance and experience numerous financial problems. As postulated by Altman (1968), firm specific determinants of financial distress are growth, liquidity, profitability, and leverage.

A negative force on production costs in an industry or demand shocks sustained over time will force the weakest firms into liquidation or opt for acquisition by a stable company in the industry. Wesa and Otinga, (2018) explained that distressed companies encounter two main issues, either overdue obligations on the liability side or a liquidity deficiency on the asset side showing insufficient cash available to cover current obligations when they fall due. This liquidity situation if not reversed is a potential cause of financial distress.

Firms use fixed-cost debt to finance investment with the hope of increasing equity returns. Default risk increases with an increase in a company's debt portfolio. Default of contractual obligations may result into litigation and or liquidation. To achieve tenable profits, companies

need to configure their assets to attain an optimal combination with changes in the business environment (Teece, 2007). Highly performing firms experience consistently high sales, resulting to increased cash availability for settlement of short-term obligations and capital investments.

Available literature has linked several firm specific factors to financial distress. Firm size, liquidity, leverage, and level of profitability have severally been pinned down to be main factors causing corporate financial distress (Ikpesu, 2019). According to Becchetti & Sierra (2003), share price, profitability, liquidity, leverage, and revenue growth have been pinned down as causes of distress in major companies. Wesa & Otinga (2018) investigated on the factors influencing financial distress levels among Kenyan listed companies and highlighted capital structure, financial leverage, and liquidity, to be major influential factors of corporate financial difficulties.

1.1.2 Financial Distress

Financial distress is described as the last stage in which a firm goes into decline and occurs before events such as bankruptcy or liquidation. Evidence has it that globally entities are unprotected from financial distress problems, leading to bankruptcy on most firms. According to Jahur & Quadir, (2012), most prevalent factors that drive companies into bankruptcy is a combination of symptoms and problems. The need to measure and identify whether a company is in financial difficulties led to the origination of the Altman Z score model (1968) followed by several modifications. Altman (1968) categorizes firms into various distress zones in an attempt to predict a firm's financial standing. This includes safe zone ($Z > 2.99$) which predicts that the firm is unlikely to get into financial distress, grey zone ($2.99 < Z > 1.88$) which predicts a high likelihood of a firm getting into financial distress and the distressed zone ($Z < 1.8$) which

predicts that the firm is already financially distressed. With the ability to clearly identify or predict an entity's financial status, stakeholders can take the necessary measures and decisions to avert loss on their value.

Ordinarily, when a firm experiences a situation of tight cash flow that makes it unable to honor financial commitments when they fall due, it is said to be in distress. If the condition is unchecked for long, it can lead the firm into liquidation or bankruptcy. Almeida & Philippon (2007) highlighted that, when under financial distress, suppliers insist on cash payment terms, a firm's market value sharply reduces, and large customers may terminate committed purchases as they expect delayed deliveries. This poses a great risk to stakeholders hence the need to identify if the entity is financially distressed or the probability that it will be distressed soon.
Duffie and Wang (2004) postulates that, a filtering problem arises if the probability of bankruptcy and default cannot be measured predicted. The bankruptcy will intensify depending on the measured distance to bankruptcy. As financial distress levels of different firms may vary depending on the firm-specific challenges and economic conditions, it is prudent for the regulators and firms' management to measure and monitor levels of company distress, impact of various firm specific factors, and develop bankruptcy preventive measures.

1.1.3 Firm Specific Factors and Level of Financial Distress

Numerous research carried out in this field arrived at contradicting findings on the firm specific causes and their effect on financial distress levels. Campbell, Hilscher, & Szilagyi (2005) noted that, when predicting financial failure over broad spheres the most persistent firm characteristics, equity volatility, market-book ratio, and market capitalization become quite significant. Firm characteristics are key pointers to a company's financial stability as they influence a firm's responsiveness to financial obligations and the ever-changing business

environment. A standard structural model of bankruptcy prediction presumes that an entity failure occurs with a significant reduction in assets to a level that is low compared the firm's liabilities (Duffie & Wang, 2004).

Firm specific factors may sway the progression of leverage and corporate earnings which in turn may have multiple influences on a firm's financial health. Whereas some studies find liquidity, leverage, and profitability to be positively related with financial distress, numerous studies conclude that these variables have a negative impact on financial distress.

This study is therefore conducted to explore and examine the individual and combined impact of the selected firm specific factors which have been determined by economic theories and empirical evidence to be influencers of the corporate financial distress levels. The study sought to identify if a causal relationship exists between the selected firm specific factors and financial distress levels, using secondary data and econometric analysis.

1.1.4 Manufacturing Firms in Kenya

Globally, hardly any economy can sustain development when the manufacturing sector is not playing the leading role to sustain development and economic growth. While manufacturing firms have firm characteristics that are important for their operational success, they are faced with constraining factors that may lead to corporate failure if not well managed. Ufo (2015) postulated that, manufacturing companies' profitability turndown, liquidity, leverage, and efficiency is growing fast which is suppressing financial stability of firms. Investments in the manufacturing sector requires heavy capital investment which necessitates the use of debt, uncontrolled leverage and unbalanced capital structure may lead to failure of honoring financial obligations when due which leads to financial difficulties in the long term. Due to the high

inventory turnover, manufacturing firms requires significantly high levels of liquidity which must be well managed to avoid financial difficulties. This factors among others will need to be well managed by manufacturing firms to improve their financial stability. According to Pálinkó & Svoób (2016), financial distress may occur after inappropriate asset allocation, high financial leverage, and liquidity shortage.

The manufacturing sector in Kenya is one of the key drivers of the economy with its contribution stagnating at approximately 10% of the Gross Domestic Product (GDP) Kenya Association of Manufacturers (KAM) (2018). According to Kenya Bureau of Standards (KEBS) (2022), manufacturing sector wage employment increased from 316,800 (2020) to 336,800 (2021) an increase of 6.3% making the sector the third largest employer behind education and agriculture sectors. Even though the sector experienced a growth of 6.9% in 2021 compared to a 0.4% contraction in 2020, there is an alarming declining trend on its contribution to GDP over the past years: 8.9% in 2017, 8.5% in 2018, 7.9% in 2019, 7.5% in 2020, and 7% in 2021. This trend implies that the Kenyan economy is undergoing premature deindustrialization in the backdrop of relative underdevelopment in manufacturing and industries (Were, 2016).

In Kenya, manufacturing is characterized by activities from formal and informal firms. The sector is comprised of a few large formal enterprises mostly dealing with Fast Moving Consumer Goods (FMCG) such as East African Breweries Ltd and Unilever, and many informal businesses inspired by the demand for agricultural and construction equipment. Key regulatory institutions in the Kenyan manufacturing sector includes, KenInvest tasked with the responsibility of providing support to existing investments and facilitating implementation of

new investments, and KEBS mandated to develop and enforce the standards of industrial and manufactured products.

The over 1,000 manufacturing firms in Kenya are tasked with marching the 4th industrial revolution and staying ahead of the global competition. These manufacturing firms certainly experience difficulty that endanger their performance and functioning which includes high input costs and technological challenges which are key ingredients to their success. Visible in the contributions of the informal manufacturing industries, manufacturing firms are putting the right foot forward and the government should match their contributions in supporting the sector realize its optimal potential in contributing to economic growth.

1.2 Research Problem

An entity's viability is strongly believed to be linked with firm specific characteristics as put forward by Altman (1968) which includes profitability, growth, financial leverage, and liquidity. The fact that management of this indicators stands between a company's high performance and bankruptcy, empirical evidence has failed to establish this fact. The need to easily identify the effect of this variables on distress levels have attracted extensive research by several scholars many of them arriving at contradicting conclusions such as Baimwera and Murinki (2014), Wesa & Otinga (2018), and Ceylan (2021).

Kenyan firms have reported an alarming rate of financial distress over the past years. The collapse of three banks in less than a year in 2015 was a landmark event in the banking history that carry immense lessons for bank regulators and risk managers considering other public institutions that are at the verge of collapsing and several other institutions whose struggles have not risen to the limelight. Kenya reported seventeen (17) banks collapsing between

December 1984 to September 2007 in addition to twenty-four (24) financial institutions that also failed within the same period (CBK, Inspectorate Report, 2007). As identified by (Ikpesu, 2019), Nigerian manufacturing companies going into bankruptcy have been more compared to their banking sector counterparts due to unfavorable exchange rate fluctuations, government policies, political unrest, inflation, infrastructural facilities shortage, and inadequate social facilities among others. This is evident from the backdrop of decreased contribution of manufacturing sector to the economy, growing unemployment rates and the economy shift towards importation. The question arises on whether these crises could have been predicted and action taken.

Extensive studies have been done across the world and in Kenya to establish the bankruptcy prediction of firms leading to development of statistical models to assist in prediction of companies experiencing financial distress. Issack Mwangi (1991) carried out a study to predict corporate bankruptcy using price adjusted accounting data. Barasa (2007) investigated evolution of corporate failure prediction models. Samira (2012) researched on the utility of statistical technique in the failure prediction of Nairobi Stock Exchange listed companies. Campbell, Hilscher, and Szilagi (2005) implemented a reduced-form econometric model with an aim of predicting corporate bankruptcies and corporate failure at both long and short horizons. By introducing the use of an aggregate bankruptcy index (ABI), Liao (2016) sought to provide a simplified methodology of measuring financial distress of firms using financial ratios. The Altman Z score model (Altman, 1968) being a financial distress prediction model widely accepted, has been modified severally in the quest to improve it by different scholars with a need to assess various determinants of financial distress.

A contextual research gap has been idented to exist as research conducted on financial distress factors and manufacturing firms were done in other economies and not in Kenya. Ikpesu (2019) researched on financial distress determinants among Nigerian manufacturing sector entities using modified ordinary least squares. Mueller, Kumar, Shan & Roscigno (2021) assessed the causes of financial difficulties (leverage, profitability, and liquidity) of manufacturing companies in India. Ufo (2015) investigated the financial distress determinants of Ethiopian manufacturing companies.

In addition, a knowledge gap has also been identified to exist as there are no studies available to support investors in identifying and managing the firm specific variables that affect financial distress of manufacturing firms in Kenya. The research gaps identified underscores the need to reverse the negative economic effects experienced due to underperforming manufacturing sector in the country as evidenced in the increasing unemployment levels and decreasing contribution to the GDP from manufacturing sector. This study therefore sought to examine individual factors drawn from the Altman Z-score model which cause financial difficulties and their influence magnitude on distress levels of manufacturing companies in Kenya. This study attempted to answer the research question, what are the firm specific factors affecting financial distress among large manufacturing firms in Kenya?

1.3 Research Objective

The study's principal aim was to establish the effect of Firm Specific Factors and financial distress among large Manufacturing Firms in Kenya.

The specific objectives were;

i. To examine the effect of profitability on level of financial distress of large manufacturing firms in Kenya
ii. To evaluate the effect of leverage on level of financial distress of large manufacturing firms in Kenya
iii. To assess the effect of liquidity on level of financial distress of large manufacturing firms in Kenya

1.4 Value of the Study

Results of this research provide insight for the policy makers in Kenya as financial distress continues to impact negatively on the country's economic condition. The Capital Markets Authority (CMA) is the organization tasked with the mandate to license, supervise, and monitor market intermediaries' activities which include the central depository system and stock exchange. CMA will therefore find value in this study by being able to assess financial distress levels of the listed manufacturing firms and taking precautionary measures.

For seamless operations and assured existence of corporates, shareholders and managers of manufacturing firms must continuously evaluate the firm specific factors and selected variables when making financial decisions and design suitable policies that ensure acceptable levels of leverage, liquidity, and profitability. The study's outcome is invaluable to scholars and researchers in the field of financial distress and insolvency as it gives acumens on how the selected macroeconomic factors affect financial distress levels. It lays a foundation for further studies in the subject and contribute to the existing literature on the subject.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This segment outlines the foundational theories whereby the firm specific factors and level of financial distress is based. Discuss and review of theories was covered, and empirical evidence outlined for answering the research question.

2.2 Theoretical Review

Applicable theories that explain the link between Firm Specific Factors and Level of Financial Distress are examined in this section. Theories underpinning this study are the Wreckers Theory, Trade-off Theory, Credit Risk Theory, Pecking Order Theory and Agency Theory. The chapter provides an empirical review and an overview of the study variables.

2.2.1 Wreckers Theory

Contributing to the literature on financial distress, Campbell, Hilscher and Szilagi (2005) implemented a reduced-form econometric model with an aim of predicting corporate bankruptcy and failure at both long and short horizons. The wreckers' theory endeavors to expound on the rewards to the shareholders from a financially distressed entity. It tries to describe a scenario of benefiting from a ship wreckage (Nyamboga, Omwario, Muriuki & Gongera, 2014).

The theory argues that stocks with an increased likelihood of failure have a higher chance of delivering abnormally low average returns (Campbell, Hilscher & Szilagi, (2005). The theory paints an illusion of an entity making losses, experiencing continuous negative disturbance, and gravitating towards a financial distress state. If the firm is underperforming, uninformed

investors will tend to exit leaving equity to be owned by insiders with an upper hand of accessing and understanding financial information related to the firm. With the increasing conditional likelihood of bankruptcy and liquidation, it becomes less advantageous for the owners to leave valuable resources in the firm. (Kalckreuth, 2005). The informed insiders will then extract returns on their investment in other ways other than receiving a cash dividend payout.

This theory is relevant to the study as most bankruptcy situations are as a result of investors' actions or omission to take action in dare situations due to their own individual interest. According to Kalckreuth (2005), equity holders are not only assured of receiving dividends from their investment, but they are also assured of controlling capabilities which enable owners to obtain non-cash returns. The wrecker's theory of financial distress tries to legitimize the non-cash benefits to shareholders of financially distressed firms. Rewards of controlling a firm comprise all non-cash rewards. Even though not necessarily illegal ones of which even though they do not appear in the company records, they are economical and comparable to dividend hence priced as dividend by other market plays while forming a logical value anticipation. This theory may not be entirely relied due to the fact that when the company nears bankruptcy, it is the creditors who take over as residual owners and equity holders may not have the opportunity to benefit from the wreck.

2.2.2 Trade-off Theory

The Trade-off theory of capital structure was developed by Modigliani & Miller (1963). It provides insight on the debt financing & equity financing proportions to be used by considering the costs and benefits. It postulates the best capital structure to be a trade-off between interest tax shields and cost of financial distress. As noted by Jahanzeb, Rehman, Bajuri, Karami, &

Ahmadimousaabad (2013), firms achieve optimal capital structure by accepting the finance cost associated to equity and debt in anticipation of the associated advantages.

This theory argues that use of debt raises a firm's value up to an optimal level where continuous debt use is unfavorable thus causing a decline in a company's value. Continuous use of debt beyond this point increases both the bankruptcy and agency cost leading to financial distress. This argument is highly criticized and contradicts findings of other studies which concluded that most profitable firms are likely to borrow less (Fama and French, 2002). The theory supports this study by providing insight on how tax shield benefit can be maximized in improving liquidity through debt while cautioning against the negative effect of excessive borrowing which may cause corporate failure. Thus, the trade-off theory warns against the effects of soared borrowing levels on financial leverage of firms (Wesa & Otinga, 2018).

2.2.3 Credit Risk Theory

Credit risk is defined as the likelihood of a loss due to a borrower's default on debt repayment or failure to honor contractual obligations. Introduced by Merton (1974), CRT explains the financial distress to a firm caused by its inability to adequately manage their credit risk exposure. Corporates have a contractual obligation to perform and when they fail to honor these obligations, there is risk of creditors terminating credit terms for future transactions hence liquidity problems or creditors may take legal action for winding up the company due to bankruptcy. A firm which sells on credit may also face credit risk when there is failure on debt collection which destabilizes earnings potential leading to a strain in fulfilling debt commitments.

This theory is relevant as it will help in understanding the effect of credit on liquidity of firms. Companies that fail to adequately manage their credit risk exposure are unprotected from financial distress because of their inability to fulfill their current financial obligations when they fall due (Wesa & Otinga, 2018). The Merton credit risk model have also been highly criticized that it under predicts credit risk spread. As proposed by Geske (1977), this can be corrected through endogenous defaults.

2.2.4 Pecking Order Theory

Developed by Myers (1984), the Pecking Order Theory explains that firms have an ideal ranking of financing decisions and that a company would first exhaust internal financing sources in form of retained earnings before issuing debt and then turning to equity as the last option. The POT elucidates the ranking order of financing options of firms (Jahanzeb, Rehman, Bajuri, Karami, & Ahmadimousaabad, 2013). Further, the POT argues that asymmetric information between firm insiders and external parties, and costs and benefits of external financing are less important compared to the costs of issuing new securities.

The theory argues that internal funding sources are preferred compared to external sources which includes equity and debt since investors prefer to maintain the company's stability and value. Increased use of external capital reduces firm value and increase chances of financial distress. Therefore, the Pecking Order Theory explains the benefits of a target capital structure which reduces financial distress effects. On the other hand, the theory may not be applicable in practice as it limits companies to few funding sources. As the world experiences changes in financing aspects, the old theory has not been updated to include upcoming financing methods such as fundraising.

2.2.5 Agency Theory

Agency theory studies the problems and solutions emanating from a principal and agent relationship in the context of conflicting interest between the parties. Further, the theory explores the behavior of an entity from the perspective of contracting relationships between various parties. Jensen & Meckling (1976) refers an agency relationship as an arrangement which the principal delegates specific duties to an agent who carries out agreed activities on their behalf. To limit divergence from his interest, the principal may incur agency costs through incentives or monitoring.

From an agency perspective, managers and administrators are put in place to make decisions on behalf of shareholders. With information asymmetry, it is hard and costly to control an agent's behavior as they are advantaged on information access compared to the principal (Tan, 2014). In reference to the recent bankruptcy of financial institutions in Kenya linked with insider borrowings and non-performing loans, Agency theory is helpful in assessing the financial distress confronting commercial banks in Kenya. This could further explain how biased decisions of managers adversely affects the interest of shareholders and financial health of the firms. In reality, an agency problem may not occur in instances of owner-managers. Also, agency costs may be managed by designing competition, incentive plans, and executive labor markets to remove the self-interest of agents (Jensen and Meckling, 1976).

2.3 Determinants of Financial Distress

Extensive research has been carried out globally on financial distress and its determinants. The key factors identified for this study that influence the level of financial distress are Liquidity, Profitability, Leverage, Firm Size, and Asset Structure.

2.3.1 Liquidity

Liquidity is availability of sufficient liquid assets in a company thus the ability to discharge short term obligations. According to Pranowo (2010), liquidity refers to the ease of converting current assets into cash so as to offset the obligations of an entity. Liquidity is measured by dividing current assets by current liability so as to identify the number of times current assets available can cover short term obligations.

Liquidity helps a firm in establishing effective operations hence the importance of maintaining maximum levels of liquidity to fulfill commitments when they fall due. On the other hand, excess liquidity is an opportunity cost on the lost revenue if the funds were otherwise invested into revenue generating opportunities.

Therefore, cash availability is an important component for any firm as a deficiency in liquidity may lead to default on obligations whereas holding unnecessarily high cash translates to a business not fully utilizing its financial capabilities. If left uncorrected, the situation can erode potential gains in the long term if the funds had been invested.

2.3.2 Profitability

Profitability refers to the return on investment and is measured by return on equity (ROE). This is therefore a key determinant of financial distress as it directly impacts a firm's ability to honor financial obligations and manage market competition.

Companies that record high debt levels, low market capitalization, low profitability, low past stock returns, low cash held, high volatile past stock returns, lower prices per share, and high market-book ratios, have a high probability of failure and filing for bankruptcy (Campbell,

2005). According to Campbell (2005), increased profitability of a firm would lead to a reduced probability of corporate failure by 44% of its initial value.

2.3.3 Financial Leverage

Financial leverage is defined as the use of fixed cost capital or debt when undertaking investment as an attempt to increase shareholder value. Leverage is presented as total debt divided by equity. Increases in debt is accompanied by an increased potential for default and bankruptcy. From existing literature, leverage is viewed as a fundamental explanatory variable in assessing financial distress costs. However, the link between leverage and financial distress continues to be challenged with different researchers making varying conclusions.

According to Ahmad (2013), increased leverage causes an increase in corporate financial distress. In contrast, Kristanti (2016) noted that a negative relationship exists between leverage and financial distress. Baimwera and Muriuki (2014), concluded that no significant relationship between leverage and financial distress, while Nahar (2006) indicates that increased liquidity causes corporate financial distress to decrease.

2.3.4 Asset Structure

A company's asset structure is influenced by the extent to which a corporation chooses to hold its assets. An asset structure depicts to the form in which a firm may choose to maintain its assets investments (Pouraghajan, Malekian, Emamgholipour, Lotfollahpour & Bagheri, 2012). Assets can be of two categories: physical or non-physical. Physical assets are the tangible assets which include plant, equipment, and property. Non-physical assets are the impalpable assets such as copyrights and intellectual property.

According to Maina & Ishmail (2014), firms with low tangible asset base should borrow less as they lack the ability to honor financial commitments consequently increasing chances of financial distress. Tangible assets are key in production which leads to sales, profitability, and reduced risk of financial distress.

2.3.5 Firm Size

The firm's size is largely measured by the amount of capital investment in an entity which in turn affects production. The firm size is a key component of financial stability as it indicates the availability of financial resources to fulfill contractual obligations and keep pace with market competition. Firm size influences financial performance as it determines capacity of a firm to adopt advanced technologies which increases output and reduce costs. Size of a firm has a positive influence on sales growth and consequently the firm's profitability. (Lun & Quaddus, 2011).

Large firms have the advantage of an expanded financial capacity which enables them to diversify investments and tap to changes in technology which helps in averting financial instability. On the other hand, small firms enjoy efficiency in processes and quick decision making which may translate to profitability. An increase in firm size may result to a rise in agency problems and negatively affect financial stability. According to Chancharat (2008), firm size is positively related to financial distress. Contrary, Clere (2005) argue that the opposite is true. Kristanti (2016) concluded that company size has no influence on corporate distress.

2.4 Empirical Review

Several corporate failures of reputed institutions throughout the world in the recent past necessitated for investigations on the firm specific causes of financial distress leading to bankruptcy. While examining factors that determine corporate financial distress of public listed companies at the Nairobi Securities Exchange, Baimwera and Murinki (2014) utilized a descriptive research design and adopted univariate and multivariate distress prediction approaches on listed companies over a three-year period of 2007 to 2010. The investigation found that leverage and liquidity have an insignificant impact on determination of corporate financial distress while profitability and growth, had a statistically significant positive impact on financial distress. The investigation also established that Altman Z-score prediction model is a significant distress predictor. The study found that leverage and liquidity had no significant impact on financial distress.

While assessing the determinants of distance to corporate bankruptcy among listed firms in NSE, Kipngetich, Tenai & Tarus (2017) adopted the explanatory research design and census done on the 45 listed firms for a six-year period from 2018-2013 using descriptive statistics to analyze data and inferential statistics to test the hypothesis. The findings show that liquidity had a significant positive effect on distance to corporate bankruptcy, while profitability had a significant negative effect on distance to corporate bankruptcy. This finding partially agrees to the findings of Ceylan (2021).

Establishing the financial distress determinants among listed firms in Kenya, Wesa & Otinga (2018) adopted the Altman Z score model to conduct a descriptive survey on the 65 listed firms. The findings established that liquidity has a significant negative effect on financial distress, capital structure and financial leverage has a significant positive effect on financial distress,

while asset structure has an insignificant positive effect on financial distress which agrees to the finding of Ikpesu (2019) and Ndinda (2021).

Ndinda (2021) investigated on the firm characteristics effect on distress of listed non-financial companies in the NSE. The study adopted the Altman Z-Score model in measuring financial distress and employed a descriptive approach in analyzing financial data from published financial statements. The research concluded that, liquidity and management efficiency have a significant negative effect on financial distress, leverage has a significant positive impact on financial distress, while firm size has no significance on corporate financial distress.These findings contradict those of Ufo (2015).

Investigating the financial distress determinants among Ethiopian manufacturing firms, Ufo (2015) analyzed data using General Least Square (GLS) regression model with debt service coverage used as a measure of financial distress. The findings reveal that, efficiency, liquidity, and profitability, have statistically significant positive impact on debt service coverage. On the contrary, leverage has negative and significant influence on debt service coverage. The findings partially agree with the results of Muller, Kumar, Shan, & Roscigno (2021).

Investigating the determinants of financial distress of firms in the Nigerian manufacturing sector using the Altman Z score model, Ikpesu (2019), explored the fully modified ordinary least squares on annual times series data of eighteen manufacturing firms listed on the Nigeria Stock Exchange. Findings of the study revealed that leverage has a positive relationship with financial distress, while liquidity, profitability, firm size, share price and revenue growth all have an inverse relationship with financial distress which contradicts to the findings of Kipngetich, Tenai & Tarus (2017).

Investigating the numerical link of both firm-specific and macroeconomic factors on financial distress of Turkish SMEs, Ceylan (2021) did a study on the firms listed in the Borsa Istanbul SMEs industrial index. The study adopted Generalized Method of Moments (GMM) estimator and employed the Springate S-score model as the dependent variable in measuring financial distress risk. The findings showed that all firm specific variables, quick ratio, current ratio, financial leverage, asset turnover, return on assets, and debt ratio have statistically significant positive impact on financial distress. On the other hand, macroeconomic variables findings concluded that inflation has a statistically significant negative impact on financial distress while both economic growth and exchange rate have no impact on financial distress.

To bridge the knowledge gap on the determining variables of financial distress among retail companies in Indonesia, Dirman (2021) undertook quantitative research and analyzed sampled secondary data from financial records of publicly listed entities between 2015 -2019 using multiple linear regression tests. The study found that, leverage has a statistically significant negative effect on financial distress, profit margin has a statistically significant positive effect on financial distress, and operating capacity has no influence on financial distress.

While investigating the determinants of financial difficulties in the Indian manufacturing sector, Muller, Kumar, Shan, & Roscigno (2021) analyzed financial statements of 25 companies for a period of 10 years using Altaman's Z score as an endogenous variable to measure financial difficulty and concluded that, liquidity, firm size, profitability, and leverage are statistically positively significant to financial difficulties. Review of the above literature points to the presence of a significant knowledge gap as there is no available literature on firm specific factors and level of financial distress of manufacturing firms in Kenya. As observed,

several studies arrived at contradicting findings while investigating similar variables' effect on financial distress hence the motivation for this study to reach a consensus.

2.5 Conceptual Framework

The figure below shows a conceptual model which brings out the expected link between study variables. The explained variable identified is Financial Distress while the explanatory variables will be Liquidity, Profitability, and Leverage.

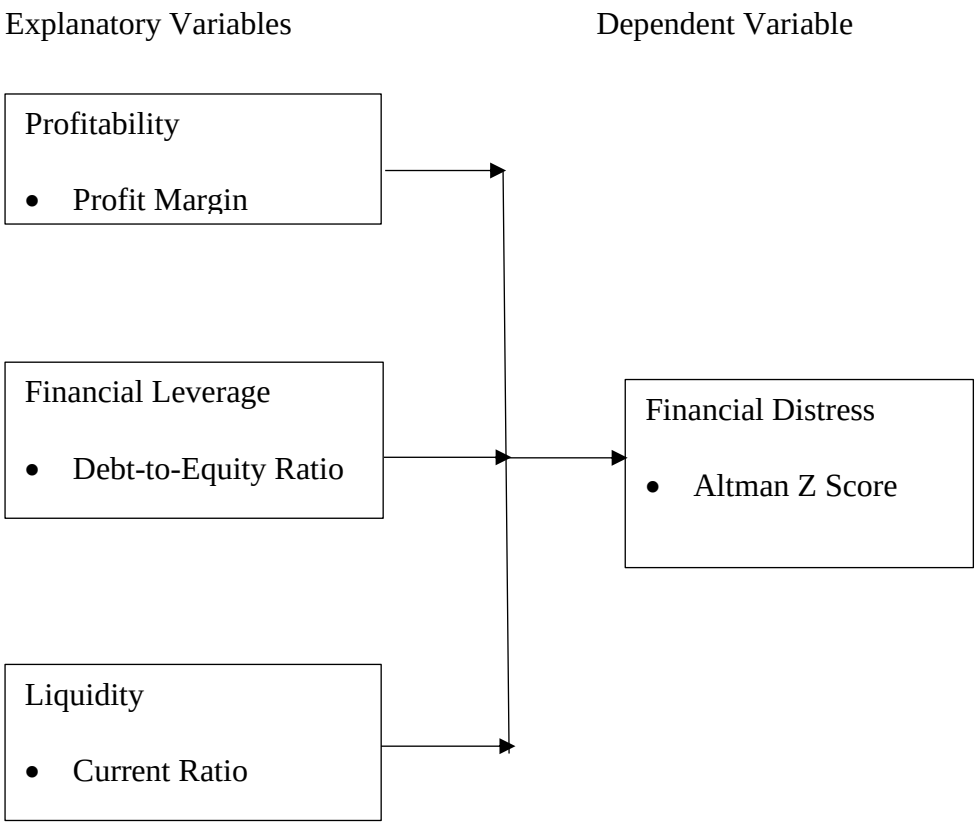

Figure 2:1 Conceptual Model

2.6 Summary of Literature Review

Numerous theoretical frameworks will be explored to try and explain firm specific characteristics that determine the level of distress among manufacturing entities. The selected

theories namely, Wreckers Theory, Trade-off Theory, Credit Risk Theory, Pecking Order Theory and Agency Theory gives important insight on the firm specific factors and their link to corporate financial distress. Key variables identified for this study include liquidity, financial leverage, and profitability. Empirical research carried out has not covered how these variables impact the level of financial health of Kenyan manufacturing firms.

The extant review of existing literatures shows contrasting findings on the impact of liquidity, profitability, firm size, financial leverage, and asset structure on financial distress. The absence of consensus on how these variables affect financial distress levels gives room for further study to establish the correct position. Also, no research has been done to pin down the impact of these variables on the financial distress levels of manufacturing entities in Kenya. Hence, the study sought to bridge the gap by identifying the extent to which the selected variables explain the level of financial stability among Kenyan manufacturing firms.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This segment outlines the approach that the current study utilized. These comprises, research design, population, Sample, data collection, diagnostic tests, analysis, and presentation of reviewed data. The phases and steps to be followed in answering the research question are elaborated.

3.2 Research Design

Creswell (2003) elaborates that a research design is an arrangement, plan or framework utilized to get solutions to the research problem. Additionally, Ngumi (2013) referred research design to a guideline that outlines the process of undertaking research. The study adopted a descriptive research design as it is best suited to analyze an existing situation and describe relationships between variables. The design provides the data collection basis to describe and evaluate financial distress levels of manufacturing companies in Kenya. The goals of a descriptive research are recognizing current conditions, investigating instant characteristics of an event, needs, identifying characteristics of a problem and explaining the relationship of characteristics and traits (Bajpai & Signh, 2011).

3.3 Population of the Study

The target population of this study included the 1045 manufacturing companies in Kenya as of December 2021, as revealed by the Kenya Association of Manufacturers (KAM).

3.4 Sample

Convenience sampling, a non-probabilistic type of Sampling, was used in the current study. The study population will be divided into different categories of manufacturing subgroups namely, FMCG, Textile, Metal, Cement, Plastic, Furniture, and Chemicals Industries. Large manufacturing firms in each category were chosen. The sample ultimately derived for the current study was 22 large manufacturing firms based in each category.

3.5 Data Collection

This study mainly relied on quantitative and secondary data collection methods. Secondary data was utilized due to its objectivity and not susceptible to undue influence by the researcher. According to Williams (2006), secondary data must be adequate, suitable, and reliable. The research compiled adequate and reliable quantitative panel data which enable studying of a behavior over time and across space (Baltagi, 2005).

Relevant financial data: Sales, EBIT, Current Assets, Current Liabilities, Total Debt, and Equity were obtained by analyzing financial statements of the sampled manufacturing companies over a ten year period from 2012 to 2021. Published financial statements of manufacturing firms were obtained from the NSE, KNBS, Dun & Bradstreet, and African Financial databases.

3.6 Diagnostic Tests

Diagnostic tests enabled the researcher to identify the success of model employed to examine soundness and description of interaction between the predicted variable; financial distress level and predictor variables; liquidity, leverage, and profitability. Diagnostic tests that were utilized in this research included;

3.6.1 Multi-collinearity Test

This indicates that there is a type of very high inter-correlation between the variables that are independent. Variables that virtually have the same absolute correlation coefficient provide information that is comparable, and in order to eliminate the issue of multicollinearity, one of these variables should be eliminated in favor of the other. Another way to eliminate multi-collinearity is by standardization of the variables exhibiting multicollinearity. According to Guajarati (2004), correlation coefficients that are lower than 0.8 demonstrate that the issue at hand is not significant and ought to be disregarded. On the other hand, if the correlation coefficient is larger than 0.8, it shows that there is a substantial degree of multi-collinearity and that it has to be corrected. In this case, the adjustment is necessary. The Variance Inflation Factor (VIF) were employed for the multi-collinearity investigation. Variables that are responsible for multicollinearity were standardized.

3.6.2 Hausman Specification Test

The Hausman test will be conducted in order to determine whether or not we should use a model with random or fixed effects before making a final decision. This test's working premise is that the random effect model is superior than alternative models' fixed effects from an analytical standpoint. After the Hausman test is performed, a determination is made. The choice between using a model with random effects or one with fixed effects is made. As a consequence of the random effects hypothesis, which stipulates that the interference term has no relationship with the predictor components, it is conceivable for time-invariant variables to play the function of control variables. The idea of random effects paves the way for this to be feasible. In a word, they make it feasible to reach generalizations that extend beyond the scope of the sample that was used in the modeling process. In addition, Cooper and Schindler (2017) state that in the case of fixed effects models, the researchers want to investigate the causes of the

changes that take place inside an entity. The null hypothesis for the Hausman test is that there is no association between the unique disturbances (μit) and the regressors. This was determined by testing whether or not there is a correlation between the two. The Durbin–Wu–Hausman method is going to be used throughout the test. In the event that the p-value is lower than 0.05, the null hypothesis should be rejected (Khan, 2008).

3.6.3 Normality Test

It is common practice to do a normality test in order to determine whether or not the standard errors are skewed in accordance with the conditional mean (Chmelarova, 2007). The Shapiro-Wilk test statistic was used for the examination. The skewness and kurtosis of a normal distribution are both zero, and they are close to three.

To successfully carry out a normalcy test, it is first essential to establish the null premise. Since the alternative premise asserts that the data did not originate from a normal distribution, the null premise must hold. If the J-B value is high, this suggests that the standard errors do not follow a normal distribution. On the other hand, if the value is low, the researcher should reject the null hypothesis since the data follows a normal distribution (Zikmund et al., 2012). Standardization is required for the data because it does not conform to the normal distribution.

3.6.4 Stationarity Test

This statistical feature guarantees temporal and spatial stability in the joint distribution of a collection of variables chosen at random for use in a series (McKenzie, 2011). If the sample period is changed, the average of a data set with a stationary series will not change; however, the mean of a data set with a non-stationary series will vary, which will lead to an

asymptotically skewed distribution in the case of panel data. This might result in false regression, which is characterized by non-stationary and independent time-series components, high values of the coefficient of determination, and stunted Durbin-Watson scores. In other words, this kind of regression is not accurate (Saunders et al., 2009). The data which will not be stationary necessitated first differencing transformation.

3.6.5 Heteroscedasticity Test

In order to determine whether or not there will be a consistent change in the variance of the standard error term, a test of heteroscedasticity will be carried out. If the results do not correspond to the assumption, then the assumption has been shown to be incorrect. To achieve this, the statistician will use the white test, in which the total number of errors is represented as a function of the predictors included in the model and then regressed using the least ordinary square approach. This will ensure that the desired results are obtained. It is to be anticipated that there will be no heteroscedasticity in the model, in which case all of the coefficients will be equal to zero (Pesaran, 2004). When heteroscedasticity was discovered, robust standard errors were applied.

3.6.6 Autocorrelation

It is presumable that the linear regression model will have no autocorrelation (Roodman, 2006). It's possible that the autocorrelation will turn out to be positive or negative. If the value is positive, this shows that the standard errors are low, which in turn suggests that the estimates provided by the predictors are more accurate than they really are (Wang, 2017). The researcher has a tendency to disagree with the null hypothesis because they believe it to be false. Errors in the autocorrelation function lead to inefficient coefficients, which in turn lead to inaccurate forecasts.

The Durbin-Watson d-statistic was used in this research of autocorrelation since autocorrelation is analogous to cross-dependence in panel data. This resemblance serves as a driving force for the implementation of this exam. If the results of the test are determined to be statistically significant, this would provide evidence that there is autocorrelation, which is also known as cross-sectional dependence (Pesaran, 2004). Data that was found to have cross-sectional dependencies had their analysis concluded by lag transforming the dependent variable once this discovery was made.

3.7 Data Analysis

Descriptive statistical techniques were utilized to analyze quantitative data collected with the help of STATA. Correlation analysis over a period of 10 years was done to relate the explained variable; financial distress level to the explanatory variables; liquidity, leverage & profitability using Pearson product-moment correlation coefficient.

3.7.1 Analytical Model

The Altman Z score was employed as the explained variable in evaluating distress levels of manufacturing entities in Kenya while identifying distribution of companies across different distress categories, Safe Zone, Gray Zone, and Distress Zone. Baimwera & Muriuki (2014) noted that Altman Z-Score is a linear model combining weighted accounting ratios. Altman (1968) developed the original prediction model using five key financial ratios: solvency, leverage, profitability, activity, and liquidity to determine the likelihood that a manufacturing company is close to bankruptcy.

$$Z = 1.2x^1 + 1.4x^2 + 3.3x^3 + 0.6x^4 + 1x^5$$

Where:

Z = Altman Z-Score,

x^1 = Working Capital / Total Assets

x^2 = Retained Earnings / Total Assets

x^3 = Earnings Before Interest & Tax (EBIT) / Total Assets

x^4 = Market Capitalization / Total Liabilities

x^5 = Revenues / Total Assets

- SAFE ZONE ($Z > 2.99$) : An entity is in Safe Zone if the Altman Z-Score is over 2.99 and the company is unlikely to head into insolvency and file for bankruptcy soon.
- GREY ZONE ($1.81 < Z < 2.99$) : A firm is said to be in the Grey Zone if the Altman Z-Score is between 1.81 and 2.99, the company is predicted to have a moderate probability of bankruptcy soon.
- DISTRESS ZONE ($Z < 1.81$) : An entity is in distressed zone if the Altman Z score is less than 1.81, and that the entity is likely to head into insolvency and file for bankruptcy soon.

In testing the hypothesis proposed in this study, multiple regression was employed to test predictor and predicted variables relationship. Regression model for analysis is as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + e$$

Where:

$Y_{it} = P$redicted variable (Financial distress),

β_0 is the regression constant,

β_1, β_2, and $\beta_3$are the coefficients of predictor variables

X_{1it} = liquidity,

X_{2it} = financial leverage

X_{3it} = profitability.

e = error term

Table 3:1 Variables operationalization

Variable	Type	Operationalization	Measurement	Scale	Hypothesis
Financial Distress Level	Dependent	Z-Score	Z =1.2X1+ 1.4X2 + 3.3X3 + 0.6X4 + 1X5	Zone	Z > 2.99 1.81<Z<2.99 Z < 1.81
Leverage	Independent	Debt to Equity Ratio	Total Liabilities/Total Equity	Ratio	Positive/negative
Liquidity	Independent	Current Ratio	Current Asset/Current Liabilities	Ratio	Positive/negative
Profitability	Independent	Return on Assets (ROA)	Earnings after Tax/Total Assets	Ratio	Positive/negative

3.7.2 Significance Tests

The correlation coefficient (r) were calculated and utilized to ascertain the orientation and significance of the linear relationship between output variable; financial distress level and each of the given input variables. Specifically, the significance values of the correlation tests were used to make inferences. The coefficient of determination (R^2) was established to quantify the

variability in the output variable as described by the predictor variables. The significance value in the Analysis of Variance was used to test whether the model significantly affects the dependent variable and therefore it can be utilized in predicting the dependent variable. In the model coefficients, significance values were used to analyze the significance of each predictor variable to influence the response variable. The critical significance level (α) employed in this study was the 5% significance level (95% Confidence Interval).

CHAPTER FOUR

DATA ANALYSIS, RESULTS, AND DISCUSSION

4.1 Introduction

In this chapter, the data analysis, presentation, as well as results and interpretation of findings is highlighted. This chapter is classified into segments, which include; descriptive statistics, inferential statistics, and interpretation and discussion of the research findings. Data analysis was carried out using Stata Version 14 software. Tables were employed to interpret the outcome.

The study utilized unbalanced panel data because the data all the 10 years were not available for all the companies because they did not publish the financial statements for some years, or in the case of Mumias Sugar, it was delisted in 2018. As a result, this provided a dataset with 215 data points as opposed to the 220 data points anticipated.

4.2 Descriptive Analysis

In the current study, a descriptive research design was utilized as it enables generalization of the study findings to the population; consequently it allows the variables to be analyzed and related. The descriptive analysis utilized in the current study includes measures of central tendency that entail the mean and the median, while measures of dispersion such as the minimum and maximum statistic, range, standard deviation, and variance, were employed. Measures of symmetry such as and Kurtosis and Skewness were also utilized.

Table 4.1: Altman Z Score Descriptive Statistics

	Percentiles	Smallest		
1%	-2.35256	-6.1029		
5%	-0.38948	-2.39792		
10%	0.250813	-2.35256	Obs	215
25%	1.526581	-2.25916	Sum of Wgt.	215
50%	3.083043		Mean	2.768786
		Largest	Std. Dev.	2.032318
75%	3.977638	7.054107		
90%	4.800648	7.168252	Variance	4.130315
95%	6.089525	7.58524	Skewness	-0.17997
99%	7.168252	11.33337	Kurtosis	5.34799

Findings in Table 4.1 show that the highest value for the Altman Z Score of the large manufacturing firms is 11.33 and the lowest value is -6.10. The mean Altman Z Score was 2.77 and the standard deviation value points to lack of consistency in the Altman Z Score of ±2.03. The other measure of central tendency, which entailed the median, was 3.08. The variance was 4.13. The data in the series is not normally distributed because it has a kurtosis statistic lying outside the range of -3 to +3. The mean and median Altman Z Score of the manufacturing companies was 2.77 and 3.08 respectively. The mean implies that the large manufacturing firms are generally in the grey zone while the median implies that the large manufacturing firms are generally in the safe zone. Thus, the companies are not likely to be headed towards bankruptcy. Only firms below the 25^{th} percentile are below the Altman Z Score's cut-off of 1.8. Thus, only about 25% of the large manufacturing firms are likely to be headed towards bankruptcy.

Table 4.2 show that the highest liquidity value of large manufacturing firms is 16.87 and the lowest value is 0.03. The mean liquidity was 2.72 and the standard deviation value depicts variability in liquidity of ±2.66. The median which is a measure of central tendency, was 1.65. The variance was 7. The data in the series is not normally distributed because it has a skewness

statistic that lies out of the range of -0.8 to +0.8 and it also has a kurtosis statistic lying outside the range of -3 to +3.

Table 4.2: Liquidity Descriptive Statistics

	Percentiles	Smallest		
1%	0.148626	0.029041		
5%	0.278216	0.109292		
10%	0.717616	0.148626	Obs	215
25%	1.088152	0.176521	Sum of Wgt.	215
50%	1.646308		Mean	2.716866
		Largest	Std. Dev.	2.645996
75%	3.634301	11.22281		
90%	6.138639	11.70054	Variance	7.001296
95%	8.436227	12.40979	Skewness	2.071315
99%	11.70054	16.86924	Kurtosis	8.113608

The mean and median liquidity ratio of the manufacturing companies was 2.72 and 1.65 respectively. The mean showcases that the manufacturing firms do not have a good current ratio. However, the median displays that the manufacturing firms have a good current ratio. Table 4.2 finally displays that firms below the 25^{th} percentile and firms above the 75^{th} percentile do not have a good current ratio. Thus, only about 50% of the manufacturing firms have a good current ratio. A good current ratio should lie between 1.2 and 2.

Table 4.3 findings show that the highest value for leverage ratio of the manufacturing firms is 568.2 and the lowest value is -168.28. The mean leverage ratio was 3.6 and the standard deviation depicts variability in liquidity of ±40.58. The measures of central tendency, which include median, and variance was 0.65 and 1,646.38 respectively. Normal distribution of data failed because it has a skewness statistic that lies out of the range of -0.8 to +0.8 and it also has a kurtosis statistic lying outside the range of -3 to +3. Mean and median of liquidity ratio of the manufacturing companies was 3.6 and 0.65 respectively.

Table 4.3: Leverage Descriptive Statistics

	Percentiles	Smallest		
1%	-3.19847	-168.281		
5%	0.120227	-6.04395		
10%	0.172671	-3.19847	Obs	215
25%	0.329495	-2.82298	Sum of Wgt.	215
50%	0.648625		Mean	3.603168
		Largest	Std. Dev.	40.57562
75%	1.85959	25.26873		
90%	4.389475	27.45001	Variance	1646.381
95%	6.024985	31.8421	Skewness	12.26595
99%	27.45001	568.1991	Kurtosis	177.5095

The mean showcases that the manufacturing firms' general solvency situation is a cause for concern. However, the median displays that the manufacturing firms' solvency situation is good. Table 4.3 finally displays that firms below the 50^{th} percentile have a good solvency situation. Firms between the 50^{th} and 75^{th} percentile are risky while the solvency situation of firms above the 75^{th} percentile is a cause for concern. Thus, about 50% of the manufacturing firms have a good solvency situation, 25% are risky, while another 25% have a solvency situation which is a cause of concern. By industry standards, a leverage ratio that is less than 1 is considered good. However, a leverage ratio that is greater than 1 may result an enterprise to be classified as a high-risk investment by potential investors.

Table 4.4 findings shows the highest value for ROA of the manufacturing firms is 36.73% and the lowest value is -102.21%. The mean ROA was 2.16% and the standard deviation value shows variability in ROA of ±1.64%. Central tendency measures which included median, was 3.8%. The variance was 2.7%. The data in the series is not normally distributed because it has a skewness statistic that lies out of the range of -0.8 to +0.8 and it also has a kurtosis statistic lying outside the range of -3 to +3.

Table 4.4: Profitability Descriptive Statistics

	Percentiles	Smallest		
1%	-0.6937	-1.22138		
5%	-0.21014	-0.96223		
10%	-0.11104	-0.6937	Obs	215
25%	-0.00212	-0.5032	Sum of Wgt.	215
50%	0.03803		Mean	0.021592
		Largest	Std. Dev.	0.164185
75%	0.08949	0.309661		
90%	0.145218	0.318208	Variance	0.026957
95%	0.219222	0.344374	Skewness	-3.51095
99%	0.318208	0.36727	Kurtosis	24.45225

The mean and median ROA of the manufacturing companies was 2.16% and 3.8% respectively. The mean and median showcases that the manufacturing firms generally do not have a good ROA. Table 4.4 finally displays that firms below the 50th percentile do not have a good ROA. Firms above the 50th percentile have a good ROA and firms above the 95th percentile have a great ROA. Thus, 50% of the manufacturing firms do not have a good ROA, but however, 50% of the manufacturing firms have a good ROA with 5% of them having a great ROA. Generally, an ROA of 5% or better is typically considered good, while an ROA of 20% or better is considered great.

4.3 Correlation Analysis

Correlation usually refers to the relationship existing between two variables. Therefore, the association between the two variables may vary between being a strong negative correlation to a perfect positive correlation. Analysis method employed in order to identify the association between the explanatory variables utilized in the study and the financial distress of the manufacturing firms is Pearson correlation. The study employed a 95% confidence interval level and a two-tailed test utilized. This is illustrated in Table 4.5.

Table 4.5: Correlation Analysis

	Altman Z Score	Liquidity	Leverage	Profitability
Altman Z Score	1			
Liquidity	0.6162*	1		
	0.0000			
Leverage	-0.1274	-0.0294	1	
	0.0623	0.6678		
Profitability	0.5527*	0.1908*	0.0082	1
	0.0000	0.005	0.9052	

As displayed in Table 4.5, there is a significant correlation amongst liquidity and profitability each with financial distress the 5% significance level. The findings show both are positively significantly correlated with financial distress. However, the study findings in Table 4.5 revealed that leverage is not significantly correlated at the 5% significance level to financial distress.

4.4 Diagnostic Tests

Before the regression analysis was conducted, a test was determined to ascertain if the data collected for the study meets certain set conditions in order to achieve Best Linear Unbiased Estimates (BLUE). The current study utilized the homoscedasticity, normality, autocorrelation, and multiple-collinearity tests to ascertain BLUE. The Shapiro-Wilk test was utilized to test normality of data used in the study. The Breusch-Pagan test for homoscedasticity was employed to determine whether the independent variables employed in the study have constant variance, while in order to assess multi-collinearity, Variance Inflation Factors (VIF) statistics were utilized. The Durbin-Watson d statistic was adopted in the current study to test for autocorrelation. The unit root tests were achieved by utilizing the Fisher's type unit roots test. Finally, in order to ascertain whether the panel data utilized in the current study had fixed or variable effects, a Hausman test was conducted.

4.4.1 Normality Test

Table 4.6: Normality Test

Variable	Obs	W	V	z	Prob>z
Altman Z Score	215	0.96889	4.944	3.69	0.000110
Liquidity	215	0.76847	36.789	8.325	0.000000
Leverage	215	0.09821	143.292	11.465	0.000000
Profitability	215	0.71469	45.336	8.808	0.000000

The null hypothesis is the respective variables are normally distributed while the alternate hypothesis is that the variables are not normally distributed. The significance values of all the variables utilized in the study in the Shapiro-Wilk test of normality are less than the α (0.05), as shown in Table 4.6. Thus, the variables' data series are not normally distributed. Standardization is a remedy for non-normal distribution of data, thus, all variables' data series were standardized to address non-normal distribution.

4.4.2 Heteroscedasticity Test

Table 4.7: Breusch-Pagan/Cook-Weisberg Test for Heteroscedasticity

Ho:	Constant variance
	Variables: fitted values of Altman Z-Score
	chi2(1) = 16.62
	Prob > chi2 = 0.0000

The null hypothesis is that the data employed in the study displays homoscedasticity, while the alternate hypothesis is that the data employed in the study displays heteroscedasticity. The study results show that (Prob > chi2= 0.0000) is less than the study's critical value of (α=0.05), so the null hypothesis is rejected. Thus, the study's predictor variable data series are all heteroscedastic. Robust standard errors are a remedy for heteroscedasticity. Thus, robust standard errors were applied to correct heteroscedasticity.

4.4.3 Multicollinearity Test

Table 4.8: VIF Multicollinearity Statistics

Variable	VIF	1/VIF
Liquidity	1.04	0.96265
Profitability	1.04	0.963421
Leverage	1.00	0.998936
Mean VIF	1.03	

The rule of thumb is that the VIF values ought to be equal to or greater than 1 and less than 10 in order to ascertain lack of multicollinearity. Table 4.9 reveals that all independent variables utilized in the current study have VIF values are equal to or greater than 1 but below 10 indicating that the variables do not exhibit multicollinearity.

4.4.4 Auto Correlation Test

To test for autocorrelation in the current study, the Durbin Watson d-statistic was employed. The Durbin Watson d-statistic usually varies from 0 to 4. When autocorrelation is absent, a value of 2 is obtained. However, a Durbin Watson d-statistic score of between 0 and 2 usually indicates positive autocorrelation a Durbin Watson, whereas Durbin Watson d-statistic of between 1.5 and 2.5 indicates a negative autocorrelation. According to Shenoy and Sharma, (2015), a Durbin-Watson statistic of 1.5 to 2.5 is an indication of lack of serial autocorrelation while any value that lies outside the threshold is grounds for concern. However, Field (2009) established that a Durbin Watson d-statistic that is greater than 3 and less than 1 is a show for concern. The Durbin Watson d-statistic obtained for the current study is (4, 215) = 0.6590554. Thus, the Durbin Watson d-statistic obtained for the current study does not meet the criteria set by Field (2009). Thus, there is serial autocorrelation inherent in the current study variables.

Lagged transformation is a remedy for serial autocorrelation. Thus, lagged transformations were applied to the predictor variables as a remedy for autocorrelation.

4.4.5 Stationarity Test

The stationarity tests in the study were conducted via the Fisher-Type unit root test. Table 4.9 shows the stationarity test results, undertaken on the data series Altman's Z Score. The null hypothesis states that Altman's Z Score has unit root whereas the alternate hypothesis states that Altman's Z Score is stationary. All the P, Z, L*, and Pm values are greater than the α (0.05), thus the data series has unit root. The null hypothesis is not rejected since the significant values obtained in Table 4.9 are all greater than the study's critical value (α=0.05). First differencing is a remedy for unit root. Thus, the Altman's Z Score variable will be first differenced as a remedy for unit root.

Table 4.9: Stationarity Test for Altman's Z Score

Fisher-type unit-root test for AltamanZScore				
Based on augmented Dickey-Fuller tests				
Ho: All panels contain unit roots	Number of panels =		22	
Ha: At least one panel is stationary	Avg. number of periods =		9.77	
AR parameter: Panel-specific			Asymptotic: T -> Infinity	
Panel means: Included				
Time trend: Not included				
Drift term: Not included			ADF regressions: 0 lags	
			Statistic	p-value
Inverse chi-squared(44)		P	48.4412	0.2984
Inverse normal		Z	0.3977	0.6546
Inverse logit t(114)		L*	0.2762	0.6085
Modified inv. chi-squared		Pm	0.4734	0.318

Table 4.10 shows stationarity test results of the data series liquidity. The null hypothesis states that liquidity has unit root whereas the alternate hypothesis states that liquidity is stationary. All the P, Z, L*, and Pm values are less the α (0.05), thus the data series is stationary. The null

hypothesis is thus rejected since the significant values obtained in Table 4.10 are less than the study's critical value (α=0.05).

Table 4.10: Stationarity Test for Liquidity

Fisher-type unit-root test for Liquidity			
Based on augmented Dickey-Fuller tests			
Ho: All panels contain unit roots	Number of panels =	22	
Ha: At least one panel is stationary	Avg. number of periods =	9.77	
AR parameter: Panel-specific	Asymptotics: T -> Infinity		
Panel means: Included			
Time trend: Not included			
Drift term: Not included	ADF regressions: 0 lags		
		Statistic	p-value
Inverse chi-squared(44)	P	95.9507	0.0000
Inverse normal	Z	-3.1515	0.0008
Inverse logit t(114)	L*	-3.8268	0.0001
Modified inv. chi-squared	Pm	5.538	0.0000

Table 4.11 presents the stationarity test findings, which was undertaken on the data series leverage.

Table 4.11: Stationarity Test for Leverage

Fisher-type unit-root test for Leverage			
Based on augmented Dickey-Fuller tests			
Ho: All panels contain unit roots	Number of panels =	22	
Ha: At least one panel is stationary	Avg. number of periods =	9.77	
AR parameter: Panel-specific	Asymptotics: T -> Infinity		
Panel means: Included			
Time trend: Not included			
Drift term: Not included	ADF regressions: 0 lags		
		Statistic	p-value
Inverse chi-squared(44)	P	214.8427	0.0000
Inverse normal	Z	-5.2853	0.0000
Inverse logit t(114)	L*	-10.3014	0.0000
Modified inv. chi-squared	Pm	18.2119	0.0000

The null hypothesis states that leverage has unit root whereas the alternate hypothesis states that liquidity is stationary. All the P, Z, L*, and Pm values are less the α (0.05), thus the data series is stationary. The null hypothesis is thus rejected since the significant values obtained in Table 4.11 are less than the study's critical value (α=0.05).

Table 4.12 presents the stationarity test findings, which was undertaken on the data series profitability.

Table 4.12: Stationarity Test for Profitability

Fisher-type unit-root test for Profitability			
Based on augmented Dickey-Fuller tests			
Ho: All panels contain unit roots	Number of panels =	22	
Ha: At least one panel is stationary	Avg. number of periods =	9.77	
AR parameter: Panel-specific		Asymptotics: T -> Infinity	
Panel means: Included			
Time trend: Not included			
Drift term: Not included		ADF regressions: 0 lags	
		Statistic	p-value
Inverse chi-squared(44)	P	138.2043	0.0000
Inverse normal	Z	-5.2078	0.0000
Inverse logit t(114)	L*	-6.6278	0.0000
Modified inv. chi-squared	Pm	10.0422	0.0000

The null hypothesis states that profitability has unit root whereas the alternate hypothesis states that profitability is stationary. All the P, Z, L*, and Pm values are less the α (0.05), thus the data series is stationary. The null hypothesis is thus rejected since the significant values obtained in Table 4.12 are less than the study's critical value (α=0.05).

4.4.6 Test for Random and Fixed Effects

A Hausman test was conducted in the current study in order to ascertain whether the variables utilized either had a fixed effect or random effect where it changes overtime. Prior to carrying out the Hausman test, the variables were modified as the normality, homoscedasticity,

autocorrelation, and stationarity criteria were not met. Thus, as a result of all the variables utilized in the study not meeting the normality criteria, they were standardized as a remedy for non-normal distribution of data. The "robust standard errors'" approach for identifying unbiased standard errors in Ordinary Least Squares (OLS) coefficients during heteroscedasticity was utilized as a result of the predictor variables utilized in the current study exhibiting heteroscedasticity.

Additionally, since the variables exhibited autocorrelation, lagged transformations were applied to the predictor variables as a remedy for autocorrelation. Finally, the variable, Altman's Z-Score exhibited unit root, thus, it was first differenced as a remedy for unit root. Table 4.13 below present the findings on the Hausman test of specification.

Table 4.13: Hausman Test of Specification

	---- Coefficients ----			
	(b) fe	**(B) Re**	**(b-B) Difference**	**sqrt(diag(V_b-V_B)) S.E.**
Liquidity	0.239042	0.290087	-0.05105	0.015284
Leverage	-0.00193	-0.00241	0.000484	.
Profitability	4.132379	4.392737	-0.26036	.

b = consistent under Ho and Ha; obtained from xtreg

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

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= -3.53 chi2<0 ==> model fitted on these

data fails to meet the asymptotic

assumptions of the Hausman test;

see suest for a generalized test

The null hypothesis for the test was that the variables have random effects whereas the alternate hypothesis was that the variables have fixed effects. Therefore, the null hypothesis would be rejected if the significance value obtained is below the critical value (α) employed, which in the case of the current study is 0.05. On the other hand, the null hypothesis would not be rejected when the significance value obtained is greater the critical value (α) employed, which in the case of the current study is still 0.05. However, if the chi-square statistic obtained in the Hausman tests is negative, the alternative hypothesis is adopted since the p value equals asymptotically 1. The findings in Table 4.13 display that the chi-square statistic is negative (-3.53 chi2<0). Thus, the alternate hypothesis is adopted, and it can be concluded that the variables utilized in the current study have a fixed effect and a fixed effect panel model was applied.

4.5 Multiple Linear Regression

The effect of liquidity, leverage, and profitability on financial distress was assessed using fixed effects panel multiple regression analysis that was carried out at the 5% significance level. In order to ascertain the goodness of fit of the model, the current research compared the significance value shown in the ANOVA model with those got from the study. Additionally, the F statistic obtained was contrasted to the F critical value. Finally, the significance values obtained for the model coefficients of the predictor variables employed in the study were compared to the critical significance value of 0.05. In addition, the various t values obtained were contrasted to the two tailed t-critical value. Table 4.14 exhibits the findings.

Table 4.14: Fixed Effects Panel Multiple Linear Regression

Fixed-effects (within) regression			Number of obs =	193		
Group variable: CompanyID			Number of groups =	22		
R-sq: within = 0.0905			Obs per group: min =	6		
between = 0.4081			avg =	8.8		
overall = 0.0001			max =	9		
F(3,21)		16.62				
corr(u_i, Xb) = -0.7008			Prob > F =	0.0000		
(Std. Err. adjusted for 22 clusters in CompanyID)						
Robust						
dzAltmanZS~e	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Zliquidity~1	-0.17922	0.051842	-3.46	0.002	-0.28703	-0.07141
ZLeverage_~1	0.007281	0.006902	1.05	0.303	-0.00707	216353
ZProfitabi~1	-0.10774	0.042893	-2.51	0.020	-0.19694	-0.01854
_cons	-0.00969	0.001362	-7.12	0.000	-0.01253	-0.00686
sigma_u	.32874404					
sigma_e	.46982429					

The R^2 indicates the variations in the response variable, which in this case is financial distress, that emanate from the changes in the predictor variables utilized in the model. The between R^2 result is 0.4081 indicating 40.81% of variation in financial distress are caused by changes

in; liquidity, leverage, and profitability. This consequently implies that variables contributing to 59.19% of the changes in financial distress are left out.

The study null hypothesis stated that the model entailing; liquidity, leverage, and profitability does not have a significant effect on financial distress. The alternate hypothesis is that the model has a significant effect on the financial distress. The findings revealed a significance value of (Prob>F=0.0000), which is below the α (0.05) critical value leading to rejection of the null hypothesis. Further findings reveal that the F Value obtained in the study (F(3,21)=16.62) is greater than the F-Critical value of 2.64739086, thus also lending credence to the rejection of the null hypothesis. This implied that the model entailing; liquidity, leverage, and profitability significantly influences the financial distress. This therefore means that the model can be applied in forecasting financial distress.

The null hypothesis also held that liquidity, leverage, and profitability each, do not have a significant relationship with financial difficulties. This research established that only liquidity and leverage have a significant relationship with financial distress. Liquidity's significance and t values (p=0002, t=-3.46) and profitability's significance and t values (p=0.020, t=-2.51) are both below the critical alpha value (α) of 0.05 and do not lie within the t critical value of 1.9716, resulting to the rejection of the null hypothesis. Further, the current study findings revealed that they both had negative significant relationships with the Altman Z Score. On the contrary, the current study findings established that leverage does not have a significant effect on financial distress as its significance value (p=0.303) is greater than the study's critical value (α) of 0.05 and t value (t=1.05) does not lie within the t critical value of 1.9716. Thus, leverage has a non-significant positive relationship with the Altman Z Score.

The model indicated below was thus developed.

Y = -0.00969 - 0.17922 - 0.10774

Where;

Y = Altman's Z Score

X_1 = Liquidity

X_2 = Profitability

The constant co-efficient of -0.00969 implies that when both liquidity and profitability are zero, the Altman Z Score is set at -0.00969 units. The beta coefficient of liquidity of -0.17922 means that an increment in the liquidity ratio by 100% would signify a decrease in the Altman's Z Score by 0.17922%. Additionally, the beta coefficient of profitability of -0.10774 means that an increment in the ROA by 100% would signify a decrease in the Altman's Z Score by 0.10774%.

4.6 Interpretation and Discussion of Findings

The study set out to ascertain the effect of firm specific factors on financial distress among Large Manufacturing Companies in Kenya. Specifically, the study sought to investigate the effect of liquidity, leverage, and profitability on financial distress among Large Manufacturing Firms in Kenya.

The study findings established that the manufacturing firms are generally in the grey zone and safe zone and the companies are not likely to be headed towards bankruptcy. The study findings revealed that only about 25% of the manufacturing firms are likely to be headed towards bankruptcy. Additionally, the current study findings established that the manufacturing firms

generally have a range of not having a good current ratio to having a good current ratio. The study findings revealed that only about 50% of the manufacturing firms have a good current ratio. The study findings further established that the manufacturing firms' general solvency situation ranges from being a cause for concern to being good. The study findings revealed that about 50% of the manufacturing firms have a good solvency situation, 25% are risky, while another 25% have a solvency situation which is a cause of concern.

Further findings were that liquidity and profitability each had a significant correlation with financial distress. Results shows that they are both negatively significantly correlated with financial distress. Study findings revealed that leverage is not significantly correlated to financial distress. Additional study findings were that the firm specific factors entailing liquidity, leverage, and profitability explained financial distress to a large extent and they significantly influence financial distress. Final findings revealed that only the firm specific factors, liquidity and leverage that have a significant relationship with financial distress. They both had positive significant relationships with financial distress. On the contrary, the current study findings established that leverage has a non-significant negative relationship with financial distress.

The wreckers theory developed by Campbell, Hilscher, and Szilagi (2005), postulates that stocks with an increased likelihood of failure have a higher chance of delivering abnormally low average returns. The current study findings that profitability has a positive significant relationship with financial distress contradicts the wrecker's theory.

The trade-off theory of capital structure, developed by Modigliani & Miller (1963), states that use of debt raises a firm's value up to an optimal level where continuous debt use is unfavorable

thus causing a decline in a company's value. Continuous use of debt beyond this point increases both the bankruptcy and agency cost leading to financial distress. The current study findings partially confirms the trade-off theory of capital structure.

Introduced by Merton (1974), the Credit Risk Theory explains the financial distress to a firm caused by its inability to adequately manage their credit risk exposure. It further states that corporates have a contractual obligation to perform and when they fail to honor these obligations, there is risk of creditors terminating credit terms for future transactions hence liquidity problems or creditors may take legal action for winding up the company due to bankruptcy. The current study findings contradicts the Credit Risk Theory.

Developed by Myers (1984), the Pecking Order Theory explains that firms have an ideal ranking of financing decisions and that a company would first exhaust internal financing sources in form of retained earnings before issuing debt and then turning to equity as the last option. Increased use of external capital reduces firm value and increase chances of financial distress. The current study findings partially confirms the Pecking Order Theory.

Firm characteristics are key pointers to a company's financial stability as they influence a firm's responsiveness to financial obligations and the ever-changing business environment. A standard structural model of bankruptcy prediction presumes that an entity failure occurs with a significant reduction in assets to a level that is low compared the firm's liabilities (Duffie & Wang, 2004). The current study findings that firm characteristics explain to a large extent financial distress and they significantly influence and can be used to predict financial distress is in tandem to Duffie and Wang's (2004) assertion.

Companies that record high debt levels, low market capitalization, low profitability, low past stock returns, low cash held, high volatile past stock returns, lower prices per share, and high market-book ratios, have a high probability of failure and filing for bankruptcy (Campbell, 2005). The current study findings that firm characteristics explain to a large extent financial distress and they significantly influence and can be used to predict financial distress is in tandem to Campbell's (2005) assertion.

Additionally, according to Campbell (2005), increased profitability of a firm would lead to a reduced probability of corporate failure by 44% of its initial value. The current study findings that profitability has a positive significant relationship with financial distress contradicts Campbell's (2005) assertion.

According to Ahmad (2013), increased leverage causes an increase in corporate financial distress. The current study findings that leverage has a non-significant negative relationship with financial distress partially does not agree with Ahmad's (2013) assertion. In contrast, Kristanti (2016) noted that a negative relationship exists between leverage and financial distress. The current study findings that leverage has a non-significant negative relationship with financial distress partially confirms with Kristanti's (2016) assertion.

Baimwera and Muriuki (2014) concluded that no significant relationship between leverage and financial distress. The current study findings agree with Baimwera and Muriuki's (2014) assertion. Nahar (2006) indicates that increased leverage causes corporate financial distress to decrease. The current study findings do not agree with Nahar's (2006) assertion.

Kipngetich, Tenai, and Tarus (2017) study findings showed that liquidity had a significant positive effect on distance to corporate bankruptcy, while profitability had a significant negative effect on distance to corporate bankruptcy. The current study findings that liquidity has a positive significant relationship with financial confirms Kipngetich, Tenai, and Taru's (2017) study findings. However, the current study findings that profitability has a positive significant relationship with financial contradicts Kipngetich, Tenai, and Taru's (2017) study findings.

Wesa and Otinga (2018) established the financial distress determinants among listed firms in Kenya. The study findings established that liquidity has a significant negative effect on financial distress, and both capital structure and financial leverage has a significant positive effect on financial distress. The current study findings disagree with Wesa and Otinga's (2018) study findings. Additionally, the current study findings that leverage has a non-significant negative relationship with financial distress partially does not agree with Wesa and Otinga's (2018) study findings.

Ndinda (2021) investigated the firm characteristics effect on distress of listed non-financial companies in the NSE. The research concluded that, liquidity has a significant negative effect on financial distress and leverage has a significant positive impact on financial distress. The current study findings disagrees with Ndinda's (2021) study findings. Additionally, the current study findings that leverage has a non-significant negative relationship with financial distress does not agree with Ndinda's (2021) study findings.

Ufo (2015) investigated the financial distress determinants among Ethiopian manufacturing firms. The study findings revealed that liquidity and profitability have statistically significant

positive impact on debt service coverage. On the contrary, leverage has negative and significant influence on debt service coverage. The current study findings that both liquidity and profitability have a positive significant relationship with financial disagrees with Ufo's (2015) study findings. Additionally, the current study findings that leverage has a non-significant negative relationship with financial distress partially agrees with Ufo's (2015) study findings.

Ikpesu (2019) investigated the determinants of financial distress of firms in the Nigerian manufacturing sector. Findings of the study revealed that leverage has a positive relationship with financial distress, while liquidity and profitability have an inverse relationship with financial distress. The current study findings that both liquidity and profitability have a positive significant relationship with financial disagrees Ikpesu's (2019) study findings.

Ceylan (2021) investigated the numerical link of both firm-specific and macroeconomic factors on financial distress of Turkish SMEs, conducting a study on the firms listed in the Borsa Istanbul SMEs industrial index. The study findings showed that all firm specific variables had a statistically significant positive impact on financial distress. The current study findings that firm characteristics explain to a large extent financial distress and they significantly influence and can be used to predict financial distress is in tandem to Ceylan's (2021) assertion.

Dirman (2021) sought to determine variables that influence financial distress among retail companies in Indonesia. The study findings established found that leverage has a statistically significant negative effect on financial distress and profit margin has a statistically significant positive effect on financial distress. The current study findings that profitability has a positive significant relationship with financial agrees Dirman's (2021) study findings.

Muller, Kumar, Shan, and Roscigno (2021) investigated the determinants of financial difficulties in the Indian manufacturing sector. The study concluded that, liquidity, profitability, and leverage are statistically positively significant to financial distress. The current study findings that both liquidity and profitability have a positive significant relationship with financial agrees Muller, Kumar, Shan, and Roscigno's (2021) study findings. Additionally, the current study findings that leverage has a non-significant negative relationship with financial distress disagrees with Muller, Kumar, Shan, and Roscigno's (2021) study findings.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this section, a summary of findings is provided and conclusions derived. Further, limitations that were encountered during the carrying out of the current study are enumerated. In addition, this chapter makes recommendation to key stakeholders as well as the policy makers. Finally, the research offers suggestions on areas that can be covered by other scholars in future research studies.

5.2 Summary

This research focused at assessing the effect of firm specific factors on financial distress among Large Manufacturing Companies in Kenya. Specifically, the study sought to investigate the effect of liquidity, leverage, and profitability on financial distress among Large Manufacturing Firms in Kenya. It was a panel study, where data was gathered for various units of analysis at different time periods. The study was conducted for a sample of 22 large manufacturing firms', derived through convenience from a total population of 1,045 manufacturing firms. The current research used secondary data captured from the manufacturing firms' financial statements. The current study employed descriptive statistics to assess the current scenario of liquidity, profitability, and leverage in the manufacturing firms. The study employed the use of linear regression analysis and correlation analysis to establish the effect of liquidity, profitability, and leverage on financial distress.

The study findings established that the manufacturing firms are generally in the grey zone and safe zone and the companies are not likely to be headed towards bankruptcy. The study findings revealed that only about 25% of the manufacturing firms are likely to be headed towards

bankruptcy. Additionally, the current study findings established that the manufacturing firms generally have a range of not having a good current ratio to having a good current ratio. The study findings revealed that only about 50% of the manufacturing firms have a good current ratio. The study findings further established that the manufacturing firms' general solvency situation ranges from being a cause for concern to being good. The study findings revealed that about 50% of the manufacturing firms have a good solvency situation, 25% are risky, while another 25% have a solvency situation which is a cause of concern.

Further findings were that liquidity and profitability each had a significant correlation with financial distress. Results show that they are both negatively significantly correlated with financial distress. However, the study findings revealed that leverage is not significantly correlated to financial distress. Additional study findings were that the firm specific factors entailing liquidity, leverage, and profitability explained financial distress to a large extent and they significantly influence financial distress. Final findings were that only the firm specific factors, liquidity and leverage that have a significant relationship with financial distress. They both had positive significant relationships with financial distress. On the contrary, the current study findings established that leverage has a non-significant negative relationship with financial distress.

5.3 Conclusion

The study conclusions were made in line to the study objectives and objectives. The study concluded that firm specific factors influence financial distress and they can be used to predict it. This conclusion comes as a result of the study finding that the firm specific factors entailing liquidity, leverage, and profitability explained financial distress to a large extent and they significantly influence financial distress.

The study also concludes that both liquidity and profitability have a negative association with financial distress but actually have a significant positive effect on financial distress. This conclusion is derived from the study findings that both liquidity and profitability have a significant negative correlation with financial distress but they both have a significant positive relationship with financial distress. The final study conclusion is that leverage has a weak negative effect on financial distress. This conclusion is derived from the current study finding that leverage has a non-significant correlation with financial distress and a negative non-significant relationship with financial distress.

5.4 Recommendations for Policy and Practice

The study findings will motivate more research to be done on financial distress and bankruptcy. The study findings will also be a guide for future research on financial distress and bankruptcy in public and commercial firms. The current study findings will also advance not only researcher's knowledge of financial distress and bankruptcy, but also the scholarly community's and also aid the industry to gain experience in the subject matter.

Recommendations are towards policy makers in the trade and industry sector, mainly the Ministry of Trade, Investment, and Industry, as well as the Kenya Investments Authority and Kenya Trade Network Agency, and also the capital markets regulator, the Capital Markets Authority. Recommendations are made in order to provide guidance policy formulation to support and prop up firms and businesses in the country from solvency issues and imminent going concern fears.

Policy recommendations are that since it has been established that the firm specific factors can explain financial distress to a large extent and they significantly influence financial distress to

the extent they can be utilized to predict financial distress, policy makers should focus on the firms internal factors to detect and avert imminent financial distress and bankruptcy. They should continually monitor the solvency situation of firms by analyzing and monitoring the internal firm factors. Since it has being established that both liquidity and profitability have a positive significant relationship with financial distress, the policy makers should monitor and be wary of firms rapidly scaling up their operations. The scaling up should also be moderated and sustainable. Even though leverage has been found to have an insignificant negative effect on financial distress, the uptake of debt in the capital structure should be surveilled and monitored by the policy makers to ensure that it does not exceed the optimal levels.

The findings of the study will help the manufacturing firms, as well as other commercial firm' management and consultants, lenders, and investors to focus on firm specific factors to predict, monitor, and mitigate financial distress and bankruptcy. This is because the current study findings have established that the firm specific factors can explain financial distress to a large extent, and they significantly influence financial distress to the extent they can be utilized to predict financial distress. Additional recommendations made to the manufacturing firms, as well as other commercial firms' management and consultants to scale their operations sustainably and lenders and investors to monitor firms which are scaling up rapidly because it has been established by the current study findings that both liquidity and profitability have a negative significant relationship with financial distress. Final recommendations manufacturing firms, as well as other commercial firms' management and consultants are to uptake optimal debt in their respective firms' capital structure and lenders and investors to monitor firms uptake of debt even though leverage has been found to have an insignificant negative effect on financial distress.

5.5 Limitations of the Study

The research only covered the large manufacturing companies' due to time and cost constraints. It is not certain that the same results would be derived if the same study was replicated to firms in the other sectors of the economy. More uncertainties would happen if similar studies were done in different regions or countries.

Due to time restrictions, this research focused on an annual period of analysis. It is not ascertained if the study findings would hold if studies conducted quarterly. Additionally, the research mainly engaged secondary sources of data. The data for the study had been collected and arranged into Microsoft Excel and subsequently uploaded in STATA version 14 in order to receive synchronized information that can then be utilized for analysis and drawing conclusions. In addition, the data was not utilized in its raw form, and further calculations and manipulations of the data were required. Therefore, a large amount of time was needed to assemble and synchronize the data over time.

However, the limitations stated above did not in any way compromise the quality of the current research paper. The limitations were overcome during the course of the research or represent scenarios if the study was conducted while utilizing different aspects.

5.6 Recommendations for Further Study

Basing on the knowledge and insights generated from the current study, recommendations are made on some areas for future studies to be conducted on. First, there other firm specific factors that impact on financial distress apart from liquidity, leverage, and profitability. Further research can be done to identify and analyze them. Additionally, there might be factors

moderating, intervening, or mediating the relationship between firm specific factors and financial distress. Further investigation can be conducted to identify and analyze them.

Similar studies can be carried out across other industries and sectors in the economy to establish if the current study findings might hold. Additionally, the current study was carried out only in the Kenyan context, similar studies could be carried out that are not based on the Kenyan context. Thus, further studies could be carried out in other regions or jurisdictions to establish if the research results can be derived.

The current research conducted an annual period of analysis. A more granular approach maybe recommended, where shorter periods may be applied as periods of analyses, for instance quarterly. Secondary data were employed in the current study; future research relying on primary data such as detailed questionnaires, focus groups, and organized interviews provided to bank staff, which might disapprove the current study findings. Descriptive statistics, multiple linear regression, and correlation analysis were utilized in this research. Further recommendations are made that future researches on firm factors and financial distress can incorporate other analysis methods like; factor analysis, cohort analysis, cluster analysis, neural networks analysis, granger causality, content analysis, discriminant analysis, among others.

The study findings established that the manufacturing firms are generally in the grey zone and safe zone and the companies are not likely to be headed towards bankruptcy. The study findings revealed that only about 25% of the manufacturing firms are likely to be headed towards bankruptcy. Additionally, the current study findings established that the manufacturing firms generally have a range of not having a good current ratio to having a good current ratio. The study findings revealed that only about 50% of the manufacturing firms have a good current

ratio. The study findings further established that the manufacturing firms' general solvency situation ranges from being a cause for concern to being good. The study findings revealed that about 50% of the manufacturing firms have a good solvency situation, 25% are risky, while another 25% have a solvency situation which is a cause of concern. The study findings prompts a study to be conducted in the other sectors of firms listed at the NSE to ascertain the going concern of the firms listed at the NSE.

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APPENDICES

Appendix A: Data Collection Sheet

Firm	Year	Current Assets	Fixed Assets	Total Debt	Equity	Sales	Net Profit	Earnings Before Interest & Tax (EBIT)

Appendix B: Research Data

Company	Company ID	Year	Current Assets (KES Millions)	Current Liabilities (KES Millions)	Liquidity	Non-Current Liabilities (KES Millions)	Total Debt (KES Millions)	Total Shareholders' Equity (KES Millions)	Leverage	Net Profit (KES Millions)	Total Assets (KES Millions)	Profitability	Altman's Z-Score
BRITISH AMERICAN TOBACCO KENYA PLC	1	2012	7129.83	6053	1.18	2025.90	8078.58	7097.92	1.14	3270.85	15176.50	0.22	3.89
BRITISH AMERICAN TOBACCO KENYA PLC	1	2013	8518.27	6781	1.26	2633.21	9414.32	7571.61	1.24	3723.69	16985.92	0.22	3.75
BRITISH AMERICAN TOBACCO KENYA PLC	1	2014	8972.5	7183	1.25	2943.68	10126.59	8126.92	1.25	4255.31	18253.51	0.23	3.04
BRITISH AMERICAN TOBACCO KENYA PLC	1	2015	9579.21	6601	1.45	3227.30	9828.01	8853.18	1.11	4976.26	18681.18	0.27	3.42
BRITISH AMERICAN TOBACCO KENYA PLC	1	2016	8968	6346	1.41	3357.00	9703.00	8797.00	1.10	4234.00	18500.00	0.23	4.31
BRITISH AMERICAN TOBACCO KENYA PLC	1	2017	8665	6574	1.32	3391.00	9965.00	7840.00	1.27	3336.00	17805.00	0.19	4.01
BRITISH AMERICAN TOBACCO KENYA PLC	1	2018	9216	5792	1.59	3237.00	9029.00	9310.00	0.97	4085.00	18339.00	0.22	4.45
BRITISH AMERICAN TOBACCO KENYA PLC	1	2019	11122	10221	1.09	1871.00	12092.00	9715.00	1.24	3885.00	21807.00	0.18	3.67
BRITISH AMERICAN TOBACCO KENYA PLC	1	2020	10792	8274	1.30	1576.00	9850.00	11856.00	0.83	5518.00	21706.00	0.25	4.39
BRITISH AMERICAN TOBACCO KENYA PLC	1	2021	11814	7206	1.64	1939.00	9145.00	14974.00	0.61	6483.00	24119.00	0.27	4.80
Carbacid Investments PLC	2	2012	639.388	150.2	4.26	209.88	360.05	1652.77	0.22	389.29	2012.82	0.19	5.36

Carbacid Investments PLC	2	2013	892.067	88.42	10.09	191.55	279.97	1924.43	0.15	475.54	2204.40	0.22	7.05
Carbacid Investments PLC	2	2014	980.688	155.8	6.30	217.24	373.00	2160.17	0.17	490.64	2533.16	0.19	6.07
Carbacid Investments PLC	2	2015	1114.69	247.1	4.51	244.58	491.70	2477.03	0.20	393.86	2968.73	0.13	5.42
Carbacid Investments PLC	2	2016	1188.26	167.6	7.09	239.94	407.57	2674.20	0.15	375.57	3081.77	0.12	6.09
Carbacid Investments PLC	2	2017	1008.05	148.2	6.80	234.70	382.89	2924.08	0.13	352.30	3306.97	0.11	6.41
Carbacid Investments PLC	2	2018	1065.39	113	9.43	214.02	327.02	3044.21	0.11	298.53	3371.23	0.09	7.59
Carbacid Investments PLC	2	2019	956.355	168	5.69	208.05	376.01	3127.49	0.12	264.59	3503.50	0.08	6.89
Carbacid Investments PLC	2	2020	1056.33	183.3	5.76	192.44	375.74	3252.10	0.12	324.65	3627.83	0.09	7.17
Carbacid Investments PLC	2	2021	1242.94	249.4	4.98	181.07	430.43	3488.80	0.12	415.10	3919.22	0.11	6.99
East African Breweries Ltd	3	2012	18057.8	22484	0.80	23384.65	45868.44	8302.84	5.52	11186.00	54171.27	0.21	2.46
East African Breweries Ltd	3	2013	18593.1	26607	0.70	23515.02	50121.86	7598.60	6.60	6945.00	57720.46	0.12	2.30
East African Breweries Ltd	3	2014	19807.2	27461	0.72	26304.45	53765.10	9100.85	5.91	6848.30	62865.94	0.11	2.20
East African Breweries Ltd	3	2015	25491.2	24931	1.02	28655.83	53586.60	13353.18	4.01	9535.22	66939.78	0.14	2.59
East African Breweries Ltd	3	2016	21556.3	27969	0.77	26846.94	54816.36	10867.25	5.04	8021.39	65683.61	0.12	1.95
East African Breweries Ltd	3	2017	22134.6	21984	1.01	32694.43	54678.14	11988.17	4.56	8514.57	66666.31	0.13	2.16
East African Breweries Ltd	3	2018	21526	25784	0.83	33811.02	59594.79	11652.04	5.11	7255.56	71246.83	0.10	1.82
East African Breweries Ltd	3	2019	29602.4	33659	0.88	37251.50	70910.88	16154.75	4.39	11515.13	87065.63	0.13	1.90
East African Breweries Ltd	3	2020	25968.4	31045	0.84	43620.54	74665.14	13993.27	5.34	7020.92	88658.41	0.08	1.53

East African Breweries Ltd	3	2021	34092.5	39702	0.86	45562.27	85264.58	14852.43	5.74	6961.94	########	0.07	1.46
Unga Group PLC	4	2012	4640.96	1968	2.36	453.09	2421.04	3989.22	0.61	348.20	6406.33	0.05	4.59
Unga Group PLC	4	2013	5820.21	3167	1.84	646.15	3813.01	4503.92	0.85	508.02	8301.40	0.06	3.55
Unga Group PLC	4	2014	4934.21	2172	2.27	987.38	3159.77	4687.24	0.67	474.49	7475.61	0.06	4.20
Unga Group PLC	4	2015	5452.72	2302	2.37	1014.34	3316.51	5355.28	0.62	621.87	8671.79	0.07	4.22
Unga Group PLC	4	2016	5819.76	2532	2.30	971.17	3503.05	5696.73	0.61	508.82	9199.78	0.06	4.10
Unga Group PLC	4	2017	6599.37	4026	1.64	762.56	4788.52	5478.96	0.87	-32.29	10267.47	0.00	3.31
Unga Group PLC	4	2018	6595.82	3080	2.14	1244.07	4323.59	5609.08	0.77	783.20	9932.66	0.08	4.11
Unga Group PLC	4	2019	6676.64	3414	1.96	1177.05	4590.66	6055.41	0.76	544.81	10646.07	0.05	3.54
Unga Group PLC	4	2020	7912.95	5018	1.58	941.34	5959.72	6091.15	0.98	66.16	12050.88	0.01	2.86
Unga Group PLC	4	2021	6046.78	2676	2.26	921.22	3597.52	6389.91	0.56	293.48	9764.19	0.03	4.06
Eveready East Africa PLC	5	2012	876.043	695.8	1.26	105.48	801.24	349.49	2.29	70.08	1150.73	0.06	2.01
Eveready East Africa PLC	5	2013	683.971	474	1.44	71.90	545.88	395.92	1.38	45.09	941.80	0.05	2.85
Eveready East Africa PLC	5	2014	763.357	593.3	1.29	139.30	732.62	218.46	3.35	-177.59	930.06	-0.19	1.04
Eveready East Africa PLC	5	2015	640.62	651.3	0.98	54.07	705.38	806.29	0.87	-77.71	1511.67	-0.05	1.80
Eveready East Africa PLC	5	2016	266.553	587.4	0.45	8.85	596.23	486.58	1.23	-171.82	1082.81	-0.16	-0.30
Eveready East Africa PLC	5	2017	577.86	214.4	2.69	8.85	223.28	549.37	0.41	266.08	772.65	0.34	4.18
Eveready East Africa PLC	5	2018	322.266	127.3	2.53	446.51	573.77	437.67	1.31	-116.40	573.77	-0.20	0.86
Eveready East Africa PLC	5	2019	194.757	129.7	1.50	118.85	248.53	110.00	2.26	-303.54	248.53	-1.22	-0.73
Eveready East Africa PLC	5	2020	157.949	151.9	1.04	49.16	201.09	40.99	4.91	-47.01	201.09	-0.23	-1.61
Eveready East Africa PLC	5	2021	116.343	152.2	0.76	7.00	159.19	6.30	25.27	-35.60	159.19	-0.22	-2.35

Kenya Orchards Ltd	6	2012	21.6823	12.54	1.73	56.27	68.82	0.12	568.20	0.24	68.94	0.00	-0.55
Kenya Orchards Ltd	6	2013	22.8124	11.84	1.93	56.27	68.12	2.48	27.45	2.42	70.60	0.03	-0.18
Kenya Orchards Ltd	6	2014	29.1974	16.46	1.77	56.58	73.04	-22.84	-3.20	-25.26	50.20	-0.50	-0.87
Kenya Orchards Ltd	6	2015	34.1119	16.43	2.08	56.27	72.71	6.03	12.07	28.92	78.73	0.37	0.36
Kenya Orchards Ltd	6	2016	46.9698	23.24	2.02	56.27	79.51	9.73	8.17	3.76	89.24	0.04	0.58
Kenya Orchards Ltd	6	2017	62.6921	36.59	1.71	56.27	92.86	15.41	6.02	5.73	108.28	0.05	0.77
Kenya Orchards Ltd	6	2018	67.4548	42.53	1.59	56.27	98.81	16.36	6.04	1.00	115.16	0.01	0.20
Kenya Orchards Ltd	6	2019	73.8069	31.35	2.35	56.27	87.62	26.73	3.28	2.54	114.35	0.02	0.85
Kenya Orchards Ltd	6	2020	96.3396	49.95	1.93	56.27	106.22	20.03	5.30	-12.54	126.25	-0.10	0.57
Kenya Orchards Ltd	6	2021	97.7229	46.96	2.08	56.27	103.23	23.72	4.35	3.69	126.95	0.03	0.72
Flame Tree Group Holdings Ltd	7	2013	690.135	572.2	1.21	105.49	677.68	198.13	3.42	149.05	875.81	0.17	3.13
Flame Tree Group Holdings Ltd	7	2014	805.722	518.5	1.55	128.17	646.67	407.79	1.59	153.13	1054.45	0.15	3.16
Flame Tree Group Holdings Ltd	7	2015	1053.5	642	1.64	102.61	744.61	627.62	1.19	178.85	1372.23	0.13	3.46
Flame Tree Group Holdings Ltd	7	2016	1140.41	745.1	1.53	56.93	802.03	719.17	1.12	144.98	1521.19	0.10	3.40
Flame Tree Group Holdings Ltd	7	2017	1141.6	884.5	1.29	64.80	949.31	731.46	1.30	39.75	1680.77	0.02	2.64
Flame Tree Group Holdings Ltd	7	2018	1133.15	990.9	1.14	35.33	1026.24	813.03	1.26	33.79	1839.27	0.02	2.40
Flame Tree Group Holdings Ltd	7	2019	1079.33	890.2	1.21	333.85	1224.03	1057.14	1.16	44.94	2281.17	0.02	2.18
Flame Tree Group Holdings Ltd	7	2020	1156.87	1042	1.11	361.83	1404.13	1084.92	1.29	148.41	2489.05	0.06	2.37

Flame Tree Group Holdings Ltd	7	2021	1413.15	1348	1.05	336.29	1684.76	1190.05	1.42	112.29	2874.81	0.04	2.22
Olympia Capital Holdings Ltd	8	2012	633.11	310.1	2.04	243.60	553.73	787.52	0.70	42.86	1493.01	0.03	1.83
Olympia Capital Holdings Ltd	8	2013	730.355	260.9	2.80	562.12	823.05	1074.36	0.77	7.88	1897.41	0.00	1.59
Olympia Capital Holdings Ltd	8	2014	354.807	303.5	1.17	102.97	406.49	1169.84	0.35	45.04	1576.34	0.03	2.24
Olympia Capital Holdings Ltd	8	2015	437.441	274	1.60	88.84	362.85	1168.56	0.31	-29.55	1531.41	-0.02	2.63
Olympia Capital Holdings Ltd	8	2016	419.498	204.8	2.05	175.42	380.26	1147.27	0.33	14.83	1527.52	0.01	2.61
Olympia Capital Holdings Ltd	8	2017	347.196	212.6	1.63	121.00	333.59	1305.21	0.26	38.85	1638.80	0.02	3.13
Olympia Capital Holdings Ltd	8	2018	393.288	220.9	1.78	125.96	346.81	1301.02	0.27	-3.49	1647.83	0.00	2.96
Olympia Capital Holdings Ltd	8	2019	329.583	206.5	1.60	136.49	343.01	1283.59	0.27	5.74	1626.60	0.00	2.94
Olympia Capital Holdings Ltd	8	2020	339.059	201	1.69	189.80	390.80	1315.07	0.30	10.41	1705.87	0.01	2.73
Olympia Capital Holdings Ltd	8	2021	299.191	193.9	1.54	59.62	253.52	1215.22	0.21	-1.11	1468.74	0.00	3.40
SAMEER AFRICA PLC	9	2012	2665.33	940.8	2.83	132.16	1072.93	2326.72	0.46	188.45	3399.65	0.06	3.84
SAMEER AFRICA PLC	9	2013	2822.53	836.6	3.37	152.31	988.87	2679.61	0.37	401.19	3668.49	0.11	4.29
SAMEER AFRICA PLC	9	2014	2872.11	1138	2.52	182.95	1320.95	2536.44	0.52	-66.93	3857.39	-0.02	3.10
SAMEER AFRICA PLC	9	2015	2765.55	1254	2.21	4.57	1258.78	2492.45	0.51	-15.65	3751.23	0.00	3.08
SAMEER AFRICA PLC	9	2016	2290.28	1449	1.58	6.58	1455.67	1835.19	0.79	-652.10	3290.87	-0.20	1.37
SAMEER AFRICA PLC	9	2017	1698.49	1097	1.55	35.16	1132.01	1837.85	0.62	13.03	2969.87	0.00	2.50
SAMEER AFRICA PLC	9	2018	1300.17	1439	0.90	19.65	1458.25	1129.58	1.29	-529.32	2587.82	-0.20	-0.17
SAMEER AFRICA PLC	9	2019	867.098	1001	0.87	460.48	1461.74	69.11	21.15	-1061.95	1530.85	-0.69	-2.40

SAMEER AFRICA PLC	9	2020	323.387	218.6	1.48	713.85	932.44	114.72	8.13	43.48	1047.16	0.04	0.04
SAMEER AFRICA PLC	9	2021	342.717	288.4	1.19	501.62	789.99	334.10	2.36	217.39	1124.09	0.19	1.09
Kakuzi PLC	10	2012	1237.47	146	8.47	624.45	770.48	2801.23	0.28	408.66	3571.70	0.11	4.37
Kakuzi PLC	10	2013	1170.66	147.2	7.95	666.33	813.52	2904.03	0.28	165.03	3717.54	0.04	4.01
Kakuzi PLC	10	2014	1181.09	177.4	6.66	695.31	872.73	2984.73	0.29	160.21	3857.45	0.04	3.96
Kakuzi PLC	10	2015	1530.07	369.2	4.14	742.10	1111.31	3443.87	0.32	527.69	4555.18	0.12	4.20
Kakuzi PLC	10	2016	2049.35	416.7	4.92	801.42	1218.16	3846.26	0.32	562.43	5064.41	0.11	4.25
Kakuzi PLC	10	2017	2407.2	616.9	3.90	807.19	1424.09	4322.04	0.33	591.64	5746.13	0.10	4.11
Kakuzi PLC	10	2018	2316.92	390	5.94	881.60	1271.57	4669.48	0.27	481.59	5941.04	0.08	4.47
Kakuzi PLC	10	2019	2593.02	235.7	11.00	1007.05	1242.71	5218.33	0.24	713.44	6461.04	0.11	4.91
Kakuzi PLC	10	2020	2916.77	259.9	11.22	1080.47	1340.37	5566.45	0.24	622.03	6906.82	0.09	4.87
Kakuzi PLC	10	2021	2958.28	277.1	10.68	1070.96	1348.05	5539.42	0.24	319.74	6887.47	0.05	4.61
Kapchorua Tea Kenya PLC	11	2012	752.19	456.9	1.65	372.37	829.26	1133.64	0.73	77.97	1962.90	0.04	2.58
Kapchorua Tea Kenya PLC	11	2013	823.337	389	2.12	405.48	794.46	1284.01	0.62	179.72	2078.48	0.09	3.02
Kapchorua Tea Kenya PLC	11	2014	621.62	121.9	5.10	426.64	548.50	1380.67	0.40	125.99	1929.16	0.07	3.63
Kapchorua Tea Kenya PLC	11	2015	650.243	114.4	5.68	441.12	555.56	1427.68	0.39	-22.79	1983.24	-0.01	3.20
Kapchorua Tea Kenya PLC	11	2016	895.577	210.3	4.26	420.07	630.37	1514.22	0.42	106.10	2144.59	0.05	3.46
Kapchorua Tea Kenya PLC	11	2017	788.704	227.8	3.46	387.04	614.81	1415.50	0.43	-51.77	2030.31	-0.03	3.06

Kapchorua Tea Kenya PLC	11	2018	1096.63	375.6	2.92	441.83	817.42	1671.62	0.49	166.41	2489.04	0.07	3.25
Kapchorua Tea Kenya PLC	11	2019	872.389	193.3	4.51	372.13	565.46	1467.71	0.39	-125.67	2033.17	-0.06	3.22
Kapchorua Tea Kenya PLC	11	2020	875.728	180.9	4.84	334.16	515.11	1426.89	0.36	19.44	1942.00	0.01	3.51
Kapchorua Tea Kenya PLC	11	2021	871.626	185.9	4.69	409.51	595.44	1486.26	0.40	7.07	2081.71	0.00	3.36
EAST AFRICAN CABLES PLC	12	2012	3031.44	2532	1.20	791.39	3323.61	2925.03	1.14	522.06	6248.64	0.08	2.01
EAST AFRICAN CABLES PLC	12	2013	3613.97	2777	1.30	996.62	3773.52	3066.54	1.23	398.20	6840.06	0.06	1.86
EAST AFRICAN CABLES PLC	12	2014	3846.8	3294	1.17	1503.93	4797.62	3091.88	1.55	341.15	7889.50	0.04	1.61
EAST AFRICAN CABLES PLC	12	2015	2945.08	3155	0.93	2079.05	5234.16	2459.17	2.13	-741.20	8384.14	-0.09	0.56
EAST AFRICAN CABLES PLC	12	2016	2229.56	3319	0.67	1672.87	4992.00	1998.95	2.50	-582.60	7548.41	-0.08	0.37
EAST AFRICAN CABLES PLC	12	2017	2376.56	3967	0.60	1193.08	5159.62	1878.80	2.75	-662.84	7038.42	-0.09	0.04
EAST AFRICAN CABLES PLC	12	2018	1134.14	4400	0.26	702.01	5102.39	1501.27	3.40	-568.38	6603.66	-0.09	-0.39
EAST AFRICAN CABLES PLC	12	2019	1254.2	1748	0.72	2397.64	4145.37	2129.50	1.95	630.97	6274.88	0.10	1.12
EAST AFRICAN CABLES PLC	12	2020	1099.96	1526	0.72	3013.83	4539.81	1316.35	3.45	-753.22	5932.38	-0.13	0.25
EAST AFRICAN CABLES PLC	12	2021	956.512	1708	0.56	2772.98	4481.18	1071.09	4.18	-299.72	5580.07	-0.05	0.14
EAST AFRICAN PORTLAND CEMENT PLC	13	2012	2456.03	2399	1.02	6976.19	9375.37	4601.42	2.04	-972.72	13976.80	-0.07	0.66
EAST AFRICAN PORTLAND CEMENT PLC	13	2013	3449.45	3319	1.04	5723.97	9043.45	7090.26	1.28	1775.38	16133.70	0.11	0.98
EAST AFRICAN PORTLAND CEMENT PLC	13	2014	3171.45	3512	0.90	5500.29	9012.58	6704.68	1.34	-386.63	15717.26	-0.02	1.31
EAST AFRICAN PORTLAND CEMENT PLC	13	2015	3157.34	3351	0.94	5951.53	9302.99	13809.59	0.67	7157.07	23112.58	0.31	1.83
EAST AFRICAN PORTLAND CEMENT PLC	13	2016	27842.1	4962	5.61	4933.24	9895.36	17946.76	0.55	4145.76	53569.39	0.08	2.07

EAST AFRICAN PORTLAND CEMENT PLC	13	2017	27357.4	6196	4.42	4270.19	10466.41	16890.98	0.62	-1471.36	52765.68	-0.03	1.87
EAST AFRICAN PORTLAND CEMENT PLC	13	2018	1985.64	8122	0.24	4672.77	12794.80	24808.75	0.52	7853.27	37603.55	0.21	1.63
EAST AFRICAN PORTLAND CEMENT PLC	13	2019	3618.44	13789	0.26	1232.03	15021.13	21519.98	0.70	-3361.89	36541.11	-0.09	1.15
EAST AFRICAN PORTLAND CEMENT PLC	13	2020	2414.24	16244	0.15	179.99	16423.75	18753.14	0.88	-2769.35	35176.89	-0.08	0.64
EAST AFRICAN PORTLAND CEMENT PLC	13	2021	2443.44	13181	0.19	447.79	13628.99	21012.12	0.65	1887.58	34641.11	0.05	1.07
CROWN PAINTS KENYA PLC	14	2012	1589.24	1035	1.54	47.35	1082.06	1176.20	0.92	133.54	2258.26	0.06	1.76
CROWN PAINTS KENYA PLC	14	2013	2167.35	1569	1.38	14.92	1583.72	1361.71	1.16	213.84	2945.43	0.07	1.37
CROWN PAINTS KENYA PLC	14	2014	2866.64	2501	1.15	4.93	2505.48	1347.33	1.86	19.72	3852.81	0.01	0.50
CROWN PAINTS KENYA PLC	14	2015	3293.51	2976	1.11	209.90	3186.37	1352.78	2.36	30.75	4539.15	0.01	0.21
CROWN PAINTS KENYA PLC	14	2016	3781.75	3250	1.16	246.70	3496.91	1562.12	2.24	131.80	5059.03	0.03	0.40
CROWN PAINTS KENYA PLC	14	2017	4545.37	3818	1.19	296.11	4113.99	1757.62	2.34	223.29	5871.61	0.04	0.54
CROWN PAINTS KENYA PLC	14	2018	3893.82	3844	1.01	604.76	4448.83	1026.86	4.33	183.81	5475.69	0.03	0.15
CROWN PAINTS KENYA PLC	14	2019	3635.36	3638	1.00	576.03	4214.23	1307.31	3.22	317.24	5521.54	0.06	0.26
CROWN PAINTS KENYA PLC	14	2020	3821.24	3217	1.19	504.22	3721.35	1909.51	1.95	599.51	5630.86	0.11	3.10
CROWN PAINTS KENYA PLC	14	2021	5671.58	4038	1.40	338.83	4377.16	3430.19	1.28	731.23	7807.35	0.09	3.14
BAMBURI CEMENT PLC	15	2012	43038	7011	6.14	5166.00	12177.00	30861.00	0.39	4882.00	69614.00	0.07	3.41
BAMBURI CEMENT PLC	15	2013	43016	5981	7.19	5525.00	11506.00	31510.00	0.37	3673.00	69995.00	0.05	3.41
BAMBURI CEMENT PLC	15	2014	15545	6768	2.30	5104.00	11872.00	29119.00	0.41	3903.00	40991.00	0.10	3.67
BAMBURI CEMENT PLC	15	2015	18133	7693	2.36	4631.00	12324.00	29706.00	0.41	5872.00	42030.00	0.14	3.95
BAMBURI CEMENT PLC	15	2016	19000	7046	2.70	3946.00	10992.00	29819.00	0.37	5890.00	40811.00	0.14	4.22
BAMBURI CEMENT PLC	15	2017	13978	8133	1.72	5870.00	14003.00	33200.00	0.42	1973.00	47203.00	0.04	3.16

BAMBURI CEMENT PLC	15	2018	12233	9423	1.30	7453.00	16876.00	33270.00	0.51	572.00	50146.00	0.01	2.54
BAMBURI CEMENT PLC	15	2019	12092	8781	1.38	8172.00	16953.00	32132.00	0.53	359.00	49058.00	0.01	2.54
BAMBURI CEMENT PLC	15	2020	12709	7017	1.81	8378.00	15395.00	34051.00	0.45	1129.00	49446.00	0.02	2.83
BAMBURI CEMENT PLC	15	2021	14748	7876	1.87	8599.00	16475.00	35253.00	0.47	1380.00	51728.00	0.03	2.90
B.O.C Kenya Ltd	16	2012	1087.97	523.2	2.08	16.83	540.05	1454.81	0.37	197.37	1994.87	0.10	4.51
B.O.C Kenya Ltd	16	2013	1211.5	544	2.23	13.02	557.03	2076.06	0.27	202.64	2633.09	0.08	4.55
B.O.C Kenya Ltd	16	2014	1183.16	553.1	2.14	0.00	553.13	1747.19	0.32	229.63	2300.32	0.10	4.49
B.O.C Kenya Ltd	16	2015	1252.25	606.9	2.06	0.00	606.85	1714.11	0.35	148.60	2320.96	0.06	4.25
B.O.C Kenya Ltd	16	2016	1209.6	534.4	2.26	0.00	534.39	1689.45	0.32	126.32	2223.84	0.06	4.43
B.O.C Kenya Ltd	16	2017	1206.16	617.3	1.95	0.27	617.59	1611.08	0.38	39.38	2228.67	0.02	3.90
B.O.C Kenya Ltd	16	2018	1172.05	622.3	1.88	0.00	622.25	1519.50	0.41	65.58	2141.75	0.03	3.88
B.O.C Kenya Ltd	16	2019	1080.91	546.7	1.98	6.56	553.25	1439.39	0.38	55.90	1992.64	0.03	4.02
B.O.C Kenya Ltd	16	2020	2089.26	473.9	4.41	7.77	481.69	1607.57	0.30	101.66	2987.22	0.03	4.19
B.O.C Kenya Ltd	16	2021	1997.11	400.6	4.99	7.73	408.30	1588.81	0.26	108.35	2838.76	0.04	4.67
Car & General (Kenya) PLC	17	2012	3397.18	2928	1.16	633.78	3562.25	2143.15	1.66	266.56	5705.40	0.05	3.46
Car & General (Kenya) PLC	17	2013	4188.59	3767	1.11	630.65	4397.25	2504.18	1.76	315.79	6901.43	0.05	3.46
Car & General (Kenya) PLC	17	2014	5026.06	4190	1.20	1129.96	5320.41	2832.40	1.88	278.36	8152.81	0.03	3.35
Car & General (Kenya) PLC	17	2015	5276.59	4996	1.06	971.14	5966.93	3021.11	1.98	127.15	8988.05	0.01	3.28
Car & General (Kenya) PLC	17	2016	5666.85	5636	1.01	830.44	6466.66	3238.54	2.00	88.87	9705.20	0.01	3.21
Car & General (Kenya) PLC	17	2017	4812.21	4836	1.00	1206.47	6042.20	3357.81	1.80	79.84	9400.01	0.01	3.12

Car & General (Kenya) PLC	17	2018	5029.25	5079	0.99	1490.98	6569.54	3603.97	1.82	225.72	10173.51	0.02	3.09
Car & General (Kenya) PLC	17	2019	5549.83	6357	0.87	1514.64	7871.23	3612.51	2.18	182.36	11483.74	0.02	3.04
Car & General (Kenya) PLC	17	2020	4952.02	5722	0.87	2242.33	7964.17	3939.32	2.02	274.13	11903.49	0.02	2.92
Car & General (Kenya) PLC	17	2021	6882.83	7365	0.93	2228.40	9593.66	4853.95	1.98	887.24	14447.61	0.06	3.39
Trans-Century Limited	18	2012	7509.77	5846	1.28	3931.01	9777.16	12068.60	0.81	740.65	21845.75	0.03	2.53
Trans-Century Limited	18	2013	8784.23	5907	1.49	4714.76	10621.89	13218.39	0.80	626.43	23840.27	0.03	2.25
Trans-Century Limited	18	2014	8234.66	5163	1.59	2819.01	7981.96	11481.70	0.70	-2277.93	19463.66	-0.12	2.05
Trans-Century Limited	18	2015	8713.55	13835	0.63	4437.14	18272.21	3545.77	5.15	-2422.57	21817.98	-0.11	1.67
Trans-Century Limited	18	2016	5722.23	11362	0.50	3719.60	15081.69	3829.87	3.94	-863.89	18911.55	-0.05	1.40
Trans-Century Limited	18	2017	5804.5	14337	0.40	4515.97	18853.00	-112.03	-168.28	-4331.28	18740.96	-0.23	0.56
Trans-Century Limited	18	2018	3780.7	14940	0.25	5032.28	19972.77	-3304.59	-6.04	-3502.62	16668.18	-0.21	0.36
Trans-Century Limited	18	2019	4200.51	15098	0.28	5043.18	20141.22	-7134.73	-2.82	-3935.53	13006.48	-0.30	0.03
Trans-Century Limited	18	2020	5228.7	15758	0.33	6887.19	22645.18	-8956.18	-2.53	-1615.52	13689.00	-0.12	0.61
Williamson Tea Kenya PLC	19	2012	2447.22	1017	2.41	1280.97	2298.17	4945.06	0.46	854.74	7243.23	0.12	3.70
Williamson Tea Kenya PLC	19	2013	2684.36	738.6	3.63	1426.96	2165.58	5858.26	0.37	855.66	8023.83	0.11	3.92
Williamson Tea Kenya PLC	19	2014	2719.44	322.4	8.44	1636.32	1958.67	6580.53	0.30	740.72	8539.20	0.09	4.19
Williamson Tea Kenya PLC	19	2015	2749.45	320.3	8.58	1655.26	1975.52	6583.04	0.30	-227.64	8558.56	-0.03	3.53
Williamson Tea Kenya PLC	19	2016	3380.63	682.1	4.96	1534.97	2217.06	6714.34	0.33	482.75	8931.40	0.05	3.85

Williamson Tea Kenya PLC	19	2017	3013.12	867.8	3.47	1402.04	2269.86	6094.27	0.37	-261.59	8364.13	-0.03	3.30
Williamson Tea Kenya PLC	19	2018	3657.14	1225	2.99	1432.76	2657.72	6847.36	0.39	502.77	9505.07	0.05	3.67
Williamson Tea Kenya PLC	19	2019	2807.78	695.7	4.04	1258.89	1954.54	6317.38	0.31	-172.36	8271.92	-0.02	3.62
Williamson Tea Kenya PLC	19	2020	2212.78	565.2	3.91	1199.16	1764.40	6136.18	0.29	137.20	7900.57	0.02	3.80
Williamson Tea Kenya PLC	19	2021	2098.47	517.4	4.06	1571.20	2088.58	5959.90	0.35	-146.14	8048.48	-0.02	3.30
SASINI PLC	20	2012	1109.87	585.6	1.90	1910.55	2496.18	6426.80	0.39	-124.11	8922.98	-0.01	2.65
SASINI PLC	20	2013	1295.04	731.2	1.77	1940.21	2671.46	6382.91	0.42	91.69	9054.36	0.01	2.61
SASINI PLC	20	2014	1245.08	534.8	2.33	2273.77	2808.61	12120.97	0.23	45.42	14929.58	0.00	3.81
SASINI PLC	20	2015	2304.22	467.7	4.93	983.50	1451.21	11143.95	0.13	1101.21	12595.16	0.09	6.19
SASINI PLC	20	2016	3010.28	570.3	5.28	1174.21	1744.53	11361.61	0.15	576.99	13106.14	0.04	5.41
SASINI PLC	20	2017	2985.17	703.9	4.24	1176.21	1880.15	11315.88	0.17	339.41	13196.03	0.03	5.07
SASINI PLC	20	2018	2645.43	459.1	5.76	1178.52	1637.60	11323.78	0.14	293.52	12961.38	0.02	5.57
SASINI PLC	20	2019	1886.88	443.6	4.25	1345.71	1789.30	12885.06	0.14	-337.74	14674.36	-0.02	5.50
SASINI PLC	20	2020	1983.19	345.7	5.74	1178.98	1524.69	13053.07	0.12	12.61	14577.76	0.00	6.54
SASINI PLC	20	2021	2537.39	397.7	6.38	1301.06	1698.75	13443.99	0.13	573.20	15142.74	0.04	6.37
MUMIAS SUGAR COMPANY LIMITED	21	2012	7232.86	5721	1.26	6076.87	11797.53	15602.59	0.76	2012.68	27400.11	0.07	2.13
MUMIAS SUGAR COMPANY LIMITED	21	2013	7059.94	8409	0.84	5490.73	13899.50	13382.49	1.04	-1660.41	27281.99	-0.06	1.14

MUMIAS SUGAR COMPANY LIMITED	21	2014	4353.3	10635	0.41	2286.13	12921.28	10641.81	1.21	-2706.60	23563.09	-0.11	0.60
MUMIAS SUGAR COMPANY LIMITED	21	2015	2569.08	13670	0.19	830.93	14500.94	5932.04	2.44	-4644.80	20432.98	-0.23	-0.98
MUMIAS SUGAR COMPANY LIMITED	21	2016	1911.02	10826	0.18	8498.91	19324.94	7693.78	2.51	-4731.03	27018.73	-0.18	-0.69
MUMIAS SUGAR COMPANY LIMITED	21	2017	1860.29	17021	0.11	7069.85	24091.10	756.58	31.84	-6773.93	24091.10	-0.28	-2.26
MUMIAS SUGAR COMPANY LIMITED	21	2018	628.242	21633	0.03	-5897.38	15735.61	-14385.10	-1.09	-15141.25	15735.61	-0.96	-6.10
LIMURU TEA PLC	22	2012	130.762	10.54	12.41	67.25	77.79	242.23	0.32	101.83	320.02	0.32	5.11
LIMURU TEA PLC	22	2013	138.682	8.221	16.87	74.44	82.66	260.35	0.32	28.51	343.01	0.08	3.98
LIMURU TEA PLC	22	2014	132.008	16.33	8.08	70.55	86.89	251.72	0.35	-0.33	338.60	0.00	3.38
LIMURU TEA PLC	22	2015	163.565	28.19	5.80	59.71	87.90	254.26	0.35	3.04	342.16	0.01	3.56
LIMURU TEA PLC	22	2016	144.218	27.92	5.17	48.56	76.48	205.71	0.37	-19.07	282.19	-0.07	2.92
LIMURU TEA PLC	22	2017	140.277	39.44	3.56	34.79	74.23	187.78	0.40	-22.13	262.01	-0.08	2.65
LIMURU TEA PLC	22	2018	159.521	45.55	3.50	29.58	75.13	193.13	0.39	2.55	268.26	0.01	3.26
LIMURU TEA PLC	22	2019	139.615	16.67	8.37	24.97	41.64	194.03	0.21	1.90	235.67	0.01	4.73
LIMURU TEA PLC	22	2020	135.9	19.65	6.92	19.27	38.92	190.78	0.20	-3.67	229.70	-0.02	4.75
LIMURU TEA PLC	22	2021	113.858	9.731	11.70	1.65	11.38	182.29	0.06	-9.56	208.50	-0.05	11.33