

**FINANCIAL STRUCTURE AND FINANCIAL DISTRESS OF LISTED  
COMMERCIAL AND SERVICES FIRMS AT THE NAIROBI SECURITIES  
EXCHANGE, KENYA**

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**DECLARATION**

I declare this is my original work and has not been presented for examination in any University or any other Institution.

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## **DEDICATION**

This project is dedicated to my family.

## **ACKNOWLEDGEMENT**

I recognize the support of my supervisor, Dr. Margaret Kosgei for tirelessly guiding me. I also acknowledge the support of my family members and friends, May Allah bless you all.

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## **ABBREVIATIONS AND ACRONYMS**

<b>AHP</b>	Analytical Hierarchy Processing
<b>EBIT</b>	Earnings Before Interest and Tax
<b>EPS</b>	Earnings per Share
<b>GDP</b>	Gross Domestic Product
<b>KPCU</b>	Kenya Planters Cooperative Union
<b>MCDM</b>	Multi-Criteria Decision Making
<b>MM</b>	Modigliani and Miller
<b>NSE</b>	Nairobi Securities Exchange
<b>OLS</b>	Ordinary Least Square
<b>PCSE</b>	Panel Corrected Standard Error
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Equity
<b>SMEs</b>	Small and Medium Enterprises
<b>UNCTAD</b>	United Nations Conference on Trade and Development

## OPERATIONAL DEFINITION OF TERMS

<b>Financial Distress</b>	Are the extremely negative consequences of a business's weakening
<b>Financial Structure</b>	refers to the method by which a firm funds its assets
<b>Long-Term Debt</b>	is the proportion of debt that matures in 12 months or more from the reporting date
<b>Retained Earnings</b>	it's an amount in the company preserved to be used when needed or when the company is liquidated
<b>Share Capital</b>	is a source of funds contributed by the holders to exchange for shares
<b>Short Term Debt</b>	is the proportion of debt that matures in less than 12 months from the reporting date

## ABSTRACT

In the recent years, listed firms at Nairobi Securities Exchange have faced mixed performances financially some even experiencing massive financial distress and being delisted regardless of the sector. While many factors have been attributed to this, other scholar indicate that financial structure is to blame. This study sought to determine the effect of financial structure on financial distress of the listed non-financial firms in Kenya focusing on debts, retained earnings and shareholders capital. The study sought to anchor on the Pecking Order theory, MM theory, Cash Flow and Trade-Off theory. An explanatory design was adopted and the focus was on the 11 firms in commercial and services sector by the year 2019. To achieve the objectives, secondary data, spanning 5 years up to 2019 was used. Using this data, descriptive statistics, diagnostic tests, correlation and regression analysis were conducted. Before deciding on the use of either a random or fixed effect panel model, the study used Hausman specification method. The regression model was a random effect panel. The ideal software adopted was STATA version 13. The results on Altman Z score indicated that majority of the companies trading under commercial and services in NSE were experiencing low Altman Z score a clear indication of financial distress. There was a huge variations in the amount borrowed by various companies and when compared to short term borrowing results, it is clear that short term mean average borrowings was greater mean average long term borrowing. The results on retained earnings were low showing that majority of the companies had negative retained earnings reserves. The findings on ordinary share capital presented that on average the share capital amount remained constant for the period under consideration. The study concluded that short-term debt had a negative and significant influence on Altman Z score. The study concluded that long term debt had a negative and significant effect on Altman Z Score. The study concluded that retained earnings had a positive and significant effect on Altman Z Score. Therefore, retained earnings increase reduces the financial distress in a company. The study concluded that ordinary shareholders capital has insignificant effect on Altman Z score values and that its changes does not have any significant effect of financial distress. The study recommends alternative source of financing for these companies such as ordinary share capital and retained earnings. The companies should avoid high leverage ratio.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Commercial and service industries contribute significantly to Kenya's economic growth by creating jobs, increasing GDP, and generating foreign exchange earnings (UNCTAD, 2008). According to the Economic Affairs Institute (2017), total pay employment in both sectors increased from 55% in 1980 to 65% in 2017. Commercial and service firms should make effective use of their working assets to reduce costs and improve operational efficiency in order to achieve profitability (UNCTAD, 2008). Companies in diverse sectors of the country's financial independence work together to produce jobs which improve economic growth (Kihooto et al. 2016). However, in recent years, many businesses have been in financial trouble.

Many corporate failures related to financial arrangements, as well as later collapses in respectable global businesses, have had disastrous consequences in recent decades. In the year 2001, there was collapse of Enron, followed by WorldCom in 2002 then Parmalat in 2003 and GM as well as CIT in the years 2009 on reasons linked to financing structure (Outecheva, 2010). After years of dispute, the majority of financial theorists today agree that a company's ideal financial structure exists, and if so, how can it be determined? (Eiteman, Stonehill & Moffett, 2007) According to Eiteman et al. (2007), the traditionalistic school of thought, as well as Modiglian and Miller, has come to a halt. When a bad financial mix is employed, the way a company is funded is critical for both management and fund providers to ensure the company's performance and longevity (Owolabo & Inyang, 2013).

Abdul (2012) suggested that enterprises on the Karachi list had a lower risk of financial difficulty than companies with a debt-to-equity ratio that was balanced. The businesses also had a higher market value than their competitors. Pakistan, Javed, and Akhtar (2012), on the other hand, disagreed and shown that a lower debt-to-equity ratio had a substantial impact. In Istanbul, Saeedi and Mahmoodi (2011) agreed that an Istanbul-based corporation and its financial structure were well-balanced, with a significantly lower risk of financial difficulty than their partners.

In Teheran Iran, Akbarpour (2011) supported this theory to some extent. The financial framework, he claims, helped enterprises with more assets than equity avoid financial catastrophe. Ferati and Ejupi (2012) demonstrated that debt financing is more profitable than equity financing in Macedonia. That wasn't the case at all. Short-term loans were preferred over long-term debts in debt financing because long-term debts had a greater long-term impact. The bond firms in Shanghai, where Feng and Guo (2015) advocated against any debt, preferring equity since debt increases the risk of financial distress, provided a stark contrast.

The Nigerian Stock Exchange pushed Adekunle (2009) to focus on balancing company financial resources. The main cause of economic distress and delisting of most companies has been demonstrated to be a bad debt-to-equity ratio. Abor (2007) focused on the role of debts by comparing both South Africa and Ghana, and discovered that short-term debts had a greater influence on lowering financial distress than longer-term debt. Dube (2013) questioned Zimbabwe's financial structure and shown that it was a primary cause of financial difficulty, and that SMEs that were built with a strong balance between debt and stock performed better than those that were not. In Zanzibar, Yusuf at el had the opposing viewpoint, while Zeitun and Tian (2007) found that financial institutions have exacerbated their financial difficulties.

### **1.1.1 Financial Structure**

A company's financial structure shows the financing source for a business which can either be debt, capital or both (Abor, 2005). All funds received from investors, such as retained earnings, bonds, bonds payable, private equity, risk-capital funds, family bills, warrants, sovereign wealth funds, hedge funds, forward contracting bonds, salesperson finance, and business leases, are included in the company's financial structure. The four key variables: capital from shareholders and debts were used as measures of financial structure in previous studies (Owalabi & Inyang, 2013).

Ordinary share capital represents the value created by the owners and is generally debt-free. Equity contributors, like debtors, receive interest on their payments in the form of dividends (Titman et al., 2011). The share capital is calculated by comparing the market share value to the value of the audited financial books (Phylaktis et al., 2010; Oladeji, et al., 2015). Most scientists use net book value to determine the worth of a company's shares.

The portion of profits not distributed to shareholders is referred to as retained income (Dinayak, 2014). For research like Campbell (2012), Dinayak (2014), and Orwel (2015), reserve earnings were utilized as one metric of financial structure. Internal sources of retained income are simple to use. Furthermore, retentions are less expensive than external equities, do not dilute ownership, and have a positive connotation because they are viewed as future investments by stakeholders. However, because it is an unprecedented payout by equity owners, the retained profit is a restricted source of finance (Chasan, 2012).

According to Muhammad et al. (2014), businesses' short-term liabilities typically last a year. Short-term debts help a business's cash flow in its day-to-day operations. Studies like Muhammad, Saad

(2011), Akbas, Caliskan, Durer, and Karaduman (2011), and Khidmat and Rehman (2011) all used current debts as financial structural measures (2014). According to Muhammad et al. (2014), we have long-term debts when we owe money for more than a year. As a result, long-term obligations incur greater interest than short-term commitments. It was suggested that these debts may help a company function better, especially if they were properly handled. When the conditions are adverse, it poses a threat of insolvency. Because huge debts offer creditors less scenario protection and bankruptcy, highly leveraged corporations may have to sell their assets (Abor, 2007). Long-term debts were utilized as part of financial structure measurements in research such as Amor (2007), Ahmad, Ebaid (2009), Abdullar, and Roslan (2012).

### **1.1.2 Financial Distress**

Emery et al. (2007) defines financial distress is the worse consequence of a business being weakened by a variety of factors, including poor management, high business competition, unsustainable debts, litigations as well as unfavorable arrangements. Financial difficulty makes it difficult for a corporation to pay its financial responsibilities, according to Labie and Périlleux (2008). Companies enter this position as a result of internal and external obstacles, which can result in bankruptcy or even liquidation.

According to Outecheva (2007) signs of distress can be decreasing profits, increasing losses, unsatisfied employees, low delivery among others. A corporation cannot be distressed without default, he added, because of internal management concerns and operational practices. Some of the costs related to financial distress are insolvency costs which can be direct costs such as legal fees, and indirect costs such as the difficulty of conducting a business while it is insolvent. Internal company difficulties are characterized by financial signals as a result of poor performance, which



eventually leads to bankruptcy and financial distress. As a result of an inefficient resource deployment that has shown to be a weak strategy position (Crutzen & Van Caillie, 2007).

Bankruptcy might result in liquidation or administration in the case of a company that is unable to repay its creditors. Insolvency describes a situation whereby an entity's obligations outweigh its assets and some of the practices to correct it are reduced overhead, ongoing debt negotiation, and debt repayments. When insolvency on the balance sheet refers to negative net assets in the business, insolvency it demonstrates lack of ability to repay debts (Aasen, 2011).

In recent decades, the financial structure has highlighted the devastating impact of financial hardship among Kenya-listed enterprises. Many firms have been received, reorganized financially, or delisted from the NSE, demonstrating this (Motanya, 2009). The NSE's company list has been drastically reduced, owing to financial structure issues. Companies such as Uchumi Super Markets (2006), Lonhro EA (2001), Theta and KPCU (2009). Despite subsequent official reporting attributing this to aggressive finance, there doesn't exist empirical evidence (Musiega et al. 2013).

Financial distress can be measured in a number of ways. Shumway (2001) suggests employing explicative factors based on observable accounting and market-based measurements to predict risk model failure. However, as a measure of bankruptcy risk, this technique is related with Altman (1968). This was utilized by Beaver, McNichols, and Rhie (2005). This technique considers a business troubled if it is more likely to file a de-listing or receive a rating from a rating agency for bankruptcy or performance-related reasons, and it is less than Altman's "Z" rate, which in more than three categories' ratios the distress rate.

Beaver (1966) used financial parameters such pre-tax to sales ratio, earnings withheld over total assets, quick acquisitions under current liabilities, total asset sales, and operational income in total

liabilities to determine financial hardship. The manner through which the variables were chosen, however, remains unclear. These proportions did not receive any criticism. Normal assumptions were also ignored. Previous approaches had failed, and Altman's Z score was reliant on them.

A scoring model from Altman Z will be used to estimate financial distress. Other research, such as Mamo (2011), indicated that the model was 90 percent valid for forecasting financial hardship in Kenya's commercial banks, and Bwisa (2010) found that the model was 80 percent applicable for predicting financial distress in Kenya. Atosh and Iraya (2018) utilized the approach to find out if coded companies on the Nairobi Securities Exchange were in financial difficulties. Best practices in corporate governance

#### **1.1.4 Listed Commercial and Services Firms**

Companies registered on NSE commercial and service sector offer important businesses in Kenya. For example, the role of Kenya Airways in providing international flights is immense. On the other hand, NMG and Standard Group play important communication roles. Retail services, publication, gas and oil products, hotel services, and housing are among the other services accessible to businesses in this area. Kenya's economy is based on these services. They raise their living standards while also increasing GDP of Kenya. That is why these businesses attract the attention and interest of financial specialists (Kihooto et al. 2016).

Businesses and service organizations that efficiently manage financial structure components attempt to attain the best profitability and risk balance, according to Eljelly (2004). The ability of financial management to achieve success in the commercial and service industries is crucial (Haq et al. 2011). According to Yeboah et al. (2012), keeping a correct debt and equity balance is critical

for determining the liquidity condition of commercial and service organizations. The NSE currently has 12 companies in the business and services sector.

Companies have suffered performance issues in recent years. According to figures based on yearly NSE reports, Kenya Airways has continuously recorded losses for instance Kenya Shillings 25.7 B, 26.2 B, 10.22 B, 7.5 B and 12.9 B in the consecutive years starting 2015 to 2019 (NSE, 2019).

Other significant companies in this category include Uchumi stores, which were redeemed from the NSE in 2006 and re-listed in 2011. (National Science Education, 2011). Other businesses, such as Sameer Africa, have also recorded a decrease in wealth, going from a Kshs 104.7 M profit to Kshs 686.4 M loss in 2018 (National Science Foundation, 2017). Over the recent year, two commercial services businesses – Kenya Airways and Deacons (EA) plc – have been suspended from the NSE due to ongoing financial difficulties (NSE, 2020). These results are alarming; hence the study's conduct is critical.

## **1.2 Statement of the Problem**

Companies listed on the NSE confront challenges, which have resulted in some of them being delisted in the recent ten years (Kihooto, Omagwa, Wachira & Emojong, 2016). Kenya Airways and Deacons (EA) plc, both commercial services companies, have been suspended from the NSE in the last year due to ongoing financial difficulties (NSE, 2020). Statistics for a few enterprises, such as Kenyan Airlines, revealed that they were losing money on a regular basis, with losses of thousands of shillings (NSE, 2019). The NSE received and re-listed Uchumi stores for 2011. (National Science Foundation of the United States of America, 2011). Other businesses, such as Sameer Africa, have also recorded a decrease in wealth, going from a Kshs 104.7 M profit to Kshs 686.4 M loss in 2018 (National Science Foundation, 2017).

Muchiri et al. (2016) as well as Chebii et al. (2011) suggest that these enterprises' financial distress is related in their financial structure. As a result, questions about these companies' financial structures and their impact on financial crisis are raised. The appropriate debt-to-equity ratio can impact firm value and financial health (Khidmat & Rehman, 2014; Yusuf et al. 2014). The bulk of NSE statutory firms' financial issues and bankruptcy, it was stated, are mostly due to the financing structure (Chebii et al. 2011). The financial difficulties that NSE-listed firms have experienced over the previous 10 years has been linked to the financial structure (Muchiri, Muturi & Ngumi, 2016). The company's survival can be jeopardized if the financial structure is mismanaged (Muhoro, 2013).

Another reason for the study is the contextual gaps in previous research on the subject. Darmawan and Supriyente (2018) focused on Indonesian mining firms, while Václav and David (2017) built a model to predict financial difficulty for agricultural enterprises in the European Union, and Zulkarnane (2015) produced a model to predict financial distress for Malaysian companies. Furthermore, Darmawan and Supriyanto released the report (2018) Since this study focuses on a capital structure except for short-term debt, conceptual research gaps have been found for local studies such as Muigai (2016).

Previous studies have also demonstrated methodological research shortcomings. While Ikpesu and Eboiyehi (2018) and Muigai (2016) used the Panel Corrected Standard Error model (PCSE), Wesa and Otinga (2018) used Panel Analysis on Ordinary Least Square, and Nketiah (2017) used the Panel Corrected Standard Error model (PCSE) (AHP). This demonstrates that various approaches were used to investigate the same subject, revealing a methodological gap in the study. This gives an incentive to explore the impact of the financial system on the financial distress of trading and service companies on the Nairobi Securities Exchange through a panel approach.

### **1.3 Research Objectives**

The section gives a description of the main objective of the study as well as the specific objectives.

#### **1.3.1 General Objective**

To establish the effect of financial structure on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

#### **1.3.2 Specific Objectives**

- i. To establish the effect of ordinary share capital on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya
- ii. To determine the effect of retained earnings on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya
- iii. To examine the effect of long-term debts on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya
- iv. To establish the effect of short-term debts on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

### **1.4 Research Hypotheses**

The study sought to test the following null hypotheses:

**H<sub>01</sub>:** Ordinary Share Capital has no significant effect on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

**H<sub>02</sub>:** Retained Earnings has no significant effect on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

**H03:** Long-Term Debts has no significant effect on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

**H04:** Short-Term Debts has no significant effect on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

### **1.5 Significance of the Study**

Managers, investors, debtors, and potential researchers can find this study findings important. The findings of the study should offer managers with early indications of deteriorating performance, allowing them to intervene and lessen the danger of financial difficulty. It is possible to keep track of the financial structure of the businesses.

By comprehending the primary elements (financial structure) that contribute to financial distress, investors might avoid investing in risky firms. Investors can look at the patterns in financial structures to see if a company's financial difficulty is improving. By paying attention to signs of impending financial trouble, lenders should be able to accurately analyze the firm's financial status and avoid capital losses and counterparty risk charges. Creditors can also track financial patterns to see if a company in financial difficulties is on the right track.

Government officials and listed company regulators, including as the CMA and NSE, utilize the findings to build harsher policies aimed at improving the performance of bankruptcy firms. On the basis of the recommendations from this study, the policy for funding decisions on the financial structure might be strengthened.

The goal of the research is to fill a theoretical financial literature vacuum. In the Kenyan setting, the utility of the Theory of Pecking Order, Trade-Off, and Modigliani Miller capital structure

theories will be tested. This will help to improve the theoretical literature review for future research.

Future scholars in this field may be able to broaden the study's conceptual and contextual reach. On the basis of the research gap discovered in this study and not fully exploited and filled, future studies can further develop and investigate the notion.

### **1.6 Scope of the Study**

The study linked financial structure to financial distress among Nairobi Securities Exchange-listed Commercial and Services firms. Ordinary share capital, retained earnings, long-term obligations, and short-term debts are some of the specific elements under consideration. The 12 firms listed as at 2020 on NSE in the commercial and service sector formed the unit of analysis.

Because of its importance to Kenya's economy, this industry is being highlighted. As a result of the aforementioned, several of the listed commercial and service firms, such as Uchumi, are currently in crisis, necessitating the exploration of relevant remedies. From 2015 through 2019, the time period covered was five years. This is supported by the fact that, in comparison to past years, a large proportion of businesses were in crisis during that time. In terms of COVID-19, 2020 will not be taken into account because it is a shock year with many unknowns.

### **1.7 Limitations of the Study**

One of the limitations to be expected is in availability of data in some firms which may have been delisted at one point. The study only ran up to 2019 and didnt consider the years 2020 and 2021 because of the shocks induced into the economy by COVID-19.

## **1.8 Organization of the Study**

The background of the study was discussed in this chapter, as well as the financial structure and its impact on financial distress from several angles. The significance of the study, the problem statement, the objectives, and the research hypotheses were also discussed in this chapter. In addition, the study's limitations and scope must be considered. The second chapter is a review of the literature on the impact of financial structure on financial distress in a variety of circumstances. This section provides an overview of the relationship between the study variables, identifying research gaps and suggesting areas for further investigation. The theoretical literature as well as research gaps were also provided in this chapter while the last chapter documents the methodological approach to be adopted to achieve the objectives. Research findings and discussions are covered in chapter four. Chapter five summarizes the results and presents the conclusion and recommendations based on the objectives.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The impact of financial structure on the financial status of publicly traded companies is discussed in this chapter. This chapter includes both theoretical and empirical research. Theoretical literature describes the theories that underpin the research, whereas empirical literature analyzes other research on the same topic. The studies examined have also been chastised for pointing out research gaps that the study intends to fill.

#### **2.2 Theoretical Literature Review**

##### **2.2.1 Trade-Off Theory**

Most corporations target debt levels that balance their tax benefits, according to an extension of the MM hypothesis. These businesses are planning their financial structures around tax rates, bankruptcy, and corporate risk. In summary, a balance between the benefits and costs of borrowing while sticking to its investment goals. According to the idea, the optimal financial structure strikes a firm balance between the best tax benefits and borrowing costs (Serrasqueiro & Caetano, 2015).

Various scientists, on the other hand, have disputed the idea assuming that a financial system offers advantages. The premise that tax benefits are valued through tax interests has been questioned. According to the argument, since loan interest is not taxed, it is advantageous. Scientists claim that firms have less leverage in reality than this hypothesis suggests.

In the context of this study, the theory explains why debt financing is a better funding method than capital equity financing. In this method, the debts' costs and benefits are considered. Because debts have a tax advantage, the idea indicates that using them to reduce interest payments is good. It also

claims that businesses with strong development potential would want to borrow less in order to prevent losing value. As a result, it may be claimed that theory promotes debt financing as a means of reducing corporate financial difficulty and associates stock financing with a warning of financial distress due to the high expenses associated with it.

### **2.2.2 Pecking Order Theory**

According to Myers (1984), a company's financing is done in a hierarchical manner. If a company's internal funds are insufficient to finance its expansion, the idea indicates that it will borrow. The most desired method of financing, however, is retained earnings (internal finance), which are internal sources before external funds such as liabilities are utilized.

Internal funds are less expensive and do not require additional information from outside parties, according to the hypothesis. When a corporation takes on debt, it incurs three key expenses: agency costs, bankruptcy costs, and information asymmetry. In comparison to loans, a corporation must reveal more information to outside parties, perhaps jeopardizing its competitive advantage. Firms can expose sensitive information to outsiders in order to obtain external financing, according to the theory. However, it is unaware that other factors may influence the decision to invest a company. This criticism implies that the theory should not be viewed as a substitute for Tradeoff theory, but rather as a complement.

Its significance in this research is to demonstrate how important a company's financial structure is. According to this notion, in order to finance a corporation, a pecking order must be established, with internal financing taking precedence. It shows that when earnings are large or companies are profitable, they are more likely to employ retained income first in their investments and transaction needs. Companies turn to third-party debt providers when their earnings are spent, and when they

run out of stock, equity issues check the order of funding activities. Finally, the idea connects the financing structure to financial difficulty because if the Company does not follow the Pecking order, it may find itself in financial distress.

### **2.2.3 Modigliani Miller Capital Structure Theory**

The notion was presented by Modigliani and Miller (1958). It contends that the financial structure of a corporation has no bearing on its value, performance, or distress. The theoretical documents demonstrate that, regardless of the financial structure used, a firm can function well or suffer financial trouble, whether it is based on debt or equity.

The arguments have been disputed, along with his assumptions that the operational market is faultless without default concerns, taxes and same interest rate on loans. Another significant divergence from theory is that every business has equal access to data. According to the principle, regardless of the funding mechanism used, a corporation should expect a return on its money (Brusov, Filatova, Orekhova & Eskinarov, 2015). These assumptions would be unattainable in a perfect world. The development of Muiruri and Wepukhulu's trade-off hypothesis is tied to this criticism (2018).

In regard to this study, this theory offers a new way of looking at financial structure as a determinant of financial distress among publicly traded corporations. The hypothesis downplays the link between financial structure and financial trouble, claiming that it makes little difference how a corporation is funded.

#### **2.2.4 Cash Flow Theory**

The theory by Beaver's (1966) is based on the following principle: the larger the net cashflow, as well as lower debts, the lower the risk of failure. Companies that fail to meet the four premises fail and go bankrupt, according to the notion (financially distressed).

Companies with lower net cash-asset flow from operations, more debt, larger operational funds, and smaller reservoirs are more likely to collapse and be in financial difficulties, according to the report. Liquid assets, debt, operational expenditures, and reservoirs are some of the elements that might contribute to financial crisis for a corporation, according to the concept.

#### **2.3 Empirical Review**

In this sub-section, the link between the financial structural structure and financial distress is reviewed by other studies. The evaluation serves as a basis to identify research gaps to be fulfilled by the study. This section was arranged by goal.

##### **2.3.1 Ordinary Share Capital and Financial Distress**

Based on panel data of 338 financially troubled companies, Meuleman et al. (2020) discovered that equity financing has been negatively associated to financial distress amongst enterprises while studying whether equity capital is a driving force of commercial bank financial distress in the United Kingdom. However, given its focus on the developed economy, the study presented a contextual diversion from this study.

Turaboglu et al. (2017) conducted a study linking capital structure with financial distress among Turkish firms. Using Altman Z-Score and Springate S-Score as measures of distress, the study

adopted a regression analysis which supported the Pecking Order concept. It was documented that capital was negatively linked to distress.

However, because the study was conducted outside of Kenya, the findings cannot be generalized to the Kenyan context, as the Turkish and Kenyan economies are not comparable. The study's goal is to close a research gap in this area. While the Springate S-Score was employed to quantify financial distress in this study, Altman's Z-score was utilized instead. This point of divergence also exposes a methodological inquiry flaw.

Ikpesu and Eboiyehi (2018) similarly interrogated capital structure to financial distress in Nigerian manufacturing enterprises. The study variables were corporate financial distress, common share capital, debt, income earnings and corporate size. The association was determined using a Panel Corrected Standard Error (PCSE) model where it was shown that financial distress was negatively affected by ordinary share capital, loans, and equity, whereas profitability and asset tangible age of corporate financial distress have a favorable impact. This demonstrates that a balanced finance arrangement lowers financial challenges.

The size, tangibility of assets, revenue growth, profitability, and firm age forming study variables, presented a conceptual research gap since this study will not consider such control variables. The study also has a contextual research gap because the market conditions in Nigeria differ from those in Kenya, therefore the findings cannot be used to create a Kenyan scenario.

Wesa and Otinga (2018) similarly conducted a similar study and established that financial liquidity, financial leverage, and ordinary share capital all significantly led to financial distress. The study yielded valuable insights, although the emphasis on other variables such as financial leverage and capital structure contrasts from the study's focus on financial structure. This reveals

a conceptual research gap that can be filled by confining this study to financial structure and financial distress. Although this study looks at the entire source of listed firms, this study excludes non-financial companies because financial companies are heavily regulated and regulators can spot financial distress early.

Muigai (2016) while establishing whether capital structure determined financial distress among Kenyan listed firms, also adopted the use of control variables and moderating effect of firm size. Through a PCSE model, it was demonstrated that while financial leverage worsens the distress position of the firms, share capital and long-term debt, eased it. The importance of the study's contribution cannot be overstated. However, the main point of deviation from this study was the use of firm size as a moderator hence a need to fill this research gap.

### **2.3.2 Retained Earnings and Financial Distress**

To predict bankruptcy in the Indian aviation business, Shome and Verma (2020) employed the Altman Modified Z score model. The study found that three of the four airlines are in substantial financial hardship, and that the Altman Modified Z' score, may be used to test for financial distress in the airline business. In terms of methodology, the study differs from this one in that it employs three models to forecast financial difficulty. The research also looked at Indian firms that were not included in the study.

Darmawan and Supriyanto (2018) looked at the impact on mining businesses' financial hardship in Indonesia in order to anticipate bankruptcy. Among the study's findings, it was discovered that retaining earnings in the asset ratio had a favorable impact on company financial difficulty. The findings show that when internal funds are not used to settle charges such as taxes, an enterprise's chances of staying out of financial trouble increase. The research looked at the mining industry in

Indonesia thus presenting contextual research gap since this study focuses on Kenyan firms listed at the commercial services sector.

Nketiah (2017) investigated the investment choice using the Altman model to forecast organizational financial hardship in panel data gathered between 2010 and 2014, focused on US-listed petroleum and gas businesses. Working capital, retained earnings, pre-interest and tax income (EBIT), capital market value and sales (independent variables), and financial disruption were all considered in the research (dependent variable). The association between financial distress and working capital, income retained, and EBIT was found to be negative and significant, according to the study, which used panel-retrieval models to examine it. Retained income has been demonstrated to have a lower likelihood of causing financial hardship. In addition to evaluating retained profit, the study looked on non-financial characteristics such as working capital. This research differs from Nketiah's in that it focuses on the impact of a financial framework (2017).

Fachrudin was the one who discovered the link between financial distress and the financial health model (2020). The Indonesia Stock Exchange's public manufacturing companies were the focus of the context. Working capital, retained income, and sales were all linked to the total asset ratio. The findings reveal a link between withheld income and financial difficulties for these businesses. Because the concentration was in Indonesia, the findings cannot be widely disseminated in Kenya. As a result, there is a lack of context in the research.

A related study was conducted by Fredrick (2018) in Nigeria focusing on corporate financial distress, retention income, debt ratio, business size, tangibility, income growth, profitability, and company age are some of the characteristics covered in the research. Through PCSE, it was demonstrated that capital structure leads to corporate financial distress, profitability, and asset

tangibility among the listed firms. The study however presents variables which are conceptually different from the current study, given that this study doesn't have control variables.

### **2.3.3 Long Term Debts and Financial Distress**

Susanti et al. (2020) in a focus on 21 firms in the Indonesian Bourse documented that long term debts worsens financial distress. In France's SMEs, Mselmi et al. (2017) tested the link between corporate size, solvency ratio, liquidity ratio, profitability, and financial distress through Logit, Vector Support and Hybrid Models. It was documented that distressed businesses are less resourceful, less repayable, and less resourceful, according to the empirical findings. Liquidity, profitability, and solvency ratios have also declined (high long-term debts). The research was conducted in France among non-listed SMEs thus presenting contextual differences. In comparison to this study, which focuses on publicly traded enterprises in a developing country, there is a contextual perspective.

Václav and David (2017) attempted to create a model that could forecast financial difficulties in European agriculture companies. The factors included in the study were liquidity, profitability, and long-term debt ratios. To get the greatest results, the researchers applied logistic regression, the vector support approach, decision-making, and adaptive boost based on decision-making treaties. It was discovered that as the distance from bankruptcy grows, the average accuracy of financial crisis forecasts decreases. On the contrary, long-term debts strongly linked to financial distress. The study focuses on financial distress prediction models, which is not the same as this one. Aside from the long-term debt ratio, other characteristics such as liquidity and profitability were considered. Long-term debt and other financial structural indicators were the subject of this study, which reveals a conceptual research vacuum.



Khoja, Chipulu, and Jayasekera (2019) conducted a study on financial distress in different countries. Macroeconomic, industrial, and accounting factors, as well as financial ratios, were all included in the study. To identify and classify these important elements in terms of relative importance, this research uses a fluidized analysis hierarchy (AHP) technique and a decision-making strategy (MCDM). The findings revealed that operating revenue per air kilometer and long-term debt are two key variables in this industry that may lead to distress. Long-term loans, as well as other macroeconomic and industrial issues, were explored in this study. The focus of the current study is on the financial structure and its implications for financial distress. A conceptual research gap emerges as a result of this.

Songhor (2018) established the impact of debt financing on the financial hardship of Nairobi Securities Exchange companies and demonstrated that financial distress negatively correlated with the method of measuring financial leverage, but liquidity, productivity, solvency, and asset utilization were positively correlated with financial distress. Multiple regression was used in this strategy. This study looks at a variety of criteria to assess financial distress, but it isn't solely focused on financial structures. While short- and long-term debt ratios have been used, other criteria that are different from those used in this study have been incorporated, resulting in a conceptual research gap.

#### **2.3.4 Short Term Debts and Financial Distress**

Kholisoh and Dwiarti (2020) conducted a study of macroeconomic variables and selected organizational determinants in predicting financial distress. It was indicated that current assets and capital structure worsens distress while inflation and interest rates don't have any impact on distress. Zulkarnain (2015) created a model that predicts financial hardship in corporate organizations and used it to track the likely demise of financially distressed Malaysian companies

in 1997. Short-term obligations on total assets, asset turnover, total asset stock, inventory sales, and cash on total assets were among the major focal variables. Z analyzed the data and found that company liquidity (the ratio of short-term obligations to assets) is inversely related to financial hardship. However, because the research was conducted on a well-developed Malaysian economy with well-developed securities markets, the findings cannot be applied to Kenya. In the context, there is a research void.

Pratheepkanth (2011) linked debts to financial distress among the listed Sri Lankan firms. The variables used were the debt equity and total equity-to-equity ratios. The research was conducted across five years, from 2005 to 2009. In the study, financial distress was measured using net profits and it was reported that the association between the primary study characteristics was negative but weak (insignificant). The Altman Z-score will be used in conjunction with gross and net profit margins in this investigation.

In South Africa, Rayan (2010) who measured financial distress through ROE, ROA, and EPS established that all these distress metrics were found to be adversely correlated with the utilization of short-term equity loans in this study. As a result, increasing liquidity helped South African businesses deal with their financial hardship. He ascribed the favorable relationship to the excessive use of corporate liquidity finance in an attempt to take advantage of tax loopholes. Instead of using ROE, ROA, and EPS to assess financial hardship, the study proposes using Altman's Z-point. The goal of the research is to close this gap in methodological research.

Mbai (2018) found the driver of financial difficulty for a group of Nairobi Securities Exchange companies. Financial leverage, liquidity and financial distress profits were the three variables examined through panel data between 2013 and 2017 narrowing to Kenya Airways and Uchumi

Supermarkets. A common regression model was the Least Squares model which strongly linked the study variables.

### **2.3.5 Financial Structure and Financial Distress**

Kaumbuthu (2011) argued that the debt ratio of the listed companies was crucial in predicting financial performance and financial crisis. An uneven funding mix, according to Maina and Kondongo (2013), increases the likelihood of business financial difficulty. One of the key reasons why a number of firms have been delisted is being linked to financial structure choices and mismanagement.

The financial framework for the performance of enterprises, according to Muchiri, Muturi, and Ngumi (2016), is a significant factor of financial distress, particularly in East Africa. Other studies, such as Esfahani (2006), concurred that a company's financial structure must be balanced in order to avoid excessive protection against short and long-term financial problems. Recognizing the importance of the financial structure, Owalabi and Inyang (2013) also acknowledged that other factors such as cultural context, political risk, monetary policy, and fiscal policy might influence it. The following Table 2.1 summarizes the research gaps.

**Table 2.1 Summary of Research Gaps**

<b>Author</b>	<b>Topic</b>	<b>Findings</b>	<b>Research Gaps</b>
Ikpesu et al. (2018)	Capital structure and financial distress among listed manufacturing firms in Nigeria.	Capital structure (ordinary share capital, debts and equity) affects corporate financial distress negatively and significantly	Methodological Research gap Contextual Conceptual
Darmawan et al. (2018)	Financial ratios and financial distress among mining firms in Indonesia	Retained earnings to assets ratio positively impacted on financial distress	Contextual research gap Conceptual research gap
Fredrick (2018)	Capital structure and Financial distress among listed manufacturing firms in Nigeria.	The debt-equity ratio worsened financial distress while profits eased it	Methodological research gap Conceptual Research gap Contextual research gap
Songhor (2018)	Debt financing and financial distress among listed Firms at NSE	While financial leverage made financial distress worse, liquidity improved it	Conceptual research gap
Mbai (2018)	Determinants of financial distress among listed firms at NSE	While financial leverage made financial distress worse, profits improved it	Contextual research gap Conceptual research gap Methodological research gap
Turaboglu et al. (2017)	Financial distress and capital structure among listed firms in Turkey	Debts increased the worse effects of financial distress	Contextual research gap Conceptual Research gap
Mselmi et al. (2017)	Prediction of financial distress among French SMEs	Debts increased the worse effects of financial distress	Methodological research gap Conceptual Research gap Contextual research gap

<b>Author</b>	<b>Topic</b>	<b>Findings</b>	<b>Research Gaps</b>
Muigai (2016)	Capital structure and financial distress among non-listed firms at NSE	The use of long term debts and equity mitigated the negative effects of financial distress	Methodological research gap Conceptual research gap
Zulkarnain (2015)	Prediction of corporate financial distress among Malaysian Firms	Firm liquidity (short term debts to assets) is inversely proportionate to financial distress.	Contextual research gap Conceptual research gap Methodological research gap

**Source: Researcher (2021)**

## 2.4 Conceptual Framework

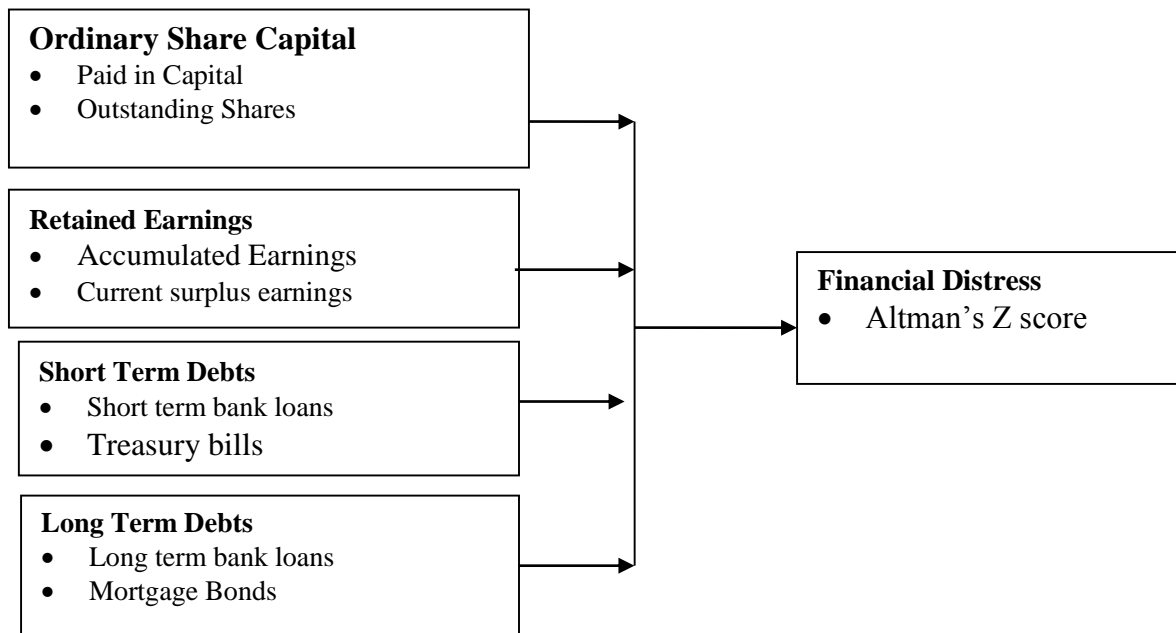
A conceptual framework was used to figuratively demonstrate how the study variables relate to each other as shown in Figure 2.1. The figure also shows the measures of the study variables.

### Independent Variables

### Dependent Variable

#### Financial Structure

#### Financial Distress



**Figure 2.1 Conceptual Framework**

Source: Author (2021) obtained from various sources

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The chapter documents the various approaches adopted to achieve the study objectives. It not only highlights the design, population and data, but also the analysis procedures and presentation.

#### **3.2 Research Design**

A step-by-step method for achieving the study's objectives is the conceptualization of a research design (Walliman, 2017). The study used an explanatory research approach to establish a causal link between financial structures and financial hardship of publicly traded commercial service organizations. This research design was appropriate for establishing a cause-and-effect link in this investigation (Litosseliti, 2018).

#### **3.3 Target Population**

The study sought to test the concept among the listed commercial services firms. As at the end of 2020, a total of 11 firms were in this category. The focus on this category was justified in the aforementioned chapters.

#### **3.4 Sampling Procedure and Sample Size**

The process of selecting a subset from the total population is defined by King and Mackey (2016) as sampling. A census of all the 11 NSE companies in the commercial services sector were undertaken in the study. This is the only target population available for the sector-level study, based on the nature of the study, and a census was conducted on the whole set as it is small. The

selection criteria was, however, that only companies that have been continuously listed between 2015 and 2019 for five years.

### 3.5 Data Collection Instruments

Kumar (2019) defines instruments for data collection as strategies or data collection tools. A data collection template (Appendix I) was used to collect the data from annual reports at NSE.

### 3.6 Data Collection Procedure

The study used secondary data collected between 2015 and 2019 (5 years) on the measures of financial structure that is amount of short-term debts, long term debts, retained earnings and shareholders' equity. In addition, the variables used to calculate Altman's Z score were shown in Appendix II.

### 3.7 Operationalization of the Study Variables

The independent variable of the study was financial structure operationalized as Ordinary Share Capital, Short term debts, long term debts and Retained earnings while the dependent variable was financial distress measured as Altman's Z-score as summarised in Table 3.1.

**Table 3.1 Operationalization of the Study Variables**

Variable	Type of Variable	Scale	Measurement
Ordinary Share Capital	Independent	• Ratio Scale	<ul style="list-style-type: none"> <li>• Paid in Capital</li> <li>• Outstanding Shares</li> </ul>
Short Term Debts	Independent	• Ratio Scale	<ul style="list-style-type: none"> <li>• Short term bank loans</li> <li>• Treasury bills</li> </ul>
Long Term Debts	Independent	• Ratio Scale	<ul style="list-style-type: none"> <li>• Long term bank loans</li> <li>• Mortgage Bonds</li> </ul>
Retained Earnings	Independent	• Ratio Scale	<ul style="list-style-type: none"> <li>• Accumulated Earnings</li> <li>• Current surplus earnings</li> </ul>
Financial Distress	Dependent	• Ratio Scale	<ul style="list-style-type: none"> <li>• Altman's Z score</li> </ul>



### 3.8 Data Analysis and Presentation

The approaches for panel data analysis was used. In addition, descriptive and trends analysis were conducted. Brinkmann (2014) defended this decision, claiming that it takes into account data heterogeneity, produces more relevant results, has less collinearity, and allows for better research of change dynamics than time series modeling. This form of data analysis was required because the study was collecting data for each firm throughout time.

#### 3.8.1 Panel Data Analysis

The association between financial structure and financial distress was determined using a panel regression study among NSE listed commercial services companies. Between a fixed effect (FE) and Random Effect (RE) panel modeling, the Hausman specification method was adopted to determine the appropriate regression model. The research used STATA statistic software version 13. The Z score, devised by Altman as adopted in other studies by Mamo (2011), was adopted to measure distress. According to Bwisa (2010) the model is 80% accurate. The inclusive model espoused was:

$$y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_t$$

Where:

$y_{it}$  = Financial Distress of firm  $i$  at time  $t$

$X_{1it}$  = Retained Earnings of firm  $i$  at time  $t$

$X_{2it}$  = Shareholders Equity of firm  $i$  at time  $t$

$X_{3it}$  = Long Term Debt of firm  $i$  at time  $t$

$\beta_0$  = the constant term

$\beta_1 - \beta_4$  = Coefficients parameters

$\epsilon_{it}$  = Error term where  $i$  is cross sectional and  $t$  time identifier

### **3.9 Diagnostic Tests**

Various tests such as multicollinearity, Mann-Whitney Wilcoxon test, Autocorrelation test, Heteroskedasticity test and Stationarity test was conducted before analyzing the data. This section presents a description of the tests.

#### **3.9.1 Multicollinearity Test**

The term "multicollinearity" refers to a strong relationship between the forecast variables, which leads to erroneous findings. The researchers wanted to see if the predictor factors had a strong relationship with multicollinearity. This method makes use of the Variance Inflation Factor methodology. Multicollinearity is defined as a number greater than 10 (Mugenda & Mugenda, 2009).

#### **3.9.2 Autocorrelation test**

Autocorrelation occurs when the error conditions are highly correlated (Mangeni, 2018). The presence of first-order serial autocorrelation was tested because the data was collected over a period of time (5 years). The Panel Data employed the Wooldridge Autocorrelation Test. The nullifying hypothesis of a Wooldridge Autocorrelation test is not a first-line correlation if the p-value is significant ( $p\text{-value} < 0,05$ ) (Flick, 2015).

#### **3.9.3 Heteroskedasticity test**

When the error term changes are not consistent, this is known as heteroscedasticity (Mangeni, 2018). The investigation also looked into the assumption of homoscedasticity. The Heteroscedasticity Likelihood Ratio Test used to ensure that the regression model's residuals were

kept consistent throughout time. When the term "homoscedastic" was employed, the test has zero hypothesis. The null hypothesis is rejected (less than 0.05) if the value Prob>chi2 is important (Brinkman, 2014).

#### **3.9.4 Test for Stationarity**

Non-stationarity occurs when a set of data contains statistical features that lead to erroneous conclusions (Field, 2009). To see if there are unit roots, the study examines the data's stationary character. Because the study's data has a temporal component. The presence of a unit root in the Levin Lin Chu technique was being investigated. This approach outperforms other tests like IPS and Breitung when the data are panels.

#### **3.9.5 The Wilcoxon Mann-Whitney test**

Mann-Whitney Wilcoxon test was used to show whether there is a significant difference in the financial structure of the distressed and non-distressed firms.

#### **3.9.6 Hausman Specification test**

In choosing between a random effect and a fixed effect model, further tests such as Hausman was used to decide the proper model to apply.

## **CHAPTER FOUR**

### **RESEARCH FINDINGS AND DISCUSSIONS**

#### **4.1 Introduction**

The chapter presents the descriptive, diagnostic and inferential statistics results relating to the study variables. The objective of the study was to establish the effect of financial structure on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya. The results were based on the specific objectives; to establish the effect of ordinary share capital on financial distress, to determine the effect of retained earnings on financial distress, to examine the effect of long-term debts on financial distress and to establish the effect of short-term debts on financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya

#### **4.2 Descriptive Analysis Results**

The study's independent variables were; ordinary share capital, retained earnings, long-term debts and short-term debts while the dependent variable was financial distress of listed Commercial and Services firms at the Nairobi Securities Exchange, Kenya. The study targeted 11 listed commercial and services companies in NSE. However, complete data was obtained from 8 companies namely; Express Kenya, Sameer Group, Scan Group, Nation Media, Standard Group, TPS, Kenya Airways and Longhorn Publishers. These formed a success rate of 73%, and according to Kothari (2010) a response rate of 50% is sufficient to carry out a data analysis. The Data presented in table 4.1 were obtained from audited annual reports of the 8 listed commercial and services companies.

**Table 4.1 Descriptive Statistics**

	Obs	Minimum	Maximum	Mean	Std. Deviation
Altman Z Score	40	-.85	8.52	1.3562	1.70
Short Term Debt	40	.00	113067	9127.13	27606.06
Long Term Debt	40	.00	104175	3072.25	16424.78
Retained Earnings	40	-80224	15	-4054.21	19256.81
Ordinary Share Capital	40	146.25	7482	1261.01	2179.079
Valid N (listwise)	40				

**Source: Researcher (2022)**

The descriptive results in Table 4.1 presents the Altman Z score, the short term debt, long term debt, retained earnings and ordinary share capital. The results on short term debt, long term debt, retained earnings and ordinary share capital were in millions of Kenya Shillings (000000). The results on Altman Z score was obtained through the formula  $Z=1.2X_1+1.4X_2+3.3X_3+0.6X_4+1.0X_5$ , where a company was considered to be healthy if the Z score exceeds 2.99. If the score was lower than 1.81, then the company was considered to be in financial distress. A score between 1.81 and 2.99 was considered “grey” and it needs to be monitored closely. The study results on Altman Z Score indicates that from the 40 observations (Obs) the lowest Altman Z score was -.85 and the highest Altman Z score was 8.52. The mean Altman Z Score was 1.3562 indicating that majority of the companies trading under commercial and services in NSE were experiencing financial distress or they had a possibility of experiencing a financial distress in the next 2 years. The standard deviation of 1.7 presents that there was a huge variation in the Altman Z scores from different companies. Debt, ordinary and retained earnings were used to predict financial distress.

The study findings were supported by Kaumbuthu (2011) that the debt ratio of the listed companies was crucial in predicting financial distress. An uneven funding mix, according to Maina and

Kondongo (2013), increases the likelihood of business financial distress. They argued that the key reasons why a number of firms have been delisted is being linked to financial structure choices and mismanagement. Muchiri, Muturi, and Ngumi (2016) further supported that capital structure was a significant factor of financial distress.

The findings presented in Table 4.1 relating to short term debt indicates that out of the 40 observations the lowest short term debt was Ksh. 0.00 indicating that there were companies in the study who had no short term borrowings. The highest short term debt was Kshs. 113,067 Million and the mean short term borrowing was Kshs. 9127.13 Million. The standard deviation was 27606.06 indicating a huge variation in short term borrowing amongst commercial and services companies listed in NSE. The individual company data indicates that Scangroup and Nation Media Ltd had the lowest short term borrowing for the period under study (2015 to 2019).

The study findings supported Kholisoh and Dwiarti (2020) results that short term debt worsens distress. The study disagrees with Zulkarnain (2015) who found that the ratio of short-term obligations to assets was inversely related to financial distress. Further, Pratheepkanth (2011) found insignificant relationship between short term debt and financial distress. The study supported Mbai (2018) that short term debt was strongly linked to financial distress.

The study results on long term debt categorized under noncurrent liabilities in various commercial and services companies considered presents that the lowest long term borrowing was Kshs. 0.00. This indicates that some of the companies (Nation Media, Scangroup, Kenya Airways and Sameer Africa) had no long term debts for some financial periods between 2015 to 2019. The highest long term debt was Kshs. 104,175 Million and the mean long term borrowing was Kshs. 3072.25 Million. The standard deviation of 16424.78 indicates a huge variations in the amount borrowed by various companies. When compared to short term borrowing results, it is clear that (Short term

mean average of Kshs. 9127.13 Million > mean long term borrowing of Kshs. 3072.25 Million) majority of the commercial and services companies listed in NSE prefer short term borrowing to long term debts.

Susanti *et al.*, (2020) supported that long term debts worsens financial distress. Václav and David (2017) found that long-term debts strongly linked to financial distress. Khoja, Chipulu, and Jayasekera (2019) study results revealed that long-term debt lead to financial distress. Songhor (2018) found that financial distress was negatively correlated to long term debt.

The results on retained earnings presented in Table 4.1 presents that, from 40 observations, the minimum retained earnings was Kshs. -80,224 Million and the highest retained earnings was Kshs. 15 million. The individual company results clearly indicated that among the 8 companies, Kenya Airways had the lowest (in 2019) and highest retained earnings (in 2015). These variation is clearly demonstrated in the mean of Kshs. -4054.21 Million and a huge standard deviation of 19256.81. The negative mean results indicates that majority of the commercial and services companies listed in NSE had negative earnings after tax and therefore could not retain any amount for investment purposes. Further, it is clear that majority of the commercial and services companies listed in NSE revenue reserves were negative. This according to Altman could be one of the major contributor to the low Altman Z scores for the majority of the companies considered.

Shome and Verma (2020) established that retained earnings was a key determine of financial distress. Darmawan and Supriyanto (2018) found that retaining earnings in the asset ratio had a favorable impact on company financial difficulty. The findings show that when internal funds are not used to settle charges such as taxes, an enterprise's chances of staying out of financial trouble increase. However, Nketiah (2017) demonstrated that retained income have a lower likelihood of causing financial hardship. .

The findings in Table 4.1 on ordinary share capital presents that, out of 40 observations, the lowest ordinary share capital was Kshs. 146.25 Million and the highest was Kshs. 7,482 Million. The mean ordinary share capital amount was Kshs. 1,261.01 Million. The dispersion rate was huge as depicted by the standard deviation of 2179.079. The results depicts that the companies listed under commercial and services in NSE had diverse equity capital and there was a huge variation in the amount contributed by ordinary shareholders amongst the companies. The individual company ordinary share capital results indicated that almost all the companies considered, there equity capital remained constant for the period under study.

Meuleman *et al.*, (2020) discovered that equity financing has been negatively associated to financial distress amongst enterprises. Turaboglu *et al.*, (2017) linked ordinary share capital to financial distress. Ikpesu and Eboiyehi (2018) found that financial distress was negatively affected by ordinary share capital. A study by Wesa and Otinga (2018) found that ordinary share capital significantly led to financial distress. Muigai (2016) demonstrated that while financial leverage worsens the distress position of the firms, share capital and long-term debt, eased it.

### **4.3 Diagnostic Tests**

Prior to regression analysis, the researchers ran diagnostic tests on the study hypotheses to confirm that the regression assumptions were not violated. The tests included multicollinearity, normality, heteroskedasticity, autocorrelation, hausman tests, and stationarity tests. The findings were provided in the parts that followed.



### 4.3.1 Normality Tests

The assumption was that sample populations mean was normally distributed. Table 4.2 and figure 4.1 show the results of normality testing using Kurtosis and skewness, as well as a normal distribution table.

**Table 4.2 Skewness/Kurtosis tests for Normality**

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Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj	chi2(2)	Prob>chi2
Myresiduals	40	0	0	.		0

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**Source: Researcher (2022)**

According to the skewness and kurtosis tests, the skewness and kurtosis were both zero (0). The skewness of a symmetrical dataset will be 0. The dataset has larger tails than a normal distribution if the kurtosis is greater than 3. (more in the tails). The dataset exhibits lighter tails than a normal distribution if the kurtosis is less than 3. (less in the tails). As a result, the data had a normal distribution.

### 4.3.2 Multicollinearity Tests

The Multicollinearity test is used to evaluate if one or more of the study's variables are connected to other explanatory factors in a significant manner. The results of the correlation test were shown in table 4.3.

**Table 4.3 Results on Multicollinearity Tests**

Variable	VIF	1/VIF
Short Term Debt	7.88	0.12690
Long Term Debt	6.39	0.15649
Retained Earnings	8.58	0.11655
Ordinary Share Capital	3.65	0.27397
Mean VIF	6.625	

**Source: Researcher (2022)**

The results in Table 4.3 indicates that short term debt had a VIF of 7.88, long term debt had a VIF of 6.39, retained earnings had a VIF of 8.58, and ordinary share capital had a VIF of 3.65, according to the Multicollinearity tests. None of the VIFs were more than 10, indicating that multicollinearity was not a possibility in the study.

#### **4.3.3 Heteroskedasticity Tests**

The Breusch-Pagan test was utilized to describe the heteroscedasticity problems in the study. Table 4.4 shows a summary of the findings. Homoscedasticity, which shows that the probability distribution of the perturbation term is the identical for all observations, is one of the fundamental assumptions. This indicates that for all explanatory variable values, the variance of each variable is the same. Heteroscedasticity occurs when the disruptive circumstances do not have the same disparity or non-homogeneity of variance.

**Table 4.4 Breusch-Pagan / Cook-Weisberg test for Heteroskedasticity**

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Ho: Constant variance
Variables: fitted values of Altman Z Score

---

chi2(1) = 1.95
Prob > chi2 = 0.1644

---

**Source: Researcher (2022)**

If the p-value is significant at a 95% confidence interval, the data has a heteroscedasticity problem; if the value is marginal, the data does not have a heteroscedasticity problem (greater than 0.05). Because all p-values are larger than 0.05, there is no problem with heteroscedasticity, as shown in Table 4.4.

#### **4.3.4 Autocorrelation Tests**

To test the autocorrelation assumptions that require zero covariance across time, the researcher utilized error terms. This means that the errors connected with one observation are unrelated to those associated with another. The Durbin Watson test, according to Gujarati, is the most well-known test for finding serial correlation (2004). The null hypothesis of the test is that the residuals have no serial correlation until they reach the stated order. The autocorrelation findings were presented in table 4.5.

**Table 4.5 Wooldridge Test for Autocorrelation in Panel data**

---

H0: no first-order autocorrelation	
<hr/>	
F( 1, 7)	2.543
Prob > F	0.1565

---

**Source: Researcher (2022)**

The results demonstrated that the coefficients were statistically significant, and the fitness is extremely high. The no-serial relationship hypothesis is supported by the test. The serial correlation between the residuals, according to the test, was  $0.1565 > 0.05$ . As a result, the error terms for the different observations in this analysis were unrelated.

#### **4.3.5 Tests of Stationarity**

The Levin-Lin Chu unit-root test was appropriate since the research employed time series data and includes a test for stationarity and order of integration. This was done to make the variables stable, which was required for panel regression and other statistical inferences. The null hypothesis was evaluated to test whether the variables followed a predictable pattern of stationary.

**Table 4.6 Stationarity Tests Results**

Variable	Hypothesis	P value	Verdict
Altman Z Score	Ho: Panels contain unit roots	0.0031	Reject Ho
	Ha: Panels are stationary		
Short Term Debt	Ho: Panels contain unit roots	0.0000	Reject Ho
	Ha: Panels are stationary		
Long Term Debt	Ho: Panels contain unit roots	0.0000	Reject Ho
	Ha: Panels are stationary		
Retained Earnings	Ho: Panels contain unit roots	0.0015	Reject Ho
	Ha: Panels are stationary		
Ordinary Share Capital	Ho: Panels contain unit roots	0.5052	Fail to Reject Ho
	Ha: Panels are stationary		

**Source: Researcher (2022)**

The result in Table 4.6 presents that all variables were variables were stationary along a deterministic pattern except ordinary share capital ( $P=0.5052>0.05$ ).

### 4.3.6 Hausman Tests Results

Two panel data regressions were run by the researcher. Fixed and random effects are the two sorts of effects. The Hausman test was performed to see which of the two regressions had the best fit for the data. The following were the test hypotheses:

$H_0$ : Accept Random Effect

$H_A$ : Accept Fixed Effect

**Table 4.7 Hausman Test**

	(b) Fixed	(B) random	(b-B) Difference	Sqrt(diag(V_bV_B)) S.E.
STD	4.15	4.51	-3.52	2.44
LTD	3.48	3.71	-2.26	1.84
RE	1.40	1.45	-5.12	8.59
OSC	3.42	3.72	-2.20	1.83
chi2(3)	3.00			
Prob>chi2	0.8879			

**Source: Researcher (2022)**

The random effects model should be utilized, according to the Hausman test. As a result, in the next part, only the findings of the random effects model are provided and analyzed. The Hausman test revealed a significance level of  $\text{Prob}>\text{chi}2 = 0.8879$ , which was higher than the 0.05 significance level. As a consequence, the null hypothesis of the researchers is not rejected ( $H_0$ ). The Random effects panel data model is the best match for the data, hence it should be utilized. As a consequence, only the results of the random effects panel regression were utilised.

#### 4.4 Random effect Regression Model

In regression analysis, the coefficients (coef) and P values are reported, which help in the establishment of the relationship between variables. In terms of units, the coefficients illustrate how changes in the independent variable affect the dependent variable. The coefficient usually indicates the direction in which the dependent variable changes as a result of changes in the independent variable. If the P values are smaller than 5% or 10% at the 95 percent and 90 percent confidence intervals, respectively, the particular variable is deemed to be relevant in characterizing the changes in the dependent variable.

**Table 4.8 Random effect Regression Model Results**

Altman Z Score	Coef.	Std. Err.	Z	P> z	[95% Conf.	Interval]
STD	-2.43	6.03	-4.24	0.000	1.37	3.73
LTD	-5.17	2.94	-1.76	0.009	5.99	1.09
RE	1.53	5.10	3.22	0.000	1.35	2.45
OSC	-1.11	4.33	-0.215	0.78	9.59	7.39
_cons	0.1785847	0.1207869	0.57	0.57	0.1681632	0.3053126
R squared	7.10E+01					
F statistics	5.39E+01					
Prob > chi2	0.00E+00					

**Source: Researcher (2022)**

Financial Distress= 0.1785847- 2.43X<sub>1</sub> - 5.17X<sub>2</sub> + 1.53X<sub>3</sub> + ε was the model adopted in the current study.

#### **4.4.1 Effect of Short Term Debt on Financial Distress**

The findings of the Random-effects regression model show that short-term debt (STD) had a negative and significant influence on Altman Z score, with a P value of  $0.0000 < 0.05$  at the 5% level of significance. Positive changes in short-term debt lead to negative changes in the Altman Z score. The study was supported by Kholisoh and Dwiarti (2020) that short term debt worsens financial distress. Zulkarnain (2015) further agreed that the ratio of short-term obligations to assets is inversely related to financial distress. Further, Mbai (2018) found the driver of financial distress for a group of Nairobi Securities Exchange companies were financial leverage.

#### **4.4.2 Effect of Long Term Debt on Financial Distress**

The results in table 4.8 indicates that Long Term Debt (LTD) had a negative and significant effect on altman z score at 5% level of significance,  $0.009 < 0.05$ . A unit variation in long term debt results to inverse unit variation in Altman Z score value. Susanti *et al.*, (2020) in a focus on 21 firms in the Indonesian Bourse documented that long term debts worsens financial distress. Mselmi *et al.*, (2017) found that long term debt significantly affects financial distress Václav and David (2017) agreed that long-term debt ratios strongly linked to financial distress. Khoja, Chipulu, and Jayasekera (2019) also found that Long-term loans significantly affected financial distress

#### **4.4.3 Effect Retained Earnings on Financial Distress**

Table 4.8 results indicate that retained earnings had a positive and significant effect on Altman Z Score. On another note, retained earnings increase reduces the financial distress in a company. A unit variation in retained earnings resulted to 1.53 unit variation in Altman Z score at 5 % significant level. Shome and Verma (2020) supported that retained earnings was a key determinant of financial distress. Darmawan and Supriyanto (2018) found that retaining earnings in the asset



ratio had a favorable impact on company financial difficulty. However, Nketiah (2017) demonstrated that retained income was insignificantly related to financial distress.

#### **4.4.5 Effect of Ordinary Share Capital on Financial Distress**

The results from Table 4.8 indicates that Ordinary Shareholders Capital (OSC) had insignificant effect on Altman Z score values and that its changes does not have any significant effect of financial distress. Therefore it is evident that changes in ordinary share capital could not be used to predict financial distress at 95% confidence interval. The study disagrees with Meuleman *et al.*, (2020) findings that equity financing negatively affects financial distress. Turaboglu *et al.*, (2017) further disagreed that ordinary share capital had a significant effect on financial distress. Ikpesu and Eboiyehi (2018) similarly found that financial distress was negatively affected by ordinary share capital. Further, Wesa and Otinga (2018) similarly conducted a similar study and established ordinary share capital significantly led to financial distress.

## **CHAPTER FIVE**

### **SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

The chapter presents the summarized results based on the study objectives. The conclusions were done based on the study objectives; to determine the effect of short term debt, long term debt, retained earnings and ordinary share capital on financial distress of commercial and services companies listed in Nairobi Securities Exchange.

#### **5.2 Summary of the findings**

The descriptive results on Altman Z score indicated that majority of the companies trading under commercial and services in NSE were experiencing low Altman Z score a clear indication of financial distress. The mean indicated all the Eight (8) companies considered were all experiencing financial distress in the period under study.

The findings on short term debt some companies under study had no short term borrowings. The individual company data indicates that Scangroup and Nation Media Ltd had the lowest short term borrowing for the period under study (2015 to 2019) while Kenya Airways had the highest short term borrowing.

The study results on long term debt presented that some of the companies had no long term debt for the period considered. Those companies were; Nation Media, Scangroup, Kenya Airways and Sameer Africa. There was a huge variations in the amount borrowed by various companies and when compared to short term borrowing results, it is clear that short term mean average borrowings was greater mean average long term borrowing. Majority of the commercial and services companies listed in NSE preferred short term borrowing to long term debts.

The results on retained earnings was alarming showing that majority of the companies had negative retained earnings reserves. The individual company results clearly indicated that among the 8 companies, Kenya Airways had the lowest (in 2019) and highest retained earnings (in 2015). These variation is clearly demonstrated huge standard deviation. The negative retained earnings results indicated that majority of the commercial and services companies listed in NSE had negative profit after tax and therefore could not retain any amount for investment purposes.

The findings on ordinary share capital presented that on average the share capital amount remained constant for the period under consideration. The results depicts that the companies listed under commercial and services in NSE had diverse equity capital and there was a huge variation in the amount contributed by ordinary shareholders amongst the companies.

### **5.3 Conclusions of the Study**

The study concluded that short-term debt had a negative and significant influence on Altman Z score. Positive changes in short-term debt lead to negative changes in the Altman Z score. Since the decrease in Altman Z score is a clear predictor of financial distress, the study found that short term debt is positively and significantly related to financial distress.

The study Long Term Debt had a negative and significant effect on altman z score and therefore positively related to financial distress. A unit variation in long term debt results to inverse unit variation in Altman Z score value. An increase in long term debt therefore results to increase in financial distress.

The study concluded that retained earnings had a positive and significant effect on Altman Z Score. Therefore, retained earnings increase reduces the financial distress in a company. These was supported by the retained earnings coefficient in the Altman Z score model. Therefore, profitability

is clear indication of low financial distress while the opposite is true since companies with losses have nothing to retain.

The study concluded that ordinary shareholders capital has insignificant effect on Altman Z score values and that its changes does not have any significant effect of financial distress. Therefore it is evident that changes in ordinary share capital could not be used to predict financial distress.

#### **5.4 Recommendations**

Majority of the companies listed under commercial and services firm in NSE have been delisted, and hence short term and long term debt financing have been linked to the cause. Therefore the study recommends to the managers and investors of these companies to consider alternative source of financing for these companies such as ordinary share capital and retained earnings. The companies should avoid any form of debt financing.

The study found out that retained earnings had a positive effects on Altman Z score. Therefore the management of these companies should consider on operational efficiency measures to increase on revenue while reducing or maintaining the level of costs. The companies should also consider financing the revenue generating divisions and close down some of the non revenue generating centres.

The study recommends to the researchers to consider an extended period of 10 to 20 years to establish the effect of financial structure on financial performance of commercial and services company listed in Nairobi exchange. It is important for the national government to consider supporting the sectors through interest free funds or tax exemption for some considerable duration to enable these companies recover from the highly accumulated chunk of losses.

### **5.5 Suggestion for Further Study**

The variable considered; short term debt, long term debt, retained earnings and ordinary share capital contributed to 71% changes in financial distress. More factors should be considered to determine the 29% changes in financial distress. The study was limited to commercial and services sector. Further, a study is recommended to other sectors in NSE such as energy and petroleum, agriculture and commercial banks.

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## APPENDICES

### Appendix I: Document Review Guide

Year / Variable	Short Term Debts	Long Term Debts	Retained Earnings	Shareholders' Equity	Current Assets	Current Liabilities	EBIT
2015							
2016							
2017							
2018							
2019							

Year/ Variable	Short Debts	Term	Long Debts	Term	Retained Earnings	Shareholders' Equity	Current Assets	Current Liabilities	EBIT	Total assets	Sales	MV of Equity Capital	Total Liabilities
2015	59,167,111		126,283,838		0	177,018,950	108,701,024	96,575,160	-58,917,930	441,897,928	123,850,909	93,466,006	429,772,064
2016	60,160,221		140,806,953		0	177,018,950	97,764,438	114,737,042	-95,157,101	379,575,823	62,816,765	93,466,006	356,395,521
2017	62,343,869		185,134,598		0	177,018,950	96,828,432	162,076,400	-82,247,304	359,932,908	50,323,130	138,074,781	359,932,908
2018	63,476,000		262,049,000		0	177,019,000	75,456,000	121,964,000	-65,228,000	320,942,000	26,380,000	187,521,000	457,801,000
2019	13,861,000		259,040,000		0	238,447,000	75,911,000	50,715,000	-12,378,000	471,737,000	20,218,000	202,181,000	442,016,000
2015	105,991,000		530,021,000		1,252,721,000	408,654,000	1,704,446,000	1,787,245,000	-395,801,000	4,355,614,000	4,488,399,000	1,700,857,000	4,355,614,000
2016	738,255,000		471,594,000		1,428,014,000	408,654,000	2,001,691,000	1,711,903,000	269,475,000	4,404,931,000	4,815,327,000	1,876,150,000	4,404,931,000
2017	854,899,000		360,603,000		1,156,922,000	408,654,000	1,874,462,000	2,213,332,000	-282,186,000	4,459,637,000	4,657,488,000	1,605,058,000	4,459,637,000
2018	711,170,000		538,136,000		1,212,482,000	408,654,000	1,991,597,000	2,183,681,000	397,225,000	4,676,133,000	4,836,030,000	1,660,618,000	4,676,133,000
2019	579,731,000		405,637,000		733,965,000	408,654,000	1,385,279,000	2,320,660,000	-716,266,000	4,195,946,000	4,074,042,000	1,182,101,000	4,195,946,000
2015	608,919,000		1,968,217,000		2,213,921,000	182,174,000	2,324,588,000	2,234,326,000	315,148,000	13,394,194,000	5,836,030,000	2,467,896,000	13,394,194,000
2016	515,620,000		3,187,561,000		2,260,456,000	182,174,000	3,351,856,000	2,050,420,000	315,148,000	14,734,591,000	6,468,803,000	2,363,469,000	14,734,591,000
2017	657,120,000		3,819,714,000		2,315,239,000	182,174,000	2,646,657,000	2,453,397,000	260,747,000	15,033,426,000	6,408,206,000	2,415,642,000	15,033,426,000
2018	2,663,253,000		1,677,058,000		2,434,571,000	182,174,000	2,115,014,000	4,875,071,000	795,111,000	12,723,052,000	6,593,441,000	3,723,052,000	2,723,052,000
2019	647,520,000		3,587,202,000		2,616,994,000	182,174,000	1,920,152,000	2,887,776,000	1,017,155,000	15,098,683,000	6,823,159,000	4,098,683,000	2,365,331,000
2015	0		0		252,721,000	378,865,000	10,136,904,000	3,678,463,000	875,271,000	12,468,479,000	5,022,408,000	691,607,000	12,468,479,000
2016	0		0		320,150,000	378,865,000	11,112,161,000	4,673,097,000	725,925,000	13,486,398,000	4,835,073,000	681,714,000	13,486,398,000
2017	0		0		508,141,000	378,865,000	10,924,015,000	4,787,863,000	696,414,000	13,758,912,000	4,122,869,000	678,929,000	13,758,912,000
2018	0		0		656,922,000	378,865,000	11,240,951,000	5,430,739,000	959,888,000	14,425,198,000	4,504,904,000	866,429,000	14,425,198,000
2019	0		0		912,482,000	378,865,000	10,709,743,000	5,355,126,000	290,682,000	12,803,173,000	2,872,837,000	728,947,000	12,803,173,000
2015	41,677,000		0		245,026,000	146,250,000	463,476,000	308,942,000	96,916,000	225,844,000	848,377,000	380,378,000	225,844,000
2016	476,728,000		0		308,416,000	272,440,000	1,367,988,000	919,377,000	164,279,000	1,866,944,000	1,503,770,000	947,567,000	1,866,944,000
2017	334,194,000		0		339,650,000	272,440,000	1,250,875,000	913,028,000	231,696,000	1,858,734,000	1,451,774,000	945,936,000	1,858,734,000
2018	457,556,000		0		461,180,000	272,440,000	1,779,551,000	1,333,139,000	358,364,000	2,435,048,000	1,696,318,000	1,101,909,000	2,435,048,000
2019	314,636,000		0		501,997,000	272,440,000	1,655,119,000	1,262,668,000	360,337,000	2,405,394,000	1,600,397,000	1,142,726,000	2,405,394,000

2015	0	0	5,444,800,000	471,400,000	3,933,800,000	2,938,300,000	2,823,200,000	8,905,300,000	12,339,500,000	855,900,000	8,905,300,000
2016	0	0	6,882,900,000	471,400,000	3,707,300,000	3,456,000,000	2,460,000,000	8,655,900,000	11,324,800,000	707,300,000	8,655,900,000
2017	0	0	6,302,300,000	471,400,000	3,183,000,000	3,128,100,000	1,954,600,000	8,115,300,000	10,624,900,000	8,183,000,000	8,115,300,000
2018	0	0	6,826,000,000	471,400,000	6,428,000,000	3,290,400,000	1,634,000,000	7,907,600,000	9,660,600,000	820,900,000	7,907,600,000
2019	129,800,000	692,200,000	7,397,100,000	471,400,000	6,912,000,000	3,573,700,000	1,296,400,000	8,523,000,000	9,050,900,000	733,600,000	8,523,000,000
2015	543,393,000	0	1,248,452,000	1,391,712,000	2,765,545,000	1,254,205,000	48,552,000	3,751,225,000	3,363,976,000	837,995,000	3,751,225,000
2016	825,615,000	3,304,000	598,022,000	1,391,712,000	2,290,282,000	1,449,092,000	-821,008,000	3,290,867,000	2,882,230,000	835,194,000	3,290,867,000
2017	561,840,000	31,026,000	611,051,000	1,391,712,000	1,698,490,000	1,096,854,000	95,086,000	2,969,868,000	2,626,975,000	837,854,000	2,969,868,000
2018	960,651,000	14,585,000	-86,423	1,391,712,000	1,300,172,000	1,438,597,000	-413,017,000	2,587,824,000	2,067,928,000	829,578,000	1,458,246,000
2019	414,679,000	455,218,000	-1,148,370	1,391,712,000	867,098,000	1,001,255,000	-590,097,000	1,530,847,000	1,757,353,000	990,111,000	1,461,736,000
2015	43,609,000,000	104,175,000,000	15,676,000,000	7,482,000,000	41,052,000,000	81,753,000,000	29,712,000,000	-	182,063,000,000	110,161,000,000	182,063,000,000
2016	111,020,000,000	0	-42,503,000,000	7,482,000,000	29,710,000,000	82,621,000,000	26,099,000,000	-	162,392,000,000	110,807,000,000	162,392,000,000
2017	113,067,000,000	0	-51,871,000,000	7,482,000,000	26,747,000,000	82,292,000,000	10,202,000,000	-	154,288,000,000	105,082,000,000	154,288,000,000
2018	77,362,000,000	0	-60,688,000,000	5,824,000,000	27,976,000,000	129,512,000,000	-7,588,000,000	-	136,634,000,000	114,185,000,000	136,634,000,000
2019	6,625,000,000	0	-80,224,000,000	5,824,000,000	25,660,000,000	67,815,000,000	12,975,000,000	-	195,673,000,000	127,678,000,000	195,673,000,000