

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Research on corporate financial distress has become a contemporary issue among research scholars all over the world. In the past two decades, the world has witnessed numerous cases of corporate financial distress and subsequent failure among erstwhile globally reputable companies such as Enron and WorldCom in the United States, Parmalat in the United Kingdom, Satyam in India, Dynergy and China Medical Technologies in China and Banco Espirito Santo in Spain. Financial distress is a common phenomenon within the corporate sector in many countries. It has been described as a situation where a firm is unable to meet its financial obligations as they become due or does so with difficulties (Andualem, 2015; Andrade & Kaplan, 1998; Ross, Westerfield & Jordan; 2008). A firm is financially distressed when the operating cash flow is not sufficient for meeting the current obligation of the firm. It also involves a situation where the firm constantly experiences loss, breach loan contract, and find it difficult in honouring organisational commitment. Eboiyehi and Ikpesu (2017) observed that financial distress usually arises when firms fail to honour their financial obligation to suppliers and creditors. However, the net effect of financial distress is that the survival of the financially struggling companies is significantly compromised and in extreme cases may result in bankruptcy. According to Mwangi, Muathe and Kosimbei (2014), such a situation does not only erode investors' confidence on the capital market but also culminate in loss of shareholders' wealth.

In Nigeria, financial distress has also been a prevalent issue in the banking sector. In the 1940s and 1950s and between 1989 and 1998 as well as between 2007 and 2010, many banks failed in the country due to poor capital structure, assets mismanagement, inadequate skilled personnel, and poor capital base among others (Ailemen, 2003; Osaze & Anao, 1990). Currently, the Nigerian industrial goods sector appears to be experiencing financial distress due to exchange rate problems, inflation in the economy, instability of government policies, poor infrastructural facilities, and other disequilibria in the macro economy. According to the 2015 NSE Index Statistics, industrial sector has the highest NSE All Shares Index of 2,166.70 (NSE Factbook, 2016). This rating informs the choice of the investigation of financial distress in the industrial goods sector of the Nigerian economy. However, Salawu (2007) had earlier observed that one of the major causes of corporate financial distress in Nigeria is inadequate capital and inappropriate capital mix.

Literature on prediction of financial distress has identified capital structure as a significant determinant (Altman, 2000; Ohlson, 1980). Capital structure has been described as the manner in which firms employ one form of financing in place of the other with regard to the dichotomous sources of debt and equity (Pandey, 2009). Baimwera and Muriuki (2014) argued that high degree of financial leverage inadvertently exposes companies to higher levels of financial risk which often result in financial distress. Furthermore, Muigai (2016) observed that excessive employment of debt capital to finance corporate operations has a negative and significant effect on financial distress of non-financial firms listed in Kenya. Similar studies undertaken within the Asian economies have provided parallel conclusions (Chen, 2004; Gupta, Srivastava, & Sharma, 2014).

Moreover, a review of literature on corporate finance has revealed the postulate that firm size is a key determinant of capital structure. Specifically, firm size which refers to the production and turnover capacities possessed by a firm (Surajit & Saxena, 2009); has been shown to be positively associated with corporate gearing levels. Researchers have attributed this relationship to the fact that lenders often perceive larger firms as less risky consumers of credit because of their superior collateral structure (Maina & Ishmail, 2014; Mule, Mukras, & Nzioka, 2015). This is in contrast to smaller entities that apparently possess inferior collateral structure and therefore suffer from credit rationing. Considering the advantage enjoyed by larger firms in accessing credit, they are hypothetically expected to perform better and hence be less distressed compared to smaller firms.

In the light of this trend, this study was aimed at investigating the relationship between capital structure and financial distress, as well as the moderating effect of firm size on this relationship among listed companies in Nigerian industrial goods sector. Essentially, the study was predicated on establishing whether or not the listed companies in Nigerian industrial goods sector exhibit similar financial distress patterns depending on the way they are financed regardless of their sizes.

1.2 Statement of the Problem

Nigeria is no exception to the wave of corporate scandals and collapse of top firms around the world. For over a decade ago, different sectors of the Nigerian economy have recorded significant cases of corporate scandals and corporate failure. In the industrial goods sector, in the

year 2005, the case of Cadbury Nigeria Plc. book padding came to limelight. Cadbury Nigeria Plc. overstated its assets by ₦13 billion and had to adjust its accounts to reflect an operating loss of ₦2 billion in the year 2006. Other examples of corporate accounting scandals in Nigeria include the defunct Afribank's financial misstatement, the Spring Bank Plc. post-consolidation outburst, African Petroleum Plc.'s accounting scandal and Evans Medical Plc.'s alleged book padding. The Nigerian economy cannot afford the collapse of its corporate organizations bearing in mind the current high unemployment rate and youth restiveness in the country. Judging by the fact that the industrial goods sector is the second most capitalized sector in the Nigerian economy, this study placed a priority on the sector.

The association between capital structure and financial distress has generated a mixed outcome in the literature. For instance, research conducted by Umar et al. (2012); Perinpanatham (2014); Vishnu et al. (2014) as well as Muigai and Muriithi (2017) revealed negative relationship between capital structure and financial distress; while studies carried out by Velnampy (2013) and Ogundipe et al. (2012) showed a positive relationship. In addition, the studies by Kodongo et al. (2015) and Pratheepkanth (2011) revealed that capital structure has no effect on financial distress. Few foreign studies (Muigai & Muriithi, 2017) have also examined the moderating effect of firm size on this relationship. The contradiction in empirical findings and the exclusion of the moderating effect of firm size in studies from Nigeria calls for more investigation on the link between capital structure, firm size and corporate financial distress in the economy. This study, therefore, investigated the effect of capital structure on corporate financial distress, as well as the moderating effect of firm size on this relationship among listed companies in the Nigerian industrial goods sector, using the modified Altman's Z-score of corporate financial distress for emerging economies.

1.3 Objectives of the Study

The main objective of this study was to investigate the relationship between capital structure and financial distress among listed companies in Nigerian industrial goods sector. Specifically, the study sought to:

- i. examine the extent of the relationship between short-term debt and financial distress among listed companies in Nigerian industrial goods sector;
- ii. investigate the impact of long-term debt on financial distress among listed companies in Nigerian industrial goods sector;
- iii. evaluate the extent of the effect of firm leverage on financial distress among listed companies in Nigerian industrial goods sector;
- iv. ascertain the extent of the moderating effect of firm size on the relationship between capital structure and financial distress among listed companies in Nigerian industrial goods sector.

1.4 Research Questions

In view of the problems highlighted above, the following research questions are to be answered:

- i. What is the extent of the relationship between short-term debt and financial distress among listed companies in Nigerian industrial goods sector?
- ii. To what extent does long-term debt impact on financial distress among listed companies in Nigerian industrial goods sector?

- iii. What is the extent of the effect of firm leverage on financial distress among listed companies in Nigerian industrial goods sector?
- iv. To what extent does firm size moderate the relationship between capital structure and financial distress among listed companies in Nigerian industrial goods sector?

1.5 Hypotheses of the Study

In view of the above objectives, the following null hypotheses were formulated for the study.

- (1) Ho: Short-term debt has no significant relationship with financial distress among listed companies in Nigerian industrial goods sector.
- (2) Ho: Long-term debt has no significant impact on financial distress among listed companies in Nigerian industrial goods sector.
- (3) Ho: Firm leverage has no significant effect on financial distress among listed companies in Nigerian industrial goods sector.
- (4) Ho: Firm size has no significant moderating effect on the relationship between capital structure and financial distress among listed companies in Nigerian industrial goods sector.

1.6 Scope of the Study

The study focused on the relationship between capital structure and financial distress among only listed companies in Nigerian industrial goods sector. After the financial sector, which is outside the scope of this study, industrial goods sector is the next most capitalized sector on the Nigerian Stock Exchange (NSE). Thus, the Nigerian industrial goods sector should attract significant

research attention among the scholars in Nigeria. Moreover, only the moderating effect of firm size was examined in this study. The study also confined the sources of data collection to the annual reports of the companies sampled for the study while the coverage period was also limited to 7 years between 2012 and 2018. However, the objectives of the study could be effectively attained within this scope.

1.7 Significance of the Study

This study is of particular importance to a wide range of stakeholders including the board of directors, the management, investors, creditors, government and researchers. It will aid the board of directors in formulating strategic financing decision for the firm. It will assist the management in arriving at optimum financing decision that will reduce the possibility of financial distress, bearing in mind the size of the firm.

The current study will be beneficial to the providers of capital. Investors, through their brokers, can make use of the findings of this study to make investment and disinvestment decisions. The findings will also be of help to the creditors by mapping firm size with capital base before granting credit facilities. It will aid government policy makers to formulate financial policies on stabilization of the organized private sector.

This study will contribute to the existing body of literature on the subject matter. Specifically, this study will be of immense assistance to researchers, in that the effect of more moderating variables can be examined on the study of this nature in future.

1.8 Operational Definition of Terms

Financial Distress in this study refers to Z-score derived from Altman (2000) model, as modified for measuring financial distress in emerging economies.

Firm Leverage refers to the extent to which debt was incorporated into the capital structure of the firm. It was measured on a ratio scale as the ratio of total debt to total equity.

Firm Size was viewed from the perspective of the volume of both the current and non-current assets. It was operationalized as the natural logarithm of the total assets.

Long-term Debt is the sum of all non-current liabilities. It was measured as the natural logarithm of total non-current liabilities.

Short-term Debt refers to the sum of all the current liabilities. It was measured as the natural logarithm of total current liabilities

CHAPTER TWO

LITERATURE REVIEW

2.0 Preamble

In this section of the study, studied variables are reviewed conceptually, theoretically and empirically. First, corporate attributes, profitability, leverage, firm size and audit firm were conceptualized followed by theoretical review by reviewing agency theory, positive accounting theory and signaling theory while empirical review of relevant studies, together with gaps in the literature, formed the last section of the chapter.

2.1 Conceptual Review

Financial distress, capital structure and firm size will be conceptualized in this study. Each of these concepts is described in the following sub-sections and presented as a conceptual model.

2.1.1 Financial distress

Financial distress is a term in corporate finance used to indicate a condition when promises to settle liability obligations are broken, or honoured with difficulty. Changes in financial conditions affect the transition from one state of financial distress to another. Aggravation of the financial conditions may lead to bankruptcy. Financial distress can also be termed as severe liquidity problems that cannot be resolved without a sizable rescaling of the entities' operations or structure. It must be noted that companies may file for bankruptcy even though their performance and financial ratios do not predict this. On the other hand, some companies may only just be surviving corporate failure, but are actually classified as non-failed companies.

Some companies may strategically file for bankruptcy to eliminate rising debts. Financial distress also implies the situation when a financial institution cannot continue to exist in its current form. It therefore needs delisting or major organizational restructuring.

According to Outecheva, (2007), financial distress can be classified into four groups namely; deterioration of performance, failure, insolvency, and default. Whereas deterioration and failure affect the profitability of the company, insolvency and default are associated with corporate liquidity. In general, financial distress is characterized by a sharp decline in the firm's performance and value. Outecheva, (2007) noted further that, a company could be distressed without defaulting but asserted that default and bankruptcy cannot occur without the preceding period of financial distress. Managerial incompetence is the most common reason for a company's distress and possible failure but the ultimate cause of failure is often simply running out of cash and other liquid funds. Failure does not happen suddenly but it is a gradual process. Financial distress is a dynamic process where a company moves in and out of financial trouble, as it passes through separate stages, each of which has specific attributes and consequently, contributes differently to corporate failure.

2.1.2 Capital Structure

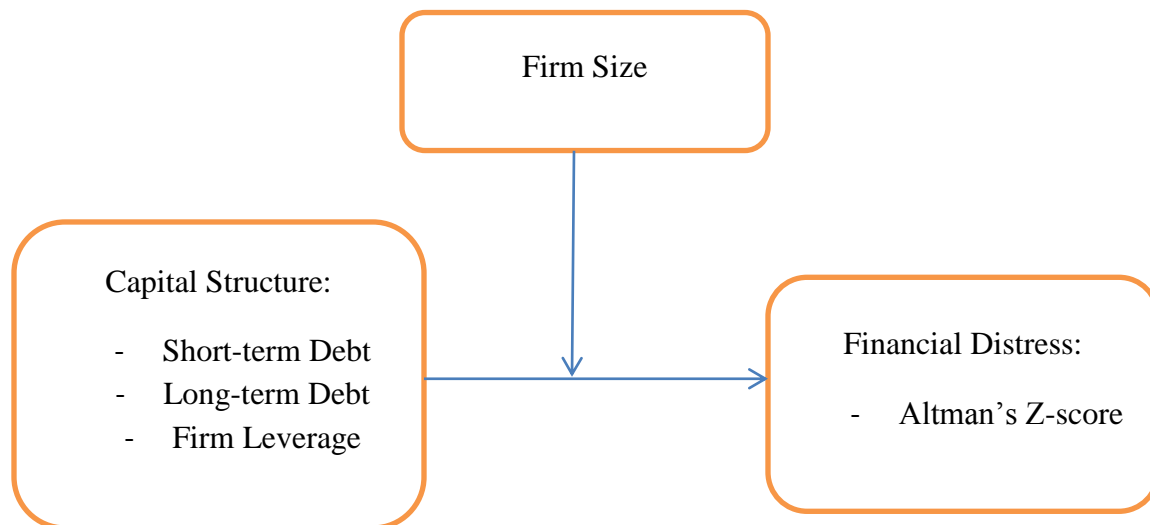
Capital structure of a firm is one of the most critical areas in corporate finance that can affect the whole operations of a firm (Wen et al. 2002; Abor & Bikpie 2005; Abor & Bikpie 2007). One of the basic motives of capital structure management is to reduce the cost of capital to maximize the shareholders' wealth. Studies on firm's capital structure can be traced back to the work of Modigliani and Miller (1958), where they opined that the capital structure of a firm was irrelevant in determining the firm's value and its future performance. Since the proclamation of

Modigliani and Miller in 1958, several theories have been developed to explain firms' financing decisions. One of such theories that have gained strong empirical support is the agency theory. The theory posits that capital structure is determined by agency costs arising from conflicts of interest. Since then, discussions on firms' financial decisions have continued to be an issue of interest in the finance literatures. According to Jiraporn (2009), capital structure is one of the most puzzling topics in corporate finance literature. It is often referred to as a firm's financial framework. Booth, Aivazian, Demircuc-Kunt and Maksimovic (2001) described it as the mix of debt and equity capital maintained by a firm. It is also seen a mixture of a variety of long term sources of funds and equity shares including reserves and surpluses of an enterprise. An important decision of a firm is the choice between shareholders' equity and debt. Thus, a firm's capital structure is the specific combination of its debt and shareholders' equity for funding its operating activities. Therefore, financial decisions affecting firm's capital structure are very germane among firms based on the need to increase investors' return on investment and the economic corporation ability to deal with a competitive environment. Hence, the importance of capital structure of a firm cannot be overemphasized since it relates to the ability of the firm to meet the needs of its stakeholders.

2.1.3 Firm Size

Various metrics have been explored to represent firm size which includes total sales, total assets and capital base. In this study firm size will be defined as the natural logarithm of total assets. Large firms are more profitable and hence have more tax benefits of debt. As large firms have more stable profit streams, they are less likely to go bankrupt. Hence, this study expects to see a negative relationship between firm size and financial distress.

Figure 1: Conceptual Model Showing the Relationship among Capital Structure, Firm Size and Financial Distress



2.2 Theoretical Review

Several theories have been explored to explain corporate financial distress in finance management literature. Such theories include Cash Management Theory and Credit Risk Theory.

The theoretical literature provides two leading schools of thought in investigating the effect of capital structure on corporate financial distress of firm. These schools of thought are trade-off theory and pecking order theory. Hence, this study focuses on these two theoretical backgrounds.

2.2.1 Cash Management Theory

The cash management theory postulates that the continuing imbalance between the cash outflow and cash inflow would result in financial distress in an organisation (Aziz & Dar, 2006). The imbalance in the cash flows arises due to cash management failure. The theory is of the opinion that for firms to avoid distress situation, there is a need for effective and efficient utilisation of

fund. Improper cash management leads to an imbalance between the cash inflows and cash outflow and this often leads to financial distress in firms.

2.2.2 Credit Risk Theory

The theory of credit risk is another theory that is used to explain why financial distress occurs in firms. This theory states that when firms do not properly manage their credit risk, it might lead to the firm becoming financially distressed. Credit risk refers to the potential that counter-party will not honour its obligation as agreed. Credit risk directly threatens the continued survival of an organisation and if not properly managed leads to distress situation in firms. An organisation needs to have a sound credit risk management framework to be able to identify, assess and control credit risk in an organisation. Developing a sound credit risk management framework also involves having a good credit risk policy. One of the early signs of financial distress is when an organisation has a high credit risk.

2.2.3 Trade-off Theory

The trade-off theory hypothesizes that the optimal capital structure of firms results from the influences of agency and bankruptcy costs and personal taxes. A corporation must, therefore, choose the level of debt that maximizes the benefits from the tax shield. The theory also states that there are associated benefits of financing a firm with debt which include tax shield and agency cost benefits as well as cost of using debt financing which also include financial distress and agency costs. Thus for a firm to maximize its value, there is need to offset its costs against its benefit of debt financing, when taking a capital structure decision. Ross et al. (2008) opined that a firm can optimize its value when there is equality between marginal costs of debt and marginal benefits of debt. Lending credence to the trade-off theory, Cook and Tang (2010) in

their empirical findings revealed that in those economies that have good economic conditions, firms tend to move faster to their target debt rate when compared to those economies that experience poor economic conditions. When a firm utilizes too much debt to finance its operations, defaulting on its debt exposes such firm to distress costs (Eboiyehi and Ikpesu, 2017). In essence, trade-off theory posits that financial leverage increases the chance of financial distress in firms.

2.2.4 Pecking Order Theory

Pecking order theory was first proposed by Donaldson (1961). However, Myers and Majluf (1984) modified and popularized the theory. This theory argued that the financing cost rises with asymmetric information since managers are more knowledgeable in terms of the value, risk, and prospects of the firm than outside investors. The theory asserts that firms prefer to use internal financing than external financing and it is only when the internal financing is exhausted that firms exploit other forms of external financings such as debt and finally equity. Although the pecking order theory has not been able to determine the optimal capital structure of firms, however it supports the need for managers to preserve the financial stability of firms by balancing the different sources of financing option available to them (Muigai, 2017). Since the current study examined the effect of different sources of financing a corporate entity; short-term debt, long term debt and debt/equity ratio (firm leverage); on financial distress, pecking order theory and cash management theory were adopted.

2.3 Empirical Review

Studies that investigate the effect of firms' capital structure on financial distress abound in the literature. One of such studies is the work by Outecheva (2007) that documented negative relationship between leverage and financial distress. That is, more debt in the capital structure

reduces the chance of corporate financial distress occurring. This assertion was reinforced by the study of Muigai and Muriithi (2017) that revealed negative relationship between firm leverage and financial distress.

However, Eboiyehi and Ikpesu (2017), in a study from Nigeria, investigated the relationship between capital structure and financial distress. The study represented financial distressed with Altman Z-Scores and Springate S-Scores while the capital structure was represented by maturity structure of external debt and the equity capital ratio. Firm size was incorporated as a control variable. The study documented that capital structure, in forms of short term debt, long term debt and firm leverage have negative effects on corporate financial distress. However, firm size was found to be exerting a significant positive effect on corporate financial distress. Similarly, the result of the study of Turaboglu and Topaloglu (2017), from Turkey, also confirmed that negative relationship exist between debt and corporate financial distress. Contrarily, the outcome of the study of Chancharat (2008) showed that while an increase in the debt ratio of firm increases the likelihood of financial failure, the increase in stock return reduces the probability of financial failure.

Vishnu et al. (2014), in a similar study, revealed that debt has negative effect on financial distress while equity has a positive impact on financial distress. This outcome implies that as more debt is used to finance corporate operations, the possibility of financial distress increases while the use of more equity is associated with lower possibility of financial distress. Contrarily, El-Sayed Ebaid (2009), in a research on firms listed in Egypt stock exchange, found that the effect of financial leverage on financial distress is insignificant.

Moreover, mixed results trail the relationship between firm size and financial distress. Lee (2009) examined the role played by firm size in determining the financial distress of the US publicly –held firms. By using the fixed effect dynamic panel data model and a sample of more than 7000 entities, the study showed that absolute firm size represented by total assets had a significant non-linear relationship with financial distress. This outcome implies that larger firms are more likely to experience financial distress in comparison to smaller firms. Mule *et al.* (2015) examined the impact of firm size on financial distress of listed firms in Kenya during the period 2010 – 2014. Firm size was measured with logarithm of total sales. The outcome showed a positive and significant relationship between firm size and financial distress.

However, Velnampy and Nimalathan (2010) conducted a study on the relationship between firm size and probability of financial distress of all the commercial banks in Sri Lanka over the period of 10 years from 1997 to 2006. The study observed a negative relationship between bank size and the probability of bank failure; implying that big banks showed no signs of bankruptcy as was the case on small-sized banks. This result was attributed to the fact that larger banks were more diversified and thus bore lower probability of default.

In a similar vein, Jonsson (2008) studied the relationship between financial distress and size of the firms operating in Iceland. The logarithm of total sales was used to measure firm size while return on equity represented financial distress level. After controlling for firm age, the results of the analysis showed that bigger firms have higher profitability as compared to smaller firms. The study observed further that though large firms had higher levels of debt financing as compared to

smaller firms, they were able to negotiate lower interest rates on debts; which resulted in reduced financial distress. However, Chang and Lee (2009), employing a fixed effect dynamic panel model, found that firm size has no association with financial distress.

Muigai and Muriithi (2017) examined the moderating effect of firm size on the relationship between capital structure and financial distress of listed non-financial firms in Kenya. Firm size was measured using the natural logarithm of total assets while capital structure was operationalized by total debt, long-term debt and short term debt financing. The degree of financial distress was measured using the Altman's Z-score index as reviewed for the emerging markets. Secondary data from audited and published financial statements was collected on 40 listed non-financial firms between year 2006 and 2015. The study estimated the specified panel regression model for fixed effects as supported by the Hausman test results and found that debt has a significant, negative effect on financial distress of the studied companies while firm size exerted significant moderating effect.

Fredrick (2018) investigated the impact of capital structure on financial distress in some selected manufacturing firms in Nigeria. The study employed panel corrected standard error technique. The variables of the study include corporate financial distress, capital structure and firm size. The study revealed a significant negative relationship between capital structure and corporate financial distress. The result further revealed a significant negative relationship between firm size and corporate financial distress. However, the study did not investigate the moderating effect of firm size on the relationship between capital structure and corporate financial distress.

Abdioglu (2019) investigated the effect of some of the firm level variables on the relation between financial distress and capital structure decisions. The study involves some selected manufacturing firms listed in Turkish market between 2007 and 2017 using fixed effect panel regressions. Findings revealed that corporate financial distress level increases as leverage and short-term debt maturity usage increase. Further findings showed that firm size is effective in moderating the association between firm leverage and corporate financial distress. These findings showed that increased debt level results in higher level of corporate financial distress which is in line with Trade-Off Theory. The implication of this outcome is that as the debt level of more profitable firms increases, corporate financial distress increases. Further implication of this result is that as debt financing increases among large firms, the probability of financial distress increases. Another implication of this finding is that increasing long term debt among firms with higher return on equity, results in increased corporate financial distress.

Ikpesu (2019) evaluated the determinants of financial distress of firms in the manufacturing sector in Nigeria. The study employed the fully modified ordinary least square on annual time series data of 18 listed manufacturing firms on the Nigeria stock exchange which was obtained from their audited financial statement. The endogenous variable explored in the study is corporate financial distress which was measured using the Altman Z score while the exogenous variables employed in the study include firm size, liquidity and firm leverage. Findings from the study showed that the firm-specific determinants of financial distress of firms in the manufacturing sector in the country include leverage, liquidity and firm size. The policy implications of these outcomes include paying critical attention to these variables when making financial decisions, designing policies that will determine the appropriate level of liquidity,

leverage, profitability and revenue growth and setting up of control measures that will detect early warning signal of corporate financial distress.

Gichaiya, Muchina and Macharia (2019) examined the influence of corporate risk on financial distress. The study further investigated the moderating effect of firm size on the relationship between corporate risk and financial distress. A quantitative research design with a correlational approach was adopted targeting all non-financial firms listed in Nairobi Securities Exchange from year 2006 to 2015. The study explored secondary data obtained from audited financial statements, daily stock prices and stock market indices. Data analysis involved hierarchical panel regression analysis. The results showed that corporate risk significantly and positively influences financial distress. Unsystematic risk in terms of business and financial risk has a positive significant influence on financial distress while systematic risk proxied with market risk has an insignificant positive effect. Further findings revealed a positive insignificant effect of firm size on the relationship between corporate risk/unsystematic risk and financial distress. Further results revealed a negative insignificant effect of firm size on the relationship between market risk and financial distress. The implication of these outcomes is that large firms can accommodate more market risk without experiencing financial distress as opposed to unsystematic risk that is more disastrous. Further implication of this study is that management should engage in continuous proactive risk management practices that go beyond mere risk assessment so as to integrate risk exposures and risk incidents.

2.4 Gaps in the literature

The review of empirical literature on how firm size influences financial distress has produced mixed results and is therefore not clear. While some studies have shown that larger firms are more likely to suffer financial distress due to their high appetite for debt financing and

inefficiencies, other studies have postulated that it is the smaller firms that are susceptible to financial distress due to their inability to access credit. Further, the moderating effect of firm size on capital structure/financial distress relationship has not been examined in Nigerian context. It is on the background of these conflicting findings and variable exclusion that this study is premised.

Table 1: Summary of Literature Review

Author(s) & year	Study	Findings	Gaps
Muigai and Muriithi (2017), Kenya	Moderating effect of firm size, capital structure and financial distress	Significant moderating effect	Foreign study, to be replicated
Turaboglu and Topaloglu (2017), Turkey	Debt and financial distress	Significant negative effect	Variables exclusion (Firm size effect excluded)
El-Sayed-Ebaid (2009), Egypt	Leverage and financial distress	Insignificant effect	Mixed results
Eboiyehi and Ikpesu (2017), Nigeria	Leverage and financial distress	Significant negative effect	Variables exclusion (Firm size effect excluded)
Fredrick (2018)	Impact of capital structure on financial distress in some selected manufacturing firms in Nigeria	Significant negative relationship between capital structure and corporate financial distress.	Moderating effect of firm size not examined
Abdioglu (2019)	Effect of some firm level variables on the relation between	Corporate financial distress level increases as leverage	Foreign study, to be replicated

	financial distress and capital structure decisions	and short-term debt maturity usage increases. Firm size was effective as a moderator.	
Ikpesu (2019)	Determinants of financial distress of firms in the manufacturing sector in Nigeria.	Firm-specific determinants of financial distress of firms in the manufacturing sector in the country include leverage, liquidity and firm size.	Moderating effect of firm size not examined
Gichaiya, Muchina and Macharia (2019)	Influence of corporate risk on financial distress.	Corporate risk significantly and positively influences financial distress	Capital structure variables were excluded

Researcher's Design (2020)

CHAPTER THREE

METHODOLOGY

3.0 Preamble

This chapter discusses the procedures employed to achieve the objectives of the study as well as the justifications for the methods and techniques adopted in the study. It covers the research design, methods and techniques of data collection and analysis. The chapter begins with the discussion of the research design adopted for the study, and then followed by the population and sample size determination. The chapter also discusses the sources and method of data collection for the study as well as the technique of data analysis employed. It also presents the models of the study as well as the manner in which the variables of the study were operationalized.

3.1 Research Design

The study employed ex post facto panel quantitative research design to investigate the relationship between capital structure and financial distress, as well as the moderating effect of firm size on the relationship, among listed companies in Nigerian industrial goods sector. This research design was preferred because the data to be used in this study comprise of previous years financial data that will be transformed into panels. This research design is suitable for this study because both the cross-sectional and longitudinal characteristics of the units being studied are required (Gujarati, 2003).

3.2 Population and Sample of the Study

The population of the study comprised all the listed companies in Nigerian industrial goods sector as at 31st December, 2018. According to Mugenda and Mugenda (2003), a census is

preferred where the population is small and manageable. In addition, census method enhances validity of the data collected by eliminating sampling errors (Saunders, Lewis, & Thornhill, 2009). The study excluded firms listed in the financial sector, which is the most capitalized sector on the NSE, which include banks and insurance companies since they are associated with special regulations with regard to capital requirements and mode of operations. Since the census survey was adopted, all the seventeen (17) listed companies in the industrial goods sector as at 31st December, 2018 constituted the sample size of the study.

3.3 Source and method of Data collection

In the course of this study, secondary data will be extracted from the annual financial statements of the sampled companies as presented on their websites and as published in Nigerian Stock Exchange Fact Books. Panel data methodology will then be explored to obtain sufficient data required for Multiple Regression Analysis. This will involve collection of data from the seventeen (17) listed companies over a period of seven (7) years covering 2012 – 2018. Thus, one hundred and nineteen (119) observations will be obtained which is sufficient for regression analysis. The data obtained for all variables in each firm will be organized into panels. According to Baltagi, Bratberg, and Holmas (2005), panel data are suitable for longitudinal analysis because it provides both the time and cross-sections dimensions.

3.4 Model Specifications

The main model revealing the relationship between the dependent, independent and moderating variables can be written in a functional form as the below:

$$\text{FDS} = f(\text{STD}, \text{LTD}, \text{LEV}, \text{MPF}, \text{AUD}, \text{FMS}) \quad (1)$$

Where:

FDS = Financial Distress

STD = Short-term Debt

LTD = Long-term Debt

LEV = Firm Leverage

MPF = Market Performance

AUD = Type of Audit Firm

FMS = Firm Size

However, four models were formulated for this study. The models were adapted from the study of Muigai & Muriithi (2017) in line with the research objectives. The models can be expressed in equation forms as shown below:

Model 1

$$FDS = \beta_0 + \beta_1STD + \beta_2MPF + \beta_3AUD + \varepsilon \quad (2)$$

Where:

FDS = Financial Distress

STD = Short-term Debt

MPF = Market Performance

AUD = Type of Audit Firm

$\beta_0 = \text{Constant}$

β_1, β_2 and $\beta_3 = \text{Regression Coefficients}$

$\varepsilon = \text{Error Term}$

Model 2

$$\text{FDS} = \beta_0 + \beta_1\text{LTD} + \beta_2\text{MPF} + \beta_3\text{AUD} + \varepsilon \quad (3)$$

Where:

FDS = Financial Distress

LTD = Long-term Debt

MPF = Market Performance

AUD = Type of Audit Firm

$\beta_0 = \text{Constant}$

β_1, β_2 and $\beta_3 = \text{Regression Coefficients}$

$\varepsilon = \text{Error Term}$

Model 3

$$\text{FDS} = \beta_0 + \beta_1\text{LEV} + \beta_2\text{MPF} + \beta_3\text{AUD} + \varepsilon \quad (4)$$

Where:

FDS = Financial Distress

LEV = Firm Leverage

MPF = Market Performance

AUD = Type of Audit Firm

β_0 = Constant

β_1, β_2 and β_3 = Regression Coefficients

ε = Error Term

Model Four

$$\begin{aligned} \text{FDS} = & \beta_0 + \beta_1\text{STD} + \beta_2\text{LTD} + \beta_3\text{LEV} + \beta_4\text{FMS} + \beta_5\text{FMS*STD} + \beta_6\text{FMS*LTD} + \beta_7\text{FMS*LEV} \\ & + \varepsilon \end{aligned} \tag{5}$$

Where:

FDS = Financial Distress

STD = Short-term Debt

LTD = Long-term Debt

LEV = Firm Leverage

FMS = Firm Size

FMS*STD, FMS*LTD and FMS*LEV = Moderating effects of firm size on the relationship between corporate financial distress and capital structure

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7 = Regression Coefficients

ε = Error Term

However, the a priori expectation is such that $\beta_1, \beta_2, \beta_3$ and $\beta_4 < 1$ while $\beta_5, \beta_6, \beta_7 > 1$. In other words, capital structure is expected to demonstrate a negative relationship with financial distress. Improvement in capital structure is expected to reduce the possibility of financial distress. Also, firm size is expected to have positive significant moderating effect on the relationship between capital structure and financial distress.

3.5 Measurement of Variables

The dependent variable in this study is financial distress, the independent variable is capital structure which is made up of short-term debt, long-term debt and firm leverage; control variables are market performance and type of audit firm while firm size is the moderating variable. The definitions and measurements of these variables are presented in table 3.1 below:

Table 3.1: Variables Definitions and Measurements

S/N	Variables	Definition and Measurement	Notation
1	Financial Distress	Altman's Z-Score as modified for emerging economies	FDS
2	Short-term Debt	Total Current Liability / Total Debt	STD
3	Long-term Debt	Total Current Non-Liability / Total Debt	LTD
4	Financial Leverage	Total Debt / Total Equity	LEV
5	Market performance	Earnings / Market Price per Share	MPF
6	Type of audit firm	Dummy variable; Big 4 = 1, Non-big 4 = 0	AUD
7	Firm Size	Natural Logarithm of Total Assets	FMS

Altman (2000) model, as modified for measuring financial distress in emerging economies, will be adopted for measuring financial distress in this study. This is presented as follows:

$$\text{Z-Score} = 3.25 + 6.56x_1 + 3.26x_2 + 6.72x_3 + 1.05x_4 \quad (6)$$

Where:

Z-Score = Financial distress for emerging economies

X_1 = Net Working Capital / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 = Earnings before Interest and Tax / Total Assets

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

3.6 Method of Data Analysis

Data analysis included descriptive and inferential statistics. Descriptive statistics included computation of percentages, means and standard deviation. Inferential statistics explored consists of multiple and moderated regression analyses. Multiple regression analysis was used to test hypotheses one, two and three which involve the test of relationships between one dependent variable and one independent variable and two control variables. Moderated Regression Analysis was employed to test hypothesis four to determine the significance of the relationship among the dependent, independent and the moderating variables. Statistical Package for Social Sciences (SPSS) version 22 was explored for the data analysis.

CHAPTER FOUR

PRESENTATION AND INTERPRETATION OF RESULTS

4.0 Preamble

Descriptive and inferential statistics were explored in this study. Percentages were used to evaluate degree of financial distress among the sampled companies. Mean scores of the relevant variables were used to answer the research questions. Correlations, multiple regression and moderated regression analyses were explored to test the hypotheses of the study.

4.1 Descriptive Statistics

Table 4.1 contains the percentages of distressed and non-distressed listed companies in the Nigerian industrial goods sector. Z-Score below 1.8 was taken as the cut-off point to determine the financially distressed companies using the 119 observations obtained from the secondary data explored in the study. Based on the cut-off point, approximately 40% of the companies were classified as distressed while almost 60% of the companies could be classified as non-distressed. Although the majority of the companies were categorized as non-distressed, the percentage of the distressed companies is also significant (40%). This outcome suggests that there is a need for further research, such as the current study, that will identify the determinants of corporate financial distress in this sector of the economy.

Table 4.1: Descriptive Statistics (Percentages)

S/N	Description/Observations	N	%
1	Distressed	47	39.50
2	Non-distressed	72	60.50
	Total	119	100.00

Research Survey (2020)

4.2 Research Questions

Four research questions were raised in this study. The research questions were meant to investigate the relevance of short-term debt, long-term debt, leverage and firm size in predicting financial distress among firms in the industrial goods sector of Nigerian economy.

4.1.1 Research Question One

Research question one sought to appraise the relevance of short-term debt in predicting financial distress among listed companies in Nigerian industrial goods sector. Short-term debt has a mean score of 9.36 (Min = 2.06, Max = 9.52, SD = .94658) which is closer to the maximum value (Table 4.2). This result signifies that an average firm in the sector has a high proportion of short-term debt in its capital structure which suggests that short-term debt may be a significant factor in predicting financial distress in the sector.

4.1.2 Research Question Two

Research question two attempted to evaluate the significance of long-term debt as a determinant of financial distress among listed companies in Nigerian industrial goods sector. Long-term debt has a mean score of 9.36 (Min = 3.06, Max = 11.52, SD = .96851) which is also closer to the

maximum value (Table 4.2). This outcome implies that an average firm in the sector has a high proportion of long-term debt in its capital structure which suggests that long-term debt may be a significant determinant of financial distress in that sector.

4.1.3 Research Question Three

Research question three focused on the importance of firm leverage in predicting financial distress among listed companies in the Nigerian industrial goods sector. From Table 4.2, it could be observed that firm leverage had a mean score of 4.23 (Min = .14, Max = 15.61, SD = 4.53803). This finding implies that an average firm in that sector is financing its assets with 4 parts of debt to 1 part of equity. Hence, it can be inferred that total debt is significant to the capital structure of an average firm in the sector and consequently may be relevant in predicting financial distress.

4.1.4 Research Question Four

Research question four was aimed at appraising the significance of firm size in moderating the relationship between capital structure and financial distress among listed companies in the Nigerian industrial goods sector. Firm size has a mean score of 9.81 (Min = 5.45, Max = 11.87, SD = .87355) which is approximately midway between the minimum and the maximum values (Table 4.2). This outcome implies that an average firm in the sector is medium in size. With this kind of spread, firm size is expected to be able to exert significant effect on corporate financial distress.

Table 4.2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FDS	119	-18.97	51.02	3.7285	9.99469
STD	119	2.06	9.52	7.6115	.94658
LTD	119	3.06	11.52	9.3600	.96851
LEV	119	.14	15.61	4.2306	4.53803
MPF	119	.01	45.00	1.7713	5.50064
AUD	119	.00	1.00	.5966	.49265
FMS	119	5.45	11.87	9.8050	.87355
Valid N (listwise)	119				

Research Survey (2020)

4.2 Hypotheses Testing

Four hypotheses formulated for this study were subjected to statistical tests. The outputs of the multiple regressions for hypotheses one, two and three as well as the outcomes of the moderated regression analysis for hypothesis four were subsequently presented.

4.2.1 Hypothesis One

Hypothesis one states that “short-term debt has no significant relationship with financial distress among listed companies in the Nigerian industrial goods sector”. The output of the model summary revealed that only 79.1% ($R^2 = 0.791$) of the variation in financial distress can be explained by the independent variable (short-term debt) and the control variables (Table 4.3). This outcome suggests that the significant determinants of financial distress among the sampled companies were captured by the model.

Table 4.3: Model 1 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889 ^a	.791	.785	4.63306

a. Predictors: (Constant), AUD, STD, MPF

Research Survey (2020)

The ANOVA output (Table 4.4) revealed a very high and significant F-value (F-value = 144.714, sig = .000). This outcome implies that the fitness of the model is good (Field, 2009).

Table 4.4: ANOVA Output (Model 1)

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	9318.960	3	3106.320	144.714	.000 ^b
Residual	2468.504	115	21.465		
Total	11787.464	118			

a. Dependent Variable: FDS

b. Predictors: (Constant), AUD, STD, MPF

Research Survey (2020)

Tolerance value and variance inflation factors (VIFs) were estimated to test for multicollinearity among the independent and control variables. It was observed that there was no multicollinearity problem because all the tolerance values were greater than 0.2 (Mernard, 1993) while all the VIFs were less than 10 (Belsely, 1991). As contained in Table 4.5, positive and significant relationships were observed between financial distress and the control variables; market performance ($\beta = 0.622$, t- value = 14.074, $p = 0.05$, sig = 0.000) and type of audit firm ($\beta = 0.489$, t- value = 11.071, $p = 0.05$, sig = 0.000). These outcomes imply that the two control variables contributed significantly to the predictive ability of the model. Also, a positive and significant relationship was observed between short-term debt and corporate financial distress ($\beta = 0.099$, t- value = 2.326, $p = 0.05$, sig = 0.022). This finding implies that an increase in short term debt will lead to an increase in the possibility of corporate financial distress. This finding implies that high finance cost associated with short term debt increases the probability of financial distress. Thus, financial managers should explore cheaper sources of finance such as

long term debt before going for costly sources of finance such as short term debt. This outcome aligns with pecking order theory which asserts that firms prefer to use internal financing and cheaper sources of finance than external financing or costly sources of finance and that it is only when the internal financing is exhausted that firms exploit other forms of external financings such as debt and finally equity. Therefore, the null hypothesis was rejected. It can then be inferred that short-term debt has significant relationship with financial distress among listed companies in the Nigerian industrial goods sector.

Table 4.5: Regression Coefficients (Model 1)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-12.185	3.480		-3.502	.001		
1 STD	1.050	.451	.099	2.326	.022	.996	1.004
MPF	1.130	.080	.622	14.074	.000	.933	1.072
AUD	9.925	.896	.489	11.071	.000	.933	1.072

a. Dependent Variable: FDS

Research Survey (2020)

4.2.2 Hypothesis Two

The second hypothesis states that “long-term debt has no significant impact on financial distress among listed companies in Nigerian industrial goods sector.” The output of the model summary indicated that 78.7% ($R^2 = 0.787$) of the variation in financial distress can be explained by long-term debt, market performance and type of the firm (Table 4.6). This outcome suggests that the

model can significantly predicts the possibility of financial distress in the sampled companies in the sector.

Table 4.6: Model 2 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.887 ^a	.787	.781	4.67715

a. Predictors: (Constant), AUD, LTD, MPF

Research Survey (2020)

The ANOVA output (Table 4.7) shows a very high and significant F-value (F-value = 141.279, p= 0.05, sig = 0.000). This outcome implies that the model is of good fitness (Field, 2009).

Table 4.7: ANOVA Output (Model 2)

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	9271.755	3	3090.585	141.279	.000 ^b
Residual	2515.708	115	21.876		
Total	11787.464	118			

a. Dependent Variable: FDS

b. Predictors: (Constant), AUD, LTD, MPF

Research Survey (2020)

Table 4.8 shows that there is no multicollinearity problem among the independent variables (tolerance values greater than 0.2, VIFs less than 10). A positive but insignificant relationship (Table 4.8) was observed between long-term debt and corporate financial distress ($\beta = 0.077$, t -value = 1.775, $p = 0.05$, sig = 0.079). However, as contained in Table 4.8, positive and significant relationships were observed between financial distress and the control variables; market performance ($\beta = 0.620$, t -value = 13.901, $p = 0.05$, sig = 0.000) and type of audit firm ($\beta = 0.487$, t -value = 10.870, $p = 0.05$, sig = 0.000). These outcomes imply that the two control variables contributed significantly to the predictive ability of the model while long term debt contributed less to the predictive ability of the model. Therefore, the null hypothesis was accepted. It can then be inferred that long-term debt has no significant impact on financial distress among listed companies in the Nigerian industrial goods sector.

Table 4.8: Regression Coefficients (Model 2)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-11.577	4.188		-2.765	.007		
1 LTD	.793	.447	.077	1.775	.079	.990	1.010
MPF	1.126	.081	.620	13.901	.000	.934	1.071
AUD	9.873	.908	.487	10.870	.000	.926	1.080

a. Dependent Variable: FDS

Research Survey (2020)

4.2.3 Hypothesis Three

Hypothesis three states that “firm leverage has no significant effect on financial distress among listed companies in Nigerian industrial goods sector”. The output of the model summary revealed that 88.1% ($R^2 = 0.881$) of the variation in financial distress can be explained by firm leverage and the control variables (Table 4.9). This outcome suggests that firm leverage, market performance and the type of audit firm are significant determinants of financial distress in the sampled listed companies in the sector.

Table 4.9: Model 3 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.938 ^a	.881	.878	3.49703

a. Predictors: (Constant), AUD, MPF, LEV

Research Survey (2020)

The ANOVA output (Table 4.10) revealed a very large and significant F-value (F-value = 282.959, p- 0.05, sig = 0.000). This outcome implies that the fitness of the model is very good (Field, 2009).

Table 4.10: ANOVA Output (Model 3)

Model	Sum of Squares	Df	Mean Square	F	Sig.	
3	Regression	10381.104	3	3460.368	282.959	.000 ^b
	Residual	1406.360	115	12.229		
	Total	11787.464	118			

a. Dependent Variable: FDS

b. Predictors: (Constant), AUD, MPF, LEV

Research Survey (2020)

Similarly, from Table 4.11, it was observed that there was no multicollinearity problem among the independent variables (tolerance values greater than 0.2, VIFs less than 10). As revealed in Table 4.11, positive and significant relationship was observed between financial distress and the control variable; market performance ($\beta = 0.609$, t- value = 18.274, $p = 0.05$, sig = 0.000) while the type of audit firm ($\beta = 0.073$, t- value = 1.349, $p = 0.05$, sig = 0.180) did not. These outcomes imply that market performance contributed significantly to the predictive ability of the model while the type of audit firm did not. Moreover, a negative and significant relationship (Table 4.11) was also observed between firm leverage and corporate financial distress ($\beta = -0.528$, t- value = -9.816, $p = 0.05$, sig = 0.000). This outcome implies that firm leverage also contributed significantly to the predictive ability of the model and that as firm leverage increases, the possibility of financial distress among the sampled companies in the sector decreases. Therefore,

the null hypothesis was rejected and it can be concluded that firm leverage has significant effect on financial distress among listed companies in the Nigerian industrial goods sector.

Table 4.11: Regression Coefficients (Model 3)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
	(Constant)	5.805	1.141				5.086	.000
3	LEV	-1.164	.119	-.528	-9.816	.000	.358	2.793
	MPF	1.106	.061	.609	18.274	.000	.935	1.070
	AUD	1.487	1.102	.073	1.349	.180	.352	2.845

a. Dependent Variable: FDS

Research Survey (2020)

4.2.4 Hypothesis Four

Hypothesis four states that “firm size has no significant moderating effect on the relationship between capital structure and financial distress among listed companies in Nigerian industrial goods sector”. The output of the model summary revealed that only 53.80% ($R^2 = 0.538$) of the variation in financial distress can be explained by firm leverage, short term debt, long term debt and firm size (Table 4.12).

Table 4.12: Model 4 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
4	.734 ^a	.538	.509	7.00205

a. Predictors: (Constant), FSILEV, STD, LEV, FSISTD, FSI, FSILTD, LTD

Research Survey (2020)

The ANOVA output (Table 4.13) revealed a significantly large F-value (F-value = 18.488, sig = .000). This outcome implies that the fitness of the model is good (Field, 2009).

Table 4.13: ANOVA Output (model 4)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6345.270	7	906.467	18.488	.000 ^b
	Residual	5442.194	111	49.029		
	Total	11787.464	118			

a. Dependent Variable: FDS

b. Predictors: (Constant), FSILEV, STD, LEV, FSI*STD, FSI, FSI*LTD, LTD

Research Survey (2020)

Significant multicollinearity problem was not envisaged among the independent and the moderating variables (Table 4.14) since all the tolerance values were either close to or greater than 0.2 (Mernard, 1993) while all the VIFs were less than 10 (Belsely, 1991; Field, 2000). A negative but insignificant relationship (Table 4.14) was observed between short-term debt and corporate financial distress ($\beta = -0.058$, t- value = -0.565, p = 0.05, sig = 0.573). A positive but insignificant relationship (Table 4.14) was also observed between long-term debt and corporate financial distress ($\beta = 0.211$, t- value = 1.265, p = 0.05, sig = .209). A negative and significant relationship (Table 4.14) was observed between firm leverage and corporate financial distress ($\beta = -0.696$, t- value = -10.320, p = 0.05, sig = 0.000). Also, a negative but insignificant relationship (Table 4.14) was observed between firm size and corporate financial distress ($\beta = -0.247$, t- value = -1.674, p = 0.05, sig = 0.097). However, Table 4.14 revealed that the interaction constructs; the product of firm size and short-term debt exerted non-significant moderating effect on corporate financial distress ($\beta = 0.056$, t- value = 0.384, p = 0.05, sig = .702); the product of firm size and long-term debt also exerted non-significant moderating effect on corporate financial distress ($\beta = -0.024$, t- value = -0.153, p = 0.05, sig = .879) and the product of firm size and firm leverage similarly exerted non-significant moderating effect on corporate financial distress ($\beta = 0.151$, t- value = 1.521, p = 0.05, sig = .131). These outcomes imply that financial distress patterns exhibited by the listed companies in Nigerian industrial goods sector depend majorly on the way the firms are financed regardless of their sizes. Therefore, the null hypothesis was accepted. It can then be inferred that firm size has no significant moderating effect on financial distress among listed companies in the Nigerian industrial goods sector.

Table 4.14: Regression Coefficients (Model 4)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	22.280	8.391		2.655	.009		
STD	-.614	1.086	-.058	-.565	.573	.393	2.544
LTD	2.175	1.720	.211	1.265	.209	.150	6.676
LEV	-1.533	.149	-.696	-10.320	.000	.915	1.093
FSI	-2.828	1.689	-.247	-1.674	.097	.191	5.242
FSI*STD	.541	1.407	.056	.384	.702	.198	5.040
FSI*LTD	-.185	1.214	-.024	-.153	.879	.172	5.821
FSI*LEV	.268	.176	.151	1.521	.131	.422	2.368

a. Dependent Variable: FDS

Research Survey (2020)

4.3 Discussion

This study investigated the effect of capital structure on corporate financial distress. It was found that short-term debt has a significant positive relationship with financial distress among listed

companies in the Nigerian industrial goods sector. This finding derived support from Abdioglu (2019) which revealed that corporate financial distress level increases as short-term debt maturity usage increases. This outcome was not supported by the studies of Turaboglu and Topaloglu (2017) and Vishnu et al. (2014) which revealed that debt has negative effect on corporate financial distress.

However, it was recorded in this study that long-term debt has no significant impact on financial distress among listed companies in the Nigerian industrial goods sector. The studies of Eboiyehi and Ikpesu (2017) and Turaboglu and Topaloglu (2017), which documented that capital structure has a negative effect on business distress, did not support this result. Moreover, this outcome was not supported by Fredrick (2018) that revealed a significant negative relationship between capital structure and corporate financial distress.

Moreover, another finding from this study revealed that firm leverage has a significant negative effect on financial distress among listed companies in the Nigerian industrial goods sector. This outcome aligns with the studies of Eboiyehi and Ikpesu (2017), Muigai and Muriithi (2017) and Outecheva (2007) that documented negative relationship between leverage and financial distress. This finding derived further support from Ikpesu (2019) which showed that firm leverage is a specific determinant of corporate financial distress. Contrarily, the outcome of the study of Chancharat (2008), which showed that an increase in the debt ratio of firm increases the likelihood of financial failure, did not support the outcome of this study. Also, our finding was not supported by El-Sayed Ebaid (2009) which found that the effect of financial leverage on financial distress is insignificant. Similarly, this outcome was not supported by Abdioglu (2019) which revealed that corporate financial distress level increases as firm leverage increases.

Nevertheless, this study observed that firm size has no significant moderating effect on financial distress among listed companies in the Nigerian industrial goods sector. This finding derived support from Gichaiya, Muchina and Macharia (2019) which revealed a positive insignificant effect of firm size on the relationship between corporate risk and financial distress. The study of Muigai and Muriithi (2017), which documented a significant moderating effect of firm size on the relationship between capital structure and financial distress, did not support the outcome of our study. Also, this outcome was not supported by Abdioglu (2019) which showed that firm size is effective in moderating the association between firm leverage and corporate financial distress.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Preamble

This chapter consists of summary of the work done, conclusion that emanated from the findings of the study and the recommendations that were derived based on the conclusion. Suggestions were also made for related future studies.

5.1 Summary

This project work consists of five chapters. Chapter one focused on the introductory aspect of the research. The background to the study gave a picture of the historical background of the problem being investigated. Justification for the choice of the investigation of financial distress in the industrial goods sector of the Nigerian economy was also reflected in the background of the study. Subsequently, the problem being investigated and the motivations for the investigation were discussed. The problem was addressed by channeling it through the research objectives, research questions to be answered and the research hypotheses to be tested. The significance of the study to the relevant stakeholders and definitions of relevant terms were also presented in that chapter.

Through extensive literature review on corporate financial distress, as presented in chapter two of the study, the topic of this study was drawn and the study attempted to examine the effects of capital structure on corporate financial distress in Nigeria. The study was narrowed down to the examination of the effects of capital structure on financial distress in listed firms in the Nigerian industrial goods sector. The relevant concepts reviewed include financial distress, capital

structure and firm size. Cash management theory, credit risk theory, pecking order theory and trade off theory were reviewed; but trade off theory and cash management theory were subsequently adopted. Relevant empirical literature was reviewed and this chapter was concluded by identifying the gaps in knowledge in relation to the relationship between capital structure and corporate financial distress.

The research method adopted was covered in chapter three. Ex-post facto research design was adopted for this study. This research was carried out using a sample size of seventeen (17) quoted companies in the Nigerian industrial goods sector of the economy determined by judgemental sampling technique. Secondary data used for this study were manually collected from the annual financial statements of the selected companies, covering a period seven (7) years (2012-2018). The dependent variable in this study is financial distress, the independent variable is capital structure which is made up of short-term debt, long-term debt and firm leverage; control variables are market performance and type of audit firm while firm size is the moderating variable.

The hypotheses of the study were tested with standard multiple regression and moderated regression analyses. The outcomes were reported in chapter four. Standard multiple regression analysis was used to evaluate the relationship between the dependent, independent and control variables. Moderated regression analysis was employed to test the moderating effect of firm size on the relationship between capital structure and financial distress. Statistical Package for Social Sciences (SPSS) version 22 was utilized for the data analysis.

Chapter five covers summary of the work done, the conclusion that emanated from the findings of the study and the recommendations that were derived based on the conclusion of the study. Based on the limitations of this study, suggestions were also made for further studies.

5.2 Conclusion

This study investigated the effect of capital structure on corporate financial distress, as well as the moderating effect of firm size on this relationship among listed companies in the Nigerian industrial goods sector. It was found that short-term debt has a significant positive relationship with corporate financial distress. It was found further that long-term debt has no significant impact on corporate financial distress. However, the study revealed that firm leverage has a significant negative effect on corporate financial distress. More findings revealed non-significant moderating effect of firm size on the relationship between capital structure and corporate financial distress. Consequently, it was concluded that short-term debt and firm leverage have significant effect on financial distress among firms in industrial goods sector of the Nigerian economy.

5.3 Recommendations

Since the study documented a significant positive relationship between short-term debt and financial distress, an increase in short-term debt will lead to higher probability of financial distress. The study also recorded non-significant relationship between long-term debt and financial distress which implies that long-term is less related with financial distress. Firm leverage was also found to be negatively related with financial distress which implies that more

total debt is less associated with financial distress. Non-significant moderating effect of firm size implies that financial distress patterns exhibited by the listed companies in Nigerian industrial goods sector depend majorly on the way the firms are financed regardless of their sizes. The policy implications of these outcomes include paying critical attention to short-term debt and long-term debt when making financial decisions. Since it was concluded that short-term debt and firm leverage have significant effect on financial distress among firms in industrial goods sector of the Nigerian economy, the study recommends that the management should utilize less short-term debt but more long-term debt in the capital structure of the firm.

5.4 Suggestions for Further Study

Further studies on the impact of capital structure on corporate financial distress in Nigeria may focus on other economic sectors such as oil and gas, Information Communication Technologies (ICT) and real estate/conglomerates. Further studies may also consider other moderating variables apart from firm size examined in the current study.

REFERENCES

- Abdioglu, N. (2019). The Impact of Firm Specific Characteristics on The Relation Between Financial Distress And Capital Structure Decisions. *Isletme Arastirmalari Dergisi*, 11(2), 1057-1067.
- Altman, E. I. (2000). *Predicting financial distress of companies: Revisiting the Z-score and ZETA models*. Stern School of Business: New York University.
- Andrade, G. & Kaplan, S. N. (1998). How costly is financial (not economic) distress? Evidence from highly leveraged transactions that became distressed. *The Journal of Finance*, 53 (5), 1443-1493.
- Andualem, U. (2015). Impact of financial distress on the profitability of selected manufacturing firms of Ethiopia. *Journal of Poverty, Investment and Development*, 16, 8-12.
- Baimwera, B. & Muriuki, A. M. (2014). Analysis of corporate financial distress determinants: A survey of non-financial firms listed in the NSE. *International Journal of Current Business and Social Sciences*, 1(2), 58-80.
- Baltagi, B. H., Bratberg, E. & Holmas, T. H. (2005). A panel data study of physicians' labour supply: The case of Norway. *Health Economics*, 14 (10), 1035-1045.
- Belsely, D. A. (1991). *Conditioning diagnostics: Collinearity and weak data in regressions*. New York: Wiley.

- Chen, J. J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business Research*, 57 (12), 1341-1351.
- Field, A. (2000). *Discovering statistics: Using SPSS for Windows*. London: Sage Publications.
- Fredrick, I. (2018). Capital structure and corporate financial distress of manufacturing firms in Nigeria. *Journal of Accounting and Taxation*, 10(7), 78-84.
- Gichaiya, M. W., Muchina, S., & Macharia, S. (2019). Corporate Risk, Firm Size and Financial Distress: Evidence from Non-Financial Firms Listed In Kenya.
- Gujarati, D. (2003). *Basic Econometrics* (4 Ed.). New Delhi DN: McGraw Hill.
- Gupta, P., Srivastava, A. & Sharma, D. (2014). Capital structure and financial performance: Evidence from India. *International Research Journal*, 2 (6): 112-126.
- Ikpesu, F. (2019). Firm specific determinants of financial distress: Empirical evidence from Nigeria. *Journal of Accounting and Taxation*, 11(3), 49-56.
- Ikpesu, F. & Eboiyehi, O. C. (2018). Capital structure and corporate financial distress of manufacturing firms in Nigeria. Retrieved from <https://igetintopc.com/stata-14-2-%E2%80%8Bfree-download%E2%80%8B/>

- Maina, L., & Ishmail, M. (2014). Capital structure and financial performance in Kenya: Evidence from firms listed at the Nairobi Securities Exchange. *International Journal of Social Sciences and Entrepreneurship*, 1 (11), 209-223.
- Mernard, S. (1993). *Applied logistic regression analysis*. Sage University paper series on quantitative applications in social sciences, CA: Sage.
- Mugenda, M. A. & Mugenda A. L. (2003). *Research methods quantitative and qualitative approaches*. Nairobi, Kenya: African Center for Technology Studies.
- Muigai, R. G. & Muriithi, J. G. (2017). The moderating effect of firm size on the relationship between capital structure and financial distress of non-financial companies listed in Kenya. *Journal of Finance and Accounting*, 5(4), 151-158.
- Muigai, R. G. (2016). Effect of capital structure on financial distress of non-financial companies listed in Nairobi Securities Exchange. *COHRED, Finance, JKUAT*, 3(1), 17-31.
- Mule, R. K., Mukras, M. S., & Nzioka, O. M. (2015). Corporate size, profitability and market value: An econometric panel analysis of listed firms in Kenya. *European Scientific Journal*, 11 (13), 376 - 396.
- Mwangi, M., S., & Kosimbei, G. (2014). Relationship between capital structure and performance of non-financial companies listed in the Nairobi Securities Exchange, Kenya. *Global*

Journal of Contemporary Research in Accounting, Auditing and Business Ethics, 1 (2), 72-90.

Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 1 (1), 109-131.

Pandey, I. M. (2009). *Essentials of Financial Management* (1st Ed.). New Delhi (DN): Vikas Publishing House Ltd.

Ross, S. A., Westerfield, R. & Jordan, B. D. (2008). *Fundamentals of corporate finance*. UK: Tata McGraw-Hill Education.

Saunders, M. L., Lewis, P. & Thornhill, A. (2009). *Research Methods for Business Students*. London (UK): Financial Times Prentice Hall Inc.

Surajit, B., & Saxena, A. (2009). Does the firm size matter? An empirical enquiry into the performance of Indian manufacturing firms. Retrieved from <http://ssrn.com/abstract/1300293>.

Turaboglu, T. T., Erkol, A. Y. & Topaloglu, E. E. (2017). Financial distress and capital structure decision: An application on BIST 100 firms. *Business and Economics Research Journal*, 8(2), 247-258.