Capital Structure:
The Case of Nigerian Non Financial Corporations

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ABSTRACT

The aim of this empirical study is to look into the determinants of capital structure of non-financial firms in Nigeria and the impact of the capital structure on the corporate performance of these publicly traded firms.

Different theories of capital structure were reviewed with a view to establishing valid propositions concerning the determinants of capital structure of Nigerian non financial corporations. The research is conducted using panel data methodology for a sample of 20 firms listed on Nigerian Stock Exchange during 2006-2010.

The results have shown that the major determinants of capital structure based on this study include: profitability, tangibility and liquidity. Age, Size and tangibility play determining roles in accessing long-term debt finance within the Nigerian context.

Non-financial firms in Nigeria that are highly profitable would prefer internal funding over debt financing since cost of external financing is expensive. This supports pecking order theory.

Keywords: Capital Structure, Corporate Performance, Determinants of Capital Structure

ÖZ

Bu ampirik çalışmanın amacı Nijerya'daki finansal olmayan kurumların sermaye yapısı belirleyicilerini incelemek ve bu finansal yapıların halka arz edilmiş şirketlerdeki kurumsal performans etkilerini belirlemektir.

Nijerya'nın finansal olmayan kurumlarının sermaye yapısı belirleyicilerinin geçerli savlarını saptamak amacıyla farklı sermaye teorileri kullanılmıştır. Bu çalışma; Nijerya sermaye piyasasında 2006–2010 yılları arasında yer alan 20 firma için panel veri serisi yöntemleri uygulanarak yürütülmüştür.

Bu çalışmanın dayandığı sonuçlar göstermiştir ki sermaye yapısının temel belirleyicileri: karlılık, somutluk ve likiditedir. Yaş, boyut ve somutluk, Nijerya için uzun dönemli borç finansmanının erişim bağlamında çok önemli faktörler olduklarını göstermiştir.

Anahtar Kelimeler: Sermaye Yapısı, Kurumsal Performans, Sermaye Yapısı Belirleyicileri.

To God and My Family

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABREVIATIONS

LDC	Long-term Debt to Capital
DC	Debt to Capital
DA	Debt to Assets
DCE	Debt to Common Equity
LDCE	Long-term Debt to Equity
ROC	Return on Capital
ROE	Return on Equity
OM	Operating Margin
ROA	Return on Assets
EPS	Earnings per Share
NM	Net Margin
TD	Total Debt
TA	Total Asset
STD	Short-term Debt
LTD	Long-term Debt
DTS	Non-debt Tax Shield

Chapter 1

INTRODUCTION

Capital structure has become major issues in today's corporate world. This research looks at the subject of capital structure as it relates to non-financial firms in Nigeria. Subsequently, the structure is outlined to give the reader an overview in the following sections:

1.1 Background

Financing decision by companies demands that managers look for various means of accessing funds or making financial provisions for new investments. Choices that could be put into action by managers normally fall into three choices namely: the use of retained earnings, debt instruments or the issue of new shares. Therefore, a firm's established capital structure would include retained earnings, debt and equity. According to La Porta et al. (1999), a particular pattern of capital structure found in developing and developed countries is one in which the three elements of capital structure identified above show a structure of firm ownership in a way that the first and third elements (retained earnings and equity) show ownership mainly by shareholders while the second element ownership by debt holders.

While there is a plethora of research on capital structure in advanced economies, there is very little empirical research on developing economies. Murinde (1996) attributes this mainly to the fact that it is only recently that inquiry into corporate finance in developing countries started. The same paper further explains that most

developing countries at the inception chose a state-sponsored route to development, while the corporate sector played an insignificant role in the expansion of these economies. Poorer economies, regardless of development strategy also have just an incipient corporate sector whose funding requirements were contributed by development banks which had a stake in the corporate sector (Prasad et al., 2001).

Overall, the capital structure affects the corporate behavior of a firm and is very vital in the explanation of the way economic players blend and the impact on their earnings (Hutton and Kenc, 1998), (Prasad et al, 2001). Abor (2005) also posits that the choice of capital structure is one of the key challenges that many firms face as decisions on capital structure have the ability to impact on the financial performance of firms.

Today, firms have an array of capital structure alternatives, which allows them to expand their leverage or financing options. Abor (2006) proposes that a company can borrow by issuing different types of financial instruments. The issue of what variables are responsible for determining capital structure decisions in companies has thus become an unsolved one in corporate finance as a result of the lack of agreement on a particular theory. Different variables have been put up as responsible for the capital structure decisions (Biger et al., 2008). The effect of capital structure on the overall cost of capital, on the value of the firm have also created controversies in the corporate finance world and has led to further controversies on what mix of debt and equity can help in the achievement of optimal capital structure (Akinmulegun and Oloyede, 1999).

1.2 Purpose and Importance of the Study

The purpose of this research is to look into the debate on the determinants of capital structure, an issue which has raised a lot of discussions among experts in the finance field. The research uses non-financial corporate firms in Nigeria that were selected from five sectors as it aims at determining the variables that influence the capital structure of these Nigerian firms over the period 2006 - 2010. The research also aims at testing the impact of capital structure on corporate performance of these publicly traded Nigerian firms.

The research creates an overview of capital structure theories, especially the ones that are quite relevant to the Nigerian corporate world. It also provides descriptions of some significant studies relevant to the Nigerian context in the review of literature section in a bid to motivate and compare results of this study.

The relevance of this study is seen in the fact that it gives credence to La Porta et al's (2000) suggestion that the determinant of capital structure could be affected by factors that are specific to individual countries, thus this study helps in understanding the behavior of non-financial firms in Nigeria. The study is also important in the sense that there has been limited work done specific to Nigeria in terms of capital structure determinants as well as its impacts on firm performance (Olowe, 1998); (Akinmulegun and Oloyede, 1999), (David and Olorunfemi, 2010). This research therefore adds to the literature on the determinants of capital structure for non-financial and quoted firms in Nigeria and its empirical findings is expected to help corporate managers in making optimal capital structure decisions in future.

1.3 Objective of the Study

The study emphasizes past research on firms in Nigeria and builds on these studies; it also models all the important variables affecting capital structure decisions of Nigerian corporate firms. The study also aims to inform as well as to create an understanding on the situational level of financing for non-financial firms in Nigeria. Furthermore, the study gives idea of the level of dependence on capital market funds and the impact funding decisions can have on the value or performance of the firm.

1.4 Research Questions

The study posits number of questions that need to be answered. They include:

1. What factors determine the capital structure decisions in the non-financial sector in Nigeria?

2. What is the impact of capital structure on the corporate performance of non-financial firms in Nigeria?

1.5 Scope of the Study

The study discusses the idea that a suitable capital structure is an important decision for any firm, not only because it helps in increasing the returns to organizational stakeholders, but also because of the effect such decisions can have on the firm's performance. The study therefore focuses on relevant capital structure theories as well as determinants of capital structure; sectorial analysis of capital structure in Nigeria which involves five sectors: consumer goods sector, household sector, industrial sector, petroleum & petroleum products sector and the healthcare sector. The study uses four firms from each sector in its analysis as well as in arriving at its conclusion. The study also focuses on these firms in assessing the impact which capital structure can have on corporate performance of non-financial firms.

The panel character of the data allows for the use of panel data methodology which involves the pooling of observations on a cross section of units over a period of time while ordinary least square measures were used in the analysis.

1.6 Definition of Terms

Terms which appear most often in the study include: capital structure, optimum capital structure, and leverage.

Capital Structure- the term capital structure is used to represent the mixture of debt and equity and other sources of finance that a firm uses in funding its long term investments (Brigham and Ehrhardt, 2002).

Optimal Capital Structure: This refers to the best debt-to- equity ratio for a firm that maximizes the value of that firm (Myers, 2002).

Leverage: It refers to the extent to which a firm relies on debt. In other words the more debt financing a firm uses in its capital structure, the more financial leverage it employs. It also explains the use of debt to increase the expected return on equity (Brealey et al., 2001).

1.7 Limitation of the Study

The study is limited by the difficulty involved in getting data as a result of the lack of transparency in publishing financial statements in Nigeria. This thus has a tendency of affecting the outcome of the study. For this reason, the researcher's position would continually be stated during the analysis stage in chapter 4. It is also for this reason that data will only be retrieved from the Nigerian Stock Exchange.

The study is also limited by the number of firms used. It should be noted that the Nigerian economy is one with very few non-financial firms. A wider range of sectors and larger number of firms would have improved the result of this study.

1.8 Proposed Structure

The study is structured into five main parts as follows:

Chapter one introduces the study by providing an overview on the relevance of capital structure and highlights the challenges that firms face in making or arriving at an appropriate capital structure. This chapter also states the objectives and purpose of the study and outlines the research questions which are to be answered through the research exercise and which will form the basis of our conclusion.

Chapter two encloses the review of literature and provides a brief review of previous studies focused on developing economies like Nigeria and it does a comparison to studies that focused on developed countries like the United States of America. This chapter also looks at various theories that are particularly relevant for this study and evaluates what has been written on the various determinants or variables to be used in the study.

Chapter three explains the research methodology. It looks at the data used in this research and describes the variables, methods and instrumentation used in carrying out the research. This chapter also describes the model development and research hypotheses used.

Chapter four provides an analysis and interpretation of data and discusses the implications for corporate managers in Nigeria.

Chapter five deals with the conclusion of the study and recommendations based on the analysis of data collected as well as the literature reviewed in the course of the research. It also highlights areas for further study that could not be covered under the research as well as limitations of the study.

Chapter 2

LITERATURE REVIEW

Capital structure decisions have always been considered as very important for every business organization, especially in corporate firms where these decisions are taken by management with an aim to maximize firm value. It should be noted that the aim of maximizing firm value is a very important one as it is concerned mainly with choosing a balanced ratio of debt and equity securities in a way that considers the expense and benefits associated with these securities. Also, a poor judgment in selecting the right mix of debt and equity could result in financial distress and may lead to bankruptcy eventually (Sheikh and Wang, 2011).

The need to determine the right mix of debt and equity or the optimal capital structure for a firm has led to the development of alternative capital structure in recent times, though this has not led to the realization of a major methodology for the determination of an optimal debt level. Sheikh and Wang (2011) suggest that this could be attributed to the fact that most of the theories related to capital structure vary in their focus. Sheikh & Wang (2011) noted that despite these differences, these theories still help in providing an understanding of the funding behavior of firms.

There is a huge number of works focused on developed or industrialized nations and only a few have touched developing nations. Chen (2004) notes that research on

capital structure has, in recent years become more internationalized. Worthy of note is the research by Rajan & Zingales (1995), which used models of capital structure taken from research on US firms (Mouamer 2011). Wald (1999) in his assessment of the characteristics of firms that were not correlated with debt ratios among countries also showed that a country's institutional structure may have a huge effect on firm's capital structure decision and also that agency and monitoring problems that exists in different countries had the potential of bringing varying outcomes.

Abor and Biekpe (2009), explain that the differences in institutional arrangements and financial markets between developed and developing countries justifies the need to look at the issue of capital structure decisions, its determinants as well as its impact on firm performance from the viewpoint of developing countries especially countries within sub-Saharan Africa.

This section of the research will present a review of the different theories of capital structure as well as the determinants of capital structure and their relationship to the different theories, and since the focus is on Nigeria, it would also look at past studies of capital structure on Nigerian firms.

Capital structure is defined as a specific mixture of debt and equity a firm uses to finance its operations. Bos and Fetherston (1993) define capital structure as total debt to total assets at book value which influences both the profitability and riskiness of the firm. Jaffe et al., (1996) refer to capital structure as the proportion of the long-term sources of funds used by a firm and it comprises debt, preferred stock and common equity. According to them, a firm can choose any capital structure as it wants and could increase or decrease its debt/equity ratio by either issuing debt to

buy back stock or issuing stock to pay debt. Overall, the objective of having a proper mix of capital structure is to maximize the wealth of shareholders and minimize the firm's cost of capital.

While there may be many definitions for capital structure, one definition that stands out is that by Van Horne and Wachowicz (1995) which refers to it as the composition of a firm's liabilities and owner's equity, with decisions relating to it being one of the three financing decisions-investment, financing, and dividend decisions which finance managers have to make.

There is an array of capital structure theories; a review of the different theories would be analyzed in order to better explain various determinants of capital structure.

2.1 Theories of Capital Structure

Myers (2002) indicates that the capital structure theories and empirical evidences focus mainly on financing strategy as well as the selection of an optimal debt ratio for a certain type of firm that operates in a distinct institutional environment. According to Myers (2002), these theories are credible not because they do a perfect job highlighting the differences in total debt ratios, but because the costs and benefits that propel the theories at work in financing strategies can be observed.

While there is no universal theory of capital structure, there are however, some relevant conditional theories and these theories can be distinguished in their relative focus on the factors that could significantly impact the right mix of debt and equity. These factors comprise taxes, agency costs, and differences in information, institutional or regulatory constraints and a whole lot more (Myers, 2002). The same

author stressed that each of these factors could be very significant for some firms and for other firms they could be highly unimportant.

The leading theories are given below. Majority of these theories overlap and a blend of these theories help in explaining capital structure.

2.1.1 The Modigliani-Miller Value-Irrelevance Propositions

The literature on corporate finance has seen huge progress since the seminal works of Modigliani and Miller (1958). Prasad et al., (2001) notes that Modigliani and Miller's (MM) paper focuses on invalidating the traditional view (TV). The traditional view is focused on a firm's weighted average cost of capital (r_a) which is the minimum overall return that is needed to meet the requirements of all stakeholders. The traditional view is based on the idea that debt is less expensive than equity as a means of funding. However, Titman (2002) notes that the process of continuously increasing a firm's debt level might not hold for the foreseeable future, because in the real world, increasing debt level would also increase the possibility of default or bankruptcy thereby resulting in debt holders and shareholders demand greater returns to their investments. Optimal leverage under the TV would thus occur at the point where r_a is minimized and firm value is maximized.

The MM on the other hand takes the assumption of a perfect capital market with perfect in this case requiring that capital markets are not only competitive and aggressive, but they are required to be complete. Myers (2002) explains that this is required so that the risk involved in every security issued by the firm can be matched in capital markets by purchase of another existing security or portfolio, or by a dynamic trading strategy. The MM theory also derives three propositions that relate

to the firm's value, the behavior of the cost of equity, and the cut-off rate for additional investment.

MM's Proposition I states that the market value of any firm is independent of its capital structure, thus the firm's average cost of capital is also independent of its capital structure (Constantinides 2003). Under this proposition, financial leverage or gearing is irrelevant and it does not matter whether debt is short or long-term, callable or call-protected, straight or convertible, in dollars or euros, or some mixture of all of these or other types (Myers, 2002).

MM's Proposition II states that the rate of return required by shareholders increases linearly as the firm's debt-equity ratio increases (Prasad et al, 2001). In other words, the cost of equity increases in order to offset exactly any benefits accrued by the use of cheap debt. According to Myers (2002), this proposition shows why there is "No trickery in financial leverage" as an attempt to replace inexpensive debt for costly equity would fail to reduce the whole cost of capital, due to the fact that it would only make the outstanding equity still more costly or enough more expensive to keep the overall cost of capital constant.

MM's Proposition III states that a firm will only undertake investments whose returns are at least equivalent of its r_a (Prasad et al, 2001).

Prasad, Green & Murinde (2001) cite two differences between the conclusion of TV and the MM and agree that while under the TV, the value of the firm and its cost of capital are linked to its capital structure, under MM's first proposition they are independent of the capital structure. Secondly, under MM's second proposition, if a

firm's management chooses to maximize shareholder returns, then that firm would make use of debt until a hundred percent debt level is attained. According to Green et al. (2001), MM's second proposition cannot be entirely true as a firm that is hundred percent debt-financed is basically bankrupt. Overall, the second proposition showed that at low levels of debt, the cost of equity increases faster under MM than TV, while at higher levels of debt, the risk of default and the cost of equity increases faster under TV than under MM's proposition.

Though the MM theory implies a perfect market, in general there are market imperfections like taxes and financial distress which could have huge effects on the firm's capital structure. Some of the other theories have included the existence of many market imperfections, like agency costs and costs associated with asymmetric information. These factors are believed to affect significantly the capital structures of firms and are discussed in the other theories.

2.1.2 The Trade-Off Theory

The trade-off theory maintains that the capital structure of a firm is the outcome of the trade-off between the benefits of debt and the costs of debt (Joshua Abor, 2007). Typical arguments for the trade-off between the costs and benefits of debts are based on bankruptcy costs, tax benefits and agency costs related to asset substitution, underinvestment and overinvestment (Oztekin, 2009). Myers (2002) explains that the trade-off theory has common-sense and practical appeal, since it recognizes the value of the interest tax shields and it also accommodates the costs of financial distress. The theory therefore explains moderate and cautious borrowing.

Sheikh & Wang (2011) explain that the trade-off theory shows that firms borrow to a point where the tax savings from an extra dollar in debt are entirely equal to the

costs that results from the increased probability of financial distress. The authors explain further that the trade-off theory considers a firm as aiming to achieve a target debt to equity ratio and steadily moves towards it, thus showing that an optimal capital structure of some sort which can maximize firm value operates.

In testing the evidence for the trade-off theory, Smith & Watts (1992) stressed the statistical relevance of the "investment opportunity set" by showing that the more profitable a company's future investment opportunities are, the less that firm borrows today. Reasons given to support this assertion were the fact that growth opportunities are fictitious assets, which could be lost when the firm goes bankrupt; and the fact that a firm that issues risky debt today would weaken its incentives to invest in the future.

Raviv (1991) in studying some common factors that could highlight debt ratios cross sectionally showed that big firms with tangible assets seem to have access to borrowed funds more than small and risky firms with mostly intangible assets. Intangible assets normally associated to spending on marketing expenses, adverts and R&D. Companies that are very profitable and have high growth opportunities are also viewed as firms with tendencies to borrow less, while majority of these factors seem to fit well under the trade-off theory.

Fama & French (2002), in showing that the empirical evidence for the trade-off theory is not as plausible as it seems, pointed to the fact that there are many hugely profitable firms operating at low debt ratios. Another study conducted by Wald (1999) also showed that profitability was the most distinct and biggest determinant of

debt-asset ratios in cross-sectional studies for the USA, UK, Germany, France and Japan.

Overall, while high profitability has been linked with low debt and vice versa, Constantinides (2003) however believes that if managers can exploit valuable interest tax shields, just as the trade-off theory predicts, then an opposite relationship would be seen, where high profitability would now mean that the firm would have more taxable income to shield, and also that the firm can service more debt without risking financial distress.

2.1.3 The Pecking Order Theory

The pecking order theory assumes a semi-strong form market efficiency, according to this theory, the adverse selection costs of issuing risky securities, either due to asymmetric information (manager's information advantage over outside investors) or managerial optimism, lead to a preference ranking over financing sources by creating a wedge between internal and external financing costs and by increasing the difficulty of issuing securities (Joshua Abor, 2007).

The firm in this case, requires extra equity financing and with investors not knowing the worth of either the available assets or the new growth opportunity (Myers, 2002). Myers & Majluf (1984) also develop a balance in which firms can issue shares, though at a marked-down price and explains that the price of shares drops because of information gathered from the decision to issue. Cooney & Kalay (1993) also posit that some really excellent firms with assets-in-place are not properly valued at the latest price might make a decision not to issue even if it means forfeiting a positive-NPV opportunity.

Myers & Majluf (1984) suggests that the decision to issue debt or equity by a firm to finance a new investment also creates a pecking order problem as the notice of a debt issue is expected to have less influence. Myers & Majluf (1984) explain further that debt issuance minimizes the manager's information advantage but some managers who are quite optimistic and believe that their firm's shares are undervalued will prefer to issue debt to equity as any attempt by a firm to sell shares when debt is an open alternative will show to a large degree that the shares are not a good enough to be bought.

The Pecking-order theory therefore is summarized into four parts to show that: firms prefer internal to external financing, dividends are sticky and cuts in dividends should not be used in the financing of capital expenditure as well as that changes in cash requirements are not soaked up in short-run dividend changes (Myers,2002).

In essence, the pecking-order theory thus shows why a huge volume of external financing comes from debt. The theory also shows the reasons why more profitable firms borrow less which is not because the firms target debt ratio is low as firms in the pecking order do not have a target but because most profitable firms have more access to internal financing, while less profitable firms require more external financing and eventually accumulate more debt.

In criticizing the pecking-order theory, Constantinides & Grundy (1989), write that the financing strategies are not expansive and the result will be to have more knowledge and a special one available to the manager that can reach the investors.

Cadsby et al. (1998) also critiques the theory only considers a straightforward setting where the only financing option is debt vs. equity, and thus more complicated settings, for instance in cases where the firm chooses between straight and convertible debt.

2.1.4 Agency theories of Capital Structure

According to Myers (2002), other theories assume that the interests of the company's managers and its shareholders (owners) are carried out for the shareholders' benefit, but Jensen & Meckling (1976), Prasad et al, (2001) show that this idea is unreasonable in the real world because corporate managers will always work for themselves and lead to conflicts between shareholders and the managers which according to Jensen & Meckling (1976), Prasad et al, (2001), takes distinct forms. These forms include the fact that managers would rather have greater reward levels and put in lesser effort, as far as they do not have to pay for these through lower remunerations or by a reduction in the market value of their personal equity investments. A second form grows from the fact that managers may prefer short-term projects, which produce early results and enhance their reputation quickly, rather than more profitable long-term projects (Masulis, 1988). A third form, is the fact that managers may prefer less risky investments and lower gearing to reduce the possibility of bankruptcy, and also that they will wish to minimize the possibility of employment termination. Finally, managers and shareholders may have conflicts over the operating decisions of the firm and this could arise when managers choose to keep running the firm in spite of a recommendation of liquidation (Stulz, 1990), (Prasad et al, 2001).

Jenson & Meckling (1976) also explains that the costs derived as a result of the conflicts of interest is known as agency costs; they explain that agency costs arise

due to the associations between a firm's managers and its shareholders, as well as between its debt holders and its shareholders.

Different solutions have been proposed to limit the principal-agent problems, one of such solutions was proposed by Jensen (1986), who proposed that shareholders can deter management from carrying out unbeneficial expansion by decreasing the free cash flow which is gotten internally and is subject to very little external monitoring. To achieve this, shareholders can either increase the company's payment of dividend or increase its leverage- an increase in the firm's leverage is expected to increase the risk of bankruptcy and thus reduce or limit management's consumption of perquisites (Jensen 1986) , (Prasad et al, 2001).

Jenson & Meckling (1976) while acknowledging the fact that managers like growth opportunities because it promotes aspect related to the manager's skills and bring about management benefit (since it creates a sort of defense for them in the firm). It means that since with greater growth opportunities comes a greater probability for management to over-invest, it thus shows that there exists a direct relationship between growth opportunities in a firm and the degree of convertible debt, and that there exists an inverse relationship between growth opportunities and long-term debt (Abor, 2008).

Kensinger & Martins (1986) in proposing solutions to limit shareholder-manager conflicts proffered a situation where the firm is reorganized into a limited partnership (or royalty trusts), with the managing partner having restricted power to make decisions regarding dividend/reinvestment (Prasad et al, 2001). In this situation, the ploughing back of profits is put in the hands of individual partners or shareholders

thus reducing the manager-shareholder agency costs by eliminating management's decision-making power.

While agency costs may arise due to conflict between shareholders and managers, conflict between equity holders and debt holders is also believed to create agency costs. Prasad et al, (2001) cited four main reasons of conflicts:

i. Dividend payments- where prices are based on the amount of dividends payment. The debtholders are left with claims that are worthless.
ii. Claim dilution- since bonds issued by firms are priced based on the assumption that the firm will not go on with additional leverage, a situation where the firm issues another debt will cause the available debt to reduce in value, and lead to default.
iii. Asset substitution- The claims of lenders become decreased if a firm substitute projects that increases the variance of the firm.
iv. Under-investment and mis-investment- this would occur when a firm in financial problems chooses to carry out a high-risk, high net present value investments.

There are two competing hypotheses on the impact which the equity holder-bondholder conflict can have on firm value and these hypotheses are based on the assumption of imperfect information of the capital market- these hypotheses include: the Irrelevance Hypothesis and the Costly Contracting Hypothesis.

Prasad et al, (2001) indicate that the cash flows to the holders still leave each individual investor of the same level. The Costly Contracting Hypothesis explains how to manage and regulate the conflict of interest between stockholder-bondholder

will in the end add to the value of the firm. Krishnaswami et al, (1999) give two reasons why the imposition of such contracts or debt covenants help increase the value of the firm. First, they explain that the contracts decrease the costs that are suffered by the debt holders if shareholders refuse to work to maximize the firm's value. Second, the contracts or covenants help in reducing the monitoring costs of bondholders, therefore creating the chance for better control, enhanced management decisions and eventually lead to rise in firm's value.

According to Sheikh & Wang (2011), there have been different studies but no agreement has been arrived at. The trade-off theory focuses on taxes, while the pecking order theory focuses on the variations in information available to stakeholders. Therefore, there is no generally accepted theory of debt-equity choice.

2.2 Determinants of Capital Structure

This part of the review helps in understanding the attributes that have been suggested by the various conditional theories of capital structure. The theories have the capabilities to affect the decisions regarding a firm's capital structure. The variables and the way they influence the selection of an optimal capital structure have been examined by various studies and are discussed below (Sheikh & Wang 2011).

2.2.1 Profitability

There is a contrast of views on the effect of profitability, with some theorists or researchers agreeing on a positive relationship while others agree on a negative relationship. Huang & Song (2006) refer to profitability as the ratio of earnings before interest, tax (EBIT) and depreciation to total assets. Implications about the relationship between profitability and leverage are normally viewed from the angles of the pecking order and trade-off theories which have opposite views. The pecking

order theory believes that there exists a negative relationship, while the trade-off theory believes that the relationship between both variables is positive (Balcilar et. al, 2009).

From the point of view of the pecking order theory, firms prefer to use funds that are generated internally. This therefore suggests a negative relationship between profitability and leverage. The trade-off theory on the other hand postulates that the more profitable a firm is, the higher should be its leverage, as a result of the firm availing the benefit of debt tax deductibility of interest payment- hence a positive relationship.

Mouamer (2011) however, writes that most statistical studies indicate that profitability has a significant negative effect on the debt ratio and gave examples of studies from US and Japanese firms, as well as studies for developed and developing countries.

2.2.2 Tangibility

Rajan & Zingales (1995) opine that the tangibility of an asset represents the effect of the collateral value of assets on the firm's leverage. Some authors have argued that tangibility could be the most important variable in determining the firm's leverage. Overall majority of studies agree that there is a positive relationship between tangibility and debt ratio.

A major voice on the positive relationship between tangibility and leverage is that of Jenson & Meckling (1976) who argue that the issuance of debt acts as an incentive for shareholders to invest sub-optimally in high-risk investments. This results in the shareholders taking advantage of the likelihood of making bigger returns at the

expense of pushing the risk up, which is borne by the debt-holders (Mouamer, 2011). On the other hand, if such debt is secured against assets, then it restrains and limits the borrower to using the borrowed funds and creditors can have a better assurance of the repayment of such funds (Mouamer, 2011).

Titman & Wessels (1998) however, believe that there exist a negative relationship between tangible assets and leverage, and they explain that the possibility of corporate managers to use up more than the optimal amount of funds in their possession could bring about this negative correlation. They explain further that firms with fewer tangible assets may choose higher debt levels in order to halt the tendency of managers to use more than the optimal level of perquisites.

Overall, one clear agreement on the views on tangibility is the fact that shareholder-debtholder conflicts of interest can be very much reduced by firms securing debt against assets, and especially the fixed assets.

2.2.3 Size

Firm size has been considered a very important determinant of capital structure, and one of the reasons given for this is the fact that large firms are usually more spread out in term of operations and thus have lower propensity to default (Rajan & Zingales, 2005). Thus, Rajan & Zingales (1995) suggests that large firms should borrow more due to the fact that they are more diversified, less prone to bankruptcy and have lower bankruptcy costs. In the same way and as a result of credit ratings, most large firms find it less tedious to access non-bank debt financing; this thus gives and supports the idea that there exists a positive relationship between firm size and debt ratio.

Alternatively, studies that have found a negative relationship between firm size and leverage have argued that since larger firms tend to give out more information than the smaller firms then, it shows that the challenge of information irregularity is less restrictive for the large firms, and due to this, large firms should issue less debt as they have the ability to issue informationally sensitive securities like equity and thus have lower leverage (Sheikh & Wang 2011).

2.2.4 Non-debt Tax Shields

Empirical findings on the relationship between non-debt tax shields and debt is considered to be mixed. Prasad et al, (2001) explain that one interesting thing to note about the corporate tax is the fact that the firm will take advantage of interest payments allowable for tax purpose to bring down its tax bill. Thus, firms that make use of other types of tax shields, like depreciation expense, will have less need to utilize the debt tax shield. Downs (1993) also posits that the motivation to fund with debt reduces as non-debt tax shields rise. In other words, debt becomes over-shadowed.

According to DeAngelo & Masulis (1980) the extra savings derived from an additional unit of debt declines as non-debt tax shields rises. They attribute this to the increased possibility of bankruptcy that could happen at higher levels of debt. Prasad et al,(2001) explain further that the marginal tax shield value for low debt levels is positive, mainly because it can be exploited to minimize the firm's total tax liability, while at higher debt levels, the marginal value of debt is negative.

The positive relationship argument does indicate that firms with large non-debt tax shields always have tangible assets which can be used to secure debt (Moore, 1986), (Prasad et al,2001).

2.2.5 Growth Opportunities

For firm's that have high growth opportunities, most hypothetical studies suggest that these growth opportunities have an inverse relationship with leverage. Sheikh & Wang (2011) writes that the trade-off theory explains this negative relationship by showing that firms with future growth opportunities, which also represents some form of intangible assets, have a propensity to borrow less than firms having more tangible assets due to the fact that growth opportunities cannot be collateralized.

Sheikh & Wang (2011) also write that the agency theories also show a negative relationship between growth opportunities and leverage because firms with greater opportunities have the flexibility to involve in asset substitution and move wealth away from debt holders to stockholders

Green et al. (2001) on the other hand, explains that one reason why a negative relationship between growth opportunities and leverage is always expected is because most studies rarely differentiate between long-term debt and short-term debt. Green et al. (2001) write further that the issue of conflict of interest for a firm with growing opportunities can be resolved if the firm issues short-term debt, thus suggesting a positive relationship.

Overall, most authors have supported a negative relation, with Berens & Cuny (1995) suggesting that growth implies influential equity financing and low debt.

2.2.6 Liquidity

Liquidity ratios have been considered to have both positive and negative effects on a firm's leverage. Therefore the trade-off theory predicts a negative relationship between liquidity and debt ratio. The firm with huge volume of liquid will rather

finance its investments internally than borrow to finance new investments, in other words, this theory explains that the more liquid assets a firm has, the more it would use the assets to finance its future opportunities for investment.

Sheikh & Wang (2011) also explain that asset liquidity poses different obscure signals to investors, as some investors may regard a high liquidity ratio as a negative sign for a firm because it shows that the firm lacks the ability to make long-term investment decisions, on the other hand, other investors could consider a high liquidity ratio as a encouraging sign from a firm, as it shows that the firm can meet its contractual responsibilities, and thus is highly incapable of default.

2.2.7 Firm Risk

Following theoretical studies, it has been posited that the higher the risk a firm faces, the higher its debt level. According to DeAngelo & Masulis (1980), this is due to the fact that the possibility of bankruptcy for the firm increases by an extra unit of debt .They also suggests that for such a firm with variability or volatility in its earnings, the cost of debt will be driven up as investors are unable to calculate the potential earnings derived from publicly provided information and as such will consider the firm as one that is defective and thus demand a premium to lend to it.

Other writers like Frank & Goyal (2003) see the firm risk as a good proxy for variables that are related to costs of bankruptcy, and explain that it is the risk that a firm will not have enough cash flow to meet its operating expenses. and argue that a firm's optimal debt ratio is a falling function of its earnings volatility, thus if the firm's earnings level is normally distributed, thus making leverage unattractive and resulting in the optimal level of leverage decreasing.

Just a few studies favor a positive relationship between firm risk and leverage, with majority focusing on short-term debt, worthy of mention is the study by Klock & Thies (1992), which suggested that since firms with high business risk are restrained in the extent to which they can secure long-term loan, they therefore have to make up for any inadequacy using short-term debt.

2.3 Capital Structure and Corporate Performance

The issue concerning the relationship between capital structure and corporate or firm performance is an issue that has been considered as very important to both academics and experts in the business world (Tze San and Boon Heng, 2011). While there is a dearth of statistical evidence about the impact of capital structure on corporate performance in advanced and developing economies, majority of the past research on capital structure have always been from the determinants of corporate leverage.

The capital structure has always been considered as one of the major components that could have an impact on corporate performance. In explaining what the concept of performance entails, Tian & Zeitun (2007) write that the concept is a disputatious one in finance mainly because of its multi-dimensional meanings. They also describe performance measures as measures that include either financial or organizational or operational. To Tian & Zeitun (2007), financial performance measures like maximization of profit, maximizing the profit on assets, as well as maximizing the benefits that accrue to shareholders are at the centre of measure of effectiveness of the firm, while Hoffer & Sandberg (1987) write that measures like the growth in sales and market share were operational performance measures that give a wide explanation of performance as they emphasize the variables that eventually lead to financial performance.

According to Tze San and Boon Heng, (2011), the use of financial measurement helps to indicate a firm's financial strengths, weaknesses, opportunities and threats, and they listed the return on investment (ROI), residual income (RI), dividend yield, earning per share (EPS), price earnings ratio, growth in sales, etc as tools that help in this measurement. Tian and Zeitun (2007), on the other hand, list the return on assets (ROA) and return on equity (ROE) as the most popular proxies for performance measurement.

In their work on the relationship between capital structure and corporate performance, Harris and Raviv (1991) argued that there is a suitable capital structure for firms, and that going beyond this capital structure could create increases in the costs of bankruptcy which would exceed the extra tax-sheltering advantages connected with an increasing substitution of debt for equity. Therefore, most firms are ready to maximize their performance and reduce their cost of financing by balancing the debt and equity mix. Harris and Raviv (1991) also argued that underrating the joint interest of both managers and shareholders as well as the bankruptcy costs of liquidation and reorganization had a tendency to make firms have additional debt in their capital structure thus affecting the firm's performance.

Different studies have been carried out to examine the impact which a firm's debt level can have on corporate performance. Abor (2005) carried out a study to examine the influence which capital structure had on the profitability of quoted companies on the stock exchange of Ghana over a five-year period and discovered that there exists a significant positive relationship between short-term debt to assets (SDA) and Return on equity (ROE). This suggests that most firms in the country that earned high profits also use more short-term debt to finance the running of the firm. The

study however showed a negative relationship between long-term debt to asset (LDA) and return to equity (ROE). The overall result of the study showed a positive relationship between debt to asset (DA) and ROE, which shows the relationship between total debt (TD) and profitability, thus indicating that firms that earn high profits also depend on debt as a major funding option (Tze San and Boon Heng, 2011).

Another research by Gleason et al. (2000) on the interrelationship between culture, capital structure and performance based on data collated from 14 European Retailers, showed that there exists a significant negative relationship between the capital structure of these retailers and their return on assets (ROA), growth in sales (Gsales), and pre-tax income (Ptax). The study also showed that while capital structure varied by the cultural classification of retailers, the performance of these retailers was in no way dependent on cultural influence. Overall, the study showed that high leverage levels in a firm's capital structure had the tendency to reduce corporate performance.

A firm's debt maturity structure is also believed to have an impact on its performance, as it has the potential of influencing the firm's investing options. A study by Barclay & Smith (1995) to evaluate the maturity structure of corporate debt showed that large firms and firms with growth rates that are low would rather issue long-term debt than issue short-term debt; a related study also found that firms that were large and had less risk used more long-term debt in their financing. Schianterelli and Sembenelli (1999) also showed that there was a positive relationship between a firm's medium term performance and its initial debt maturity when they studied the impacts of debt maturity structure on firm profitability in the United Kingdom and Italy.

While corporate performance is believed to be affected by choice of capital structure as well as the debt maturity structure which a firm has, other factors are anticipated to have an influence on corporate performance; these factors include firm size, growth, risk, as well as some economic factors that are specific to a country. Of all these factors, the impact of the firm size on performance of the firm has gained the most attention in studies of the firm.

Majumdar (1997) in explaining the superiority in terms of performance which large firms had over small ones, writes that size of firms is correlated with market power and since external constraints to growth normally develop from rising competition and market saturation, therefore the large firms are the ones that would be better suited with the external environment.

Studies on the relationship between firm size and firm performance are normally divided into theoretical and empirical studies. The theories are divided into institutional (environment); technological and organizational theories.

The institutional theories as discussed by Kumar et al. (2001) show that firm size is related to environmental factors like the legal system, the market environment, political stability and a host of other factors. Therefore, firm performance will be affected by the environment structure fit of an economic system. This is seen in countries with sound legal regimes which allow firms that are capital intensive to become bigger and is also exemplified in countries with stronger patent protection where R&D intensive industries have very large firms.

The technological theories relate a firm's size to the economies of scale and the firm's scope of physical capital. Kumar et al. (2001) explain that a firm's increasing economies of scale reduces its cost of production, thus impacting the return on capital and also have an effect on the performance of the firm. They explain further that the falling production costs will also improve the firm's efficiency, thus pushing profits of the firm up.

The organizational theories uses various theories like the transaction cost theory, the agency cost theory, span of control, critical resources theory and competency theories of the firm. Most of these theories emphasize the importance of the resources that give the firm control and allow it to earn more that its adequate return. The critical resources theory for example stress the capacity to maintain and control a major resource that allow the firm to remain competitive as well as profitable, while the competency theories stress the importance of certain competencies that helps a firm earn above its opportunity cost. Niman (2002) writes that the implication of these theories is the emphasis on the secret and competencies which have to be guarded from the competitors.

2.4 Capital Structure in Nigeria

There are just a few studies that have examined the nature of capital structure of Nigerian firms, although the capital structure has had a lot of interest in advanced countries , it has received less attention in developing ones .

Studies on capital structure in Nigeria show that the research on capital structure issues in the country only started with the move towards a free market, combined with the broadening of different financial markets which has allowed firms in the

corporate sector to determine their optimal capital structure (Agboola & Salawu, 2008).

Most empirical literatures on capital structure in Nigeria have also focused on the banking industry while only a few have focused on non-financial institutions. Salawu (2006), in a study on the Nigerian banking industry tried to evaluate the major factors responsible for the appropriate balance of equity and debt as well as the factors that determine the capital structure. Results from the same study by Salawu (2006) showed that major factors that determine capital structure in the Nigerian banking industry included ownership structure and proper management control, growth and future opportunity, profitability, issuing cost and tax issues that are related to debt.

Another study by Agboola & Salawu (2008) also carried out a study on the determinants of capital structure of large non-financial listed firms in Nigeria and found that profitability has a positive relationship with debt of large firms in Nigeria, and also that the large and profitable firms prefer debt because of the tax saving advantage. The results of the study also show that the large firms prefer short-term debt to long-term debt financing and also that relationship between tangibility and long-term debt ratios was significantly positive, thus showing the importance of collateral in the issue of debt finance. Size of the firm also showed a statistically significant and positive relationship with total debt and short-term debt.

Akintoye (2008) in a research on the sensitivity of performance to capital structure in selected Food and Beverage companies in Nigeria used performance indicators like the EBIT (earnings before interest and tax), EPS (earnings per share) and DPS (Dividend per share) and the level of turnover as a performance measure of capital

structure of these companies. Results from the research showed that for most of the companies analyzed, their EBIT, EPS and DPS were sensitive to capital structure, in other words, an increase in turnover reflected a corresponding increase in EBIT, EPS and DPS and vice versa.

An interesting paper on capital structure was that by Ezeoha & Okafor (2009) which evaluated how local ownership of firms influenced capital structure decisions in Nigeria. Results from the paper showed that the discrimination between domestic and foreign firms played a big role in determining level of financial leverage in Nigeria, it also showed that local firms in the country had more total debts than foreign firms, while the foreign firms which were more diversified were considered as larger in size, more profitable and relied more on long-term financing. Overall, this paper showed that the inadequacy in access to the capital market in Nigeria was a major reason why most domestic firms relied on more short-term debts and internal capital and thus, these firms capital decision structures conform to theories that support short-term financing systems.

Finally, David & Olorunfemi (2010) examined the relationship between capital structure and corporate performance in the Nigerian petroleum industry. The study used the earnings per share (EPS) and dividend per share (DPS) as performance indicators, and results showed that the relationship between the EPS and the leverage ratio was positive implying that an increase in leverage ratio would lead to an increase in EPS, the paper also showed that there exists a positive relationship between the DPS and the leverage ratio, thus showing that debt has a huge impacts on performance in the Nigerian petroleum industry.

While there is limited work done specific to Nigeria in relation to capital structure theories and determinants, this study aims to contribute beyond previous research on capital structure theories and determinants in Nigeria on two counts. Firstly, it distinguishes itself with the introduction of key variables that have not been studied previously in papers related specifically to non-financial firms such as liquidity and age of the firms. Secondly, the study utilizes three different definitions of leverage and employs the most recent data in its analysis.

In summary, this review has looked at some theories of capital structure like the M&M value irrelevance propositions, the trade-off theory, the pecking order theory and agency theories. The review also assessed the determinants of capital structure as well as the relationship between capital structure and corporate performance. A review of past studies of capital structure in Nigeria was also undertaken.

Chapter 3

RESEARCH METHODOLOGY

3.1 Methodology

The preceding chapter presented a literature review on different theories of capital structure, the determinants of capital structure and their relationship to the different theories. The literature review chapter has also assessed past studies of capital structure in Nigeria as well as the relationship between capital structure and corporate performance.

This chapter will outline the methodology used in the research as well as define the samples, variables, hypotheses and model used. The instruments used in the study will also be explained and their applications discussed. From this a concise description of the techniques utilized and illustrated in the research will be provided.

3.2 Research Design

The research design is a plan that guides the researcher in the process of collecting, analyzing, and interpreting observations. It is a logical model of proof that allows the researcher to draw inferences concerning causal relations among the variables under investigation (Nachmias & Nachmias, 1992). Yin (2003) sees the research design as the logical sequence that connects the empirical data to a study's initial research question and ultimately, to its conclusions.

This research uses a longitudinal approach in its time dimensions as it examines features of various non-financial corporate firms at more than one time. The panel study is employed in this research as a type of longitudinal approach and is referred to as a powerful type of study in which the researcher observes exactly the same people, group or organization across multiple time points (Neuman, 2007). Neuman also explains that the results derived from a well-designed panel study are very valuable. Green et al. (2001) write that a lot of emphasis has been placed on panel data studies in the last 15 years, and these studies have involved the tracking over time of the same companies, typically for between 5-10 years. Green et al. (2001) also write that an advantage of the panel data studies is that they offer a larger group of observations, and the time dimension allows for easier testing of a wider range of hypotheses than is possible with a year's cross-section.

The use of a panel study is supported by a quantitative approach. The choice of the quantitative technique was informed by the need to obtain precise and direct answers to the key issues being investigated in the research exercise. Although there are arguments against this type of research design, commenting on the strengths of a quantitative research design, Shuttleworth (2008) noted that quantitative research design is an excellent way of finalizing results and proving or disproving a hypothesis and that it enables the researcher to arrive at a comprehensive answer where the results can thus be legitimately discussed. Shuttleworth (2008) further explained that this type of research design also helps in filtering out external factors and the results of a well-designed quantitative analysis are generally accepted as real and unbiased.

3.3 Data Source

The sample used in this study was drawn from a list of non-financial corporations in Nigeria. The sample excluded financial institutions because financial institutions are regulated differently especially with regards to their capital adequacy requirement. The data used in this research was extracted from the financial statements of these non-financial corporations during the years under review, 2006 -2010. The data is collected from the Nigerian Stock Exchange's facts finding book.

3.4 Participants and Sample Design

The target populations of the study were five industries in the non-financial sector in Nigeria. In total, 20 firms operating in these industries were selected randomly from the population of industries. Random Sampling is defined as "a sampling technique where a group of subjects (a sample) are selected from a larger group (a population). Each individual is chosen entirely by chance and each member of the population has a known, but possibly non-equal, chance of being included in the sample" (Easton and McColl, 1997). By using random sampling, the possibility of bias is reduced to some extent.

The firms selected in this research are firms that are listed on the Nigerian Stock exchange. They include firms taken from the Consumer goods, Household goods, Industrial goods, Petroleum and Petroleum products and Healthcare Industries. These firms were chosen due to the availability of their published financial statements during the period 2006 – 2010.

3.5 Variables

The study involves two research questions namely- to find the determinants of capital structure in non-financial firms in Nigeria as well as to assess the relationship

between capital structure and corporate performance in these firms. Therefore, variables will be used to answer both research questions.

3.5.1 Variables for Research Question 1

The dependent variables are the debt ratios – Total debt (TD), Short-term debt (STD) and the Long-term debt (LTD). The explanatory variables used for the study include Profitability, Liquidity, Age, Tangibility, Firm Size, Non-debt Tax Shield and Growth. It should be noted that all variables used in this research are measured using book values due to the fact that the data employed in this study come from financial statements.

The variables are defined as follows:

TD_{it} is the ratio of total debt (TD) to total assets (TA).

STD_{it} is the short-term debt (STD) to total debt (TD). STD includes all types of debt that mature in less than one year.

LTD_{it} is the long-term debt (LTD) to total debt (TD). LTD includes all types of debt that mature beyond one year.

Profitability ($PROF_{it}$) is the ratio of operating profit (EBIT) to total assets (TA).

Growth opportunities ($GROW_{it}$) is the ratio of sales growth to total assets growth.

Size ($SIZE_{it}$) is the natural logarithm of total assets i.e. size = Ln. (TA).

Age (AGE_{it}) is the number of years and is calculated as the present year (2010) minus the year of inception.

Tangibility ($TANG_{it}$) is the ratio of fixed assets to TA, or it is the percentage of TA that is fixed.

Liquidity (LIQ_{it}) is the ratio of current assets to current liabilities.

Non-debt Tax Shield ($NDTS_{it}$) is the ratio of depreciation expense to TA.

3.5.2 Variables for Research Question 2

This research uses proxies for both capital structure and corporate performance. This is shown in the box below:

Variables & Proxies for relationship between Capital structure and Corporate Performance

Variables	Proxies	
Capital Structure (Independent Variables)	Long-term Debt to Capital	LDC
	Debt to Capital	DC
	Debt to Asset	DA
	Debt to Common Equity	DCE
	Long-term Debt to Equity	LDCE
Corporate Performance (Dependent Variables)	Return on Capital	ROC
	Return on Equity	ROE
	Return on Asset	ROA
	Earnings Per Share	EPS
	Net Margin	NM

Source: Table for Variables & Proxies is derived from Heng & Tze San (2011)

Variables are defined as follows:

LDC is the ratio of long-term debt to capital (equity plus preferred shares).

DC is the ratio of total debt to capital.

DA is the ratio of total debt to total assets.

DCE is the ratio of total debt to equity

LDCE is the ratio of long-term debt to equity

ROC is the ratio of profit after tax to total capital

ROE is the ratio of profit after tax to equity capital

ROA is the ratio of EBIT to total assets

EPS is the ratio of profit after tax to equity

NM is arrived at after all operating expenses including interest and depreciation has been deducted from income.

3.6 Model

This model is created to assess the determinants of capital structure in Nigeria. The model's general form is written as:

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it} \quad (1)$$

The above shows the general form of the Ordinary Least Square regression, with the subscript i denoting the cross-sectional dimension and t representing the time-series dimension. The variable on the left- $Y_{it,}$ represents the dependent variable in the model-which in this case is the firm's debt ratio, while X_{it} in the model represents the explanatory variables, α is the constant, and β stands for the coefficients. μ_{it} represents a random term and $\mu_{it} = \mu_i + \nu_{it}$; where μ_i is the firm specific effects and ν_{it} is a random term. The regression model has been modified for this analysis and thus takes the following form:

$$TD_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 GROW_{it} + \beta_3 SIZE_{it} + \beta_4 AGE + \beta_5 TANG_{it} + \beta_6 LIQ_{it} + \beta_7 NDTS_{it} + \mu_{it} \quad (2)$$

$$STD_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 GROW_{it} + \beta_3 SIZE_{it} + \beta_4 AGE + \beta_5 TANG_{it} + \beta_6 LIQ_{it} + \beta_7 NDTS_{it} + \mu_{it} \quad (3)$$

$$LTD_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 GROW_{it} + \beta_3 SIZE_{it} + \beta_4 AGE + \beta_5 TANG_{it} + \beta_6 LIQ_{it} + \beta_7 NDTS_{it} + \mu_{it} \quad (4)$$

3.7 Hypothesis

The under listed sets of hypotheses are created to answer research question one.

3.7.1 Hypothesis for Research Question 1

Ho: There exists relationship between profit and short-term debt (STD), long-term debt (LTD).

Ho: There exists relationship between growth (GROW) and LTD, STD.

Ho: There exists negative relationship between SIZE and STD, and relationship between SIZE and LTD and TD.

Ho: There exists relationship between AGE and STD, LTD.

Ho: There exists relationship between TAN and STD, and relationship between TAN and LTD and TD.

Ho: There exists relationship between LIQ and STD, LTD.

Ho: There exists relationship between NDTS and STD, LTD

3.7.2 Research Question 2

The investigation will also be carried out in an attempt to find answers to research question two. To achieve this, statistical test will be conducted to find answers to the following questions:

Is there a relationship between ROC and the independent variables?

Is there a relationship between ROE and the independent variables?

Is there a relationship between ROA and the independent variables?

Is there a relationship between OM and the independent variables?

Is there a relationship between NM and the independent variables?

3.8 Data Analysis/Technique

The research employs the use of Ordinary Least Squares (OLS) regression to determine whether there exist a relationship between the debt ratios and the various determinants that are listed above. It was also used to test the effect of these

explanatory variables on the debt ratios. For a test of multi-collinearity amongst the explanatory variables, the Pearson correlation matrix will be employed.

To analyze the data gotten from the financial statements, the research uses the SPSS software to generate descriptive statistics as well as other tests necessary to aid with the findings. The results from the analysis juxtaposed with existing literature on the subject matter to determine if the findings were congruent or significantly dissimilar with the views of experts in the field of capital structure. Conclusions as well as recommendations will be made based on the findings from the research.

Chapter 4

CAPITAL STRUCTURE IN NIGERIA: EMPERICAL RESULTS

The last chapter presented the methodology, variables as well as hypotheses to be used in assessing the determinants of capital structure and the relationship between capital structure and corporate performance in the Nigerian non-financial sector.

This chapter presents the findings of the data used for the study. Hypothesis testing through statistical methods would help in ascertaining the factors which play an important role in ascertaining the capital structure as well as the impact of capital structure on corporate performance in various non-financial industries in Nigeria. In addition, the chapter presents a descriptive summary of the statistics used and a summary of the correlation and regression analysis carried out on data derived from various firms studied.

4.1 Descriptive Statistics

This section presents a summary statistics of the dependent and explanatory variables over the sample period, reflecting the capital structure of the analyzed firms. Table 1, as shown below, presents the summary of the descriptive statistics of some important variables assessed in the study. The mean long-term leverage of the sample firms is 0.2008. This suggests that long-term leverage represents about 20.08 percent of the capital of non-financial firms in Nigeria. Short-term debt represents about 79.9

percent of total assets, denoting the relevance of short-term debt over long-term debt in financing these firms in Nigeria.

Table 1. Descriptive Summary Statistics

	N	Min	Max	Mean	Std. Dev
TOTAL DEBT	100	.282	2.067	.642	.267
SHORT TERM DEBT	100	.245	.980	.799	.135
LONG TERM DEBT	100	.019	.754	.200	.135
PROFITABILITY	100	-.512	.611	.140	.143
TANGIBILITY	100	.018	.850	.369	.179
AGE	100	1	86	40.95	15.201
SIZE	100	12.68	18.85	16.535	1.426
GROWTH	100	-21.713	37.572	1.532	6.288
LIQUIDITY	100	.171	3.483	1.368	.669
NON-DEBT TAX SHIELD	100	.003	.114	.037	.021
Valid N (listwise)	100				

This is consistent with empirical evidence from the study of Hall et al. (2004) which indicates that in countries such as Belgium, Germany, Spain, Ireland, Italy, the Netherlands, Portugal and the UK, short-term debt is about three times more than long-term debt (Abor, 2008). This is also consistent with the result from the study of Abor & Biekpe (2009) which showed that short-term debt was considered more important than long-term debt in financing Ghanaian SMEs. Short-term debt in Abor & Biekpe (2009) study represented about 36.26 percent of total assets while long-term debt represented about 5.74 percent.

It is also consistent with the result from Mouamer (2011) which showed that short-term debt in the financing decision of Palestine- listed companies stood at 73 percent of debt while long-term debt ratio was 27 percent of total debt. The above

suggests/highlights the importance of short-term debt in the financing decisions of both developed and developing economies.

Mean total debt of 64.22 percent signifies that the total assets of the firms are financed by 64 percent debt capital and 36 percent equity. The debt ratio of 64 percent, when compared with ratio of firms in G-7 and developing countries as seen in Table 2, shows that Nigerian non-financial firms seem to be have a higher debt ratio d compared with those in Canada, the UK, the USA, Brazil, Jordan, Malaysia, Mexico, Thailand, Turkey & Zimbabwe and less leveraged when compared with firms in France, Germany, Italy, Japan, India and Southern Korea. This comparison shows that on average Nigeria's non-financial firms show related financing behavior as observed for firms in developing and G7 countries.

Table 1 also indicates that average age is approximately 41 years. Asset structure has a mean of 0.3694 highlighting that on average, fixed assets account for 36.94 percent of total assets. In terms of profitability, the average return on assets over the period amounts to 14.30 percent. The average growth rate is 153.2 percent, which shows a very positive growth. Maximum growth opportunities are 37.5 percent. Non-debt tax shield on debt financing constitutes only about 3.76 percent of debt ratio.

Table 2. Debt ratios

Country	No. of firms	Time period	Total debt ratio (%)
Developing Countries data			
Brazil	49	1985-1991	30.3
India	99	1980-1990	67.1
Jordan	38	1983-1990	47.0
Malaysia	96	1983-1990	41.8
Mexico	99	1984-1990	34.7
South Korea	93	1980-1990	73.4
Thailand	64	1983-1990	49.4
Turkey	45	1983-1990	59.1
Zimbabwe	48	1980-1988	41.5
G-7 countries data			
Canada	318	1991	56.0
France	225	1991	71.0
Germany	191	1991	73.0
Italy	118	1991	70.0
Japan	514	1991	69.0
UK	608	1991	54.0
USA	2580	1991	58.0

Source: Data of debt ratios of firms in developing countries and G-7 countries are taken from Sheikh & Wang (2011).

4.2 Correlation Analysis

In order to examine the possible degree of multi-collinearity among the regressors, a correlation matrix of the variables is included in Table 3. Total debt ratio is significantly and positively correlated with short-term debt, but has a significant and negative correlation with profitability and liquidity. Short-term debt ratio is

significantly and negatively correlated with tangibility and liquidity, while long-term debt ratio is significantly and positively correlated with tangibility and liquidity.

The results show significantly negative correlation between profitability and age and a significantly positive correlation between profitability and liquidity. Tangibility is significantly and negatively correlated with liquidity, but has significantly positive correlations with non-debt tax shield. Liquidity and non-debt tax shield are significantly and negatively correlated.

Table 3. Pearson correlation Coefficient matrix

	TD	**STD**	**LTD**	**PROF**	**TANG**	**AGE**	**SIZE**	**GROW**	**LIQ**	**NDTS**
TD	1	.254*	-.25*	-.40**	.064	-.057	-.09	.064	-.65**	.120
STD	.25*	1	-1.00**	-.06	-.33**	-.189	-.07	.022	-.35**	-.13
LTD	-.25*	-1.00**	1	.067	.33**	.189	.07	-.02	.350**	.13
PROF.	-.40**	-.066	.067	1	-.085	-.219*	.15	.11	.23*	-.13
TANG.	.06	-.33**	.33**	-.09	1	.057	.12	.06	-.42**	.28**
AGE	-.06	-.19	.19	-.22*	.057	1	.005	.17	.024	-.02
SIZE	-.09	-.07	.07	.15	.12	.005	1	-.05	-.147	.082
GROW	.064	.022	-.02	.11	.06	.174	-.05	1	-.041	-.14
LIQ	-.66**	-.35**	.35**	.23*	-.42**	.024	-.15	-.04	1	-.23*
NDTS	.12	-.13	.13	-.14	.29**	-.018	.08	-.14	-.23*	1

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

The magnitude of the correlation coefficients shows that multi-collinearity is not a potential problem in the regression model. This is further shown in the tolerance and VIF columns in tables 4, 5, 6. The results show that tolerance for the model exceeds

0.01, while the VIF is less than 5. Thus, correlation in the study is not indicative of multi-collinearity.

4.3 Regression Results

Overall, the results derived from this study show signs that are consistent with theoretical predictions. The regressions proved to be statistically significant at 0.05 percent for each of the leverage ratios used in the models. The regression results also indicate that the effects of some of the parameters were quite marginal. The results as shown in Tables 4, 5 and 6 indicate that 57.7 percent of the total debt criterion variable was accounted for by the model alone, while 44.4 percent and 44.3 percent of short-term and long-term debt variables were accounted for by the models respectively.

Table 4. Regression Model for TD.

Variable	**Coefficient**	**Significance**	**t-value**	**Tolerance**	**VIF**
Profitability	-.28	.000	-3.71	.83	1.21
Tangibility	-.24	.002	-3.14	.78	1.29
Age	-.10	.16	-1.44	.89	1.12
Size	-.12	.10	-1.64	.93	1.08
Growth	.09	.20	1.29	.91	1.10
Liquidity	-.70	.00	-8.83	.75	1.34
Non-debt tax shield	.01	.91	.120	.87	1.15

R^2= .577; Adjusted R^2 = .545; F statistics = 17.950; Standard Error of Estimate = .1805

Table 5. Regression Model for STD

Variable	**Coefficient**	**Significance**	**t-value**	**Tolerance**	**VIF**
Profitability	-.02	.87	-.17	.83	1.21

Tangibility	-.54	.00	-6.13	.78	1.29
Age	-.16	.063	-1.88	.89	1.12
Size	-.08	.35	-.94	.93	1.08
Growth	.44	.66	.44	.91	1.20
Liquidity	-.61	.00	-6.73	.75	1.34
Non-debt tax shield	-.11	.18	-1.34	.87	1.15

R^2= .443; Adjusted R^2 = .401; F statistics = 10.474; Standard Error of Estimate = .1048

Table 6. Regression Model for LTD

Variable	**Coefficient**	**Significance**	**t-value**	**Tolerance**	**VIF**
Profitability	.015	.86	.17	.83	1.21
Tangibility	.54	.00	6.12	.78	1.29
Age	.16	.06	1.88	.89	1.12
Size	.08	.35	.94	.93	1.08
Growth	-.04	.66	-.44	.91	1.10
Liquidity	.61	.00	6.73	.75	1.34
Non-debt tax shield	.11	.18	1.34	.87	1.15

R^2= .444; Adjusted R^2 = .401; F statistics = 10.476; Standard Error of Estimate = .1048

The results of the research give credence to the hypothesis of a negative relationship between short-term debt ratio and profitability, but contradict the positive relationship between long-term debt ratio and profitability. This also supports asymmetric information for the pecking order hypothesis.

The positive relationship which lacks significance points to the fact that the market will only offer funds to those firms that are profitable. Overall, the study shows a

significantly negative relationship between total debt and profitability, and this corroborates the hypothesis that firms that are less profitable have a higher tendency to demand for external debt financing than more profitable ones.

Growth opportunities remained highly insignificant under all models tested. The growth opportunities variable (G) correlated negatively with the ratio of long-term debt and positively with the short-term debt ratio. This is in agreement with the hypotheses stated earlier. This finding is supported by Michaelas et al. (1999) who argued that future opportunities will be directly related to debt ratio, in particular short-term debt (Abor,2008). Michaelas et al. (1999) also suggest that the agency problem and eventually the cost of funding are reduced if the firm issues short-term debt rather than long-term debt (Abor, 2005). Hall et al. (2004) also supports this view by asserting that growth is likely to place huge demands on a firm's internally generated funds and drive the firm into borrowing (Abor, 2008).

A study by Deesomsak et al. (2004) also suggested that there is a negative relationship between growth and leverage, and their study also gave support to the prediction of the agency theory that high growth firms have a tendency to use less debt since they would not want to expose themselves to possible restrictions that are brought on by lenders (Mouamer, 2011).

Adding to the above, tables IV, V and VI show a positive correlation between the size of a firm and the ratio of long-term debt and negative correlation with both short-term debt and total debt (Abdullah, 2005). This agrees with the hypothesis for this study, but is contrasted by the negative relationship between size and total debt. The finding is also consistent with the trade-off and agency theories, thus showing

that larger firms have a tendency to have a better borrowing capacity when compared to smaller firms (Mouamer, 2011). Titman and Wessels (1988), on the other hand, support a negative relationship between short-term debt and firm size. The authors explain that small firms tend to use more short-term finance than larger firms, due to the fact that smaller firms have higher transaction costs when they issue long-term debt or equity.

In addition, the regression tables show a negative relationship between short-term debt and age and positive relation between long-term debt and age. This study's hypothesis supports the relationship with short-term debt and is in contrast with the relationship with long-term debt. Hall et al (2004) explained that age is positively related to long-term debt (LTD) but negatively relatively to short-term debt (STD) (Abor, 2008). The argument put forward here is that from the life cycle perspective, over time, a firm confirms itself as a going concern and thus, it increases its ability to borrow more debt. Banks on the other hand, tend to evaluate a firm's creditworthiness based on the firm's reputation, which is seen as the good name a firm had built over the years, and is seen in the firm's capacity to meet its contractual obligations as at when due.

With respect to tangibility, the results indicate signs as hypothesized. There exist a significant and positive relationship between tangibility and long-term debt. The results also show a positive but not significant relationship with total debt and a significantly negative relationship with short-term debt. Abdullah (2005) explains that a proportion of tangible assets are related to availability of collateral, which tends to reduce the agency costs of debt (Mouamer 2011). Abdullah (2005) explains further that, since most small firms are considered risky ventures, they are often

expected to provide more tangible collateral when applying for debt financing that could be long term (Abor, 2005). This also leads banks and providers of long-term debt financing to request for tangible collateral rather than just depend on accounting data.

The statistically significant negative relationship between tangibility and short term debt is seen in the fact that the agency costs of managers using up more than the optimal level of perquisites increases for firms that have low levels of assets that can be used as collateral (Prasad et al, 2001). Therefore, shareholders in these firms would prefer high gearing levels.

Table V also shows that there is a negative and significant relationship between liquidity (LQ) and ratio of short-term debt (STD). This finding supports the hypothesis in this study and explains that the more liquid a firm is, the less the firm resorts to borrowing (Abdullah, 2005). This result also shows that firms with higher liquidity use that liquidity to pay off short-term loans,(Mouamer, 2011). Deesomsak et al. (2004) also showed that the significant and negative relationship between leverage and liquidity supports the pecking order theory. This explains that a firm with greater liquidities would prefer to use internally generated funds while financing new investments. Table V also shows a significant and positive relationship between long-term debt and liquidity. This supports the trade-off theory that asserts that firms with higher liquidity ratios should borrow more due to their capacity to meet contractual obligations when it is due.

Non-debt tax shield in this study is seen to have a positive relationship with long-term debt and a negative relationship with short-term debt. The positive relationship

is supported by Moore (1986) and Prasad et al, (2001) who explain that companies with a huge level of non-debt tax shields invariably have considerable collateral assets which can be used in securing debt.

The negative relationship between non-debt tax shield and leverage is viewed as occurring when the incentive to finance with debt diminishes as non-debt tax shield increases. In other words, debt is crowded out (Downs, 1993). Both relationships for non-debt tax shields are insignificant in the model.

4.4 Regression Result for relationship between Capital Structure and Corporate Performance

Results for the regression analysis to show the relationship between capital structure and corporate performance is shown in table 7. The table shows that the models used accounted for a small portion of the criterion variables, with the exception of the Return on Capital (ROC) criterion, which had about 68.7 percent accounted for by the model. Return on Assets (ROA) had 23 percent accounted for by the model while Return on Equity (ROE), Operating Margin (OM) and Net Margin (NM), had 17.5, 37.2 and 16.7 percent accounted for by their models respectively.

Table 7. Pearson correlation Coefficient matrix

	LDC	**DC**	**DA**	**DCE**	**LDCE**	**ROA**	**ROE**	**OM**	**ROC**	**NM**
LDC	1	.63**	.19	.13	.37**	.05	.33**	.05	.69**	.01
DC	.63**	1	.39**	.36**	.23*	-01	.25*	-.19*	.63**	-.08
DA	.19	.39**	1	.33**	.24*	.35**	.05	-.56**	.48**	.24*
DCE	.13	.36**	.33**	1	.84**	-.17	-.17	-.32**	.01	-.21*
LDCE	.37**	.23*	24*	.84**	1	-.13	-.12	-.22*	.14	-.17
ROA	.05	-.01	.35**	-.17	-.13	1	.47**	.26**	.61**	.93**
ROE	.33**	.25*	.05	-.17	-.12	.47**	1	.42**	.51**	.41**

OM	.05	-.19*	-.56**	-.32**	-.22*	.26**	.42**	1	.03	.41**
ROC	.69**	.63**	.48**	.01	.14	.61**	.51**	.03	1	.53**
NM	.01	-.08	.24*	-.21*	-.17	.93**	.41**	.41**	.53**	1

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

The results of the study show that ROA had a significant and positive relationship with debt to Asset ratio (DA). ROA also had a positive relationship with long-term debt to capital (LDC) and had a negative relationship with debt to capital (DC), debt to common equity (DCE) and long-term debt to common equity (LDCE). The positive relationship between ROA and DA/ LDC implies that an increase in the debt position is associated with an increase in profitability. This also suggests that profitable firms depend on more on debt as their main financing option, and supports the findings of Petersen & Rajan (1994), who identified a positive association between measures of profitability against debt ratio.

The negative relationship between ROA and DC, DCE and LDCE suggests that firms in the study are averse to using more equity because of the fear of losing control. Thus, they employ more debt in their capital structure than would be appropriate (Joshua Abor, 2007). Joshua Abor (2007) further writes that one reason for increasing debt usage may be to avoid agency conflicts. According to Joshua Abor (2007), employing debt excessively is likely to result in high level of bankruptcy, which could negative affect performance. With respect to ROE, the table indicates that ROE was significantly and positively related to LDC and DC, and also has a positive relationship with DA. The table also showed a negative relationship with LDCE and DCE.

The significantly positive relationship between ROE and LDC/DC follows the trade-off theory, that more profitable firms have higher income to protect. Therefore, these firms should borrow more to take tax advantages or operate with higher debt ratios (Ebaid, 2009). The negative relationship between ROE and LDCE/DCE also supports the fact that the adoption of a high debt policy or the increase in the proportion of debt in the firm's capital structure is more likely to impact negatively on return on equity (Abor, 2007).

OM had a significant and negative relationship with four of the capital structure ratios-namely; DC, DA, DCE and LDCE. Table 7 also showed a positive relationship between OM and LDC. OM's significantly negative relationship with majority of the capital structure variables implies that an increase in the debt position of firms studied could result in a decrease in these firms' operating margin. This could result from the fact that firms studied have debts that are relatively expensive and therefore employing high proportions of this debt, could lead to low operating margin. This result supports findings by Booth et al. (2001) and Graham (2000).

ROC showed a significant and positive relationship with LDC, DA and DC. ROC equally had a positive relationship between DCE and LDCE. The significant and positive association of ROC with LDC, DA and DC gives support to Hadlock & James' (2002) study, which showed that most firms prefer debt financing mainly because they expect a higher return. To Hadlock & James (2002), debt financing is a huge way to improve the performance of an organization.

Finally, the Table 7 indicates a significant positive and negative relationship between NM and DA and DCE respectively. DC and LDCE had a negative relationship with

NM while the relationship with LDC was positive. The negative relationship between NM and DCE, DC and LDCE, follows the explanation suggested in OM variable. The significantly positive relationship between NM and DA as well as the positive relationship between NM and LDC, also gives support to Abor (2007) study, which showed that Net Margin for South African and Ghanaian firms always increased when the firms employed more long-term debt in their debt ratio.

4.5 Summary

This chapter presented the data used in the study and used data analysis techniques (descriptive, correlation and regression) to summarize the data and test hypothesis. Results from the analysis showed that some of the hypotheses stated were supported while a few of the hypotheses contrasted with the results.

The results showed that total debt was significantly and negatively related to profitability and liquidity, while STD was significantly and negatively related to tangibility and liquidity. LTD had a significant and positive relationship with tangibility and liquidity. Overall, profitability, tangibility and liquidity were the major factors that determine capital structure in the study. This supports pecking order theory.

Chapter 5

DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

This chapter aims to discuss the results of the hypotheses that were tested and give possible implications of this to the Nigerian non-financial firms. The chapter also goes further to present the conclusion of the study which focused on the determinants of capital structure in non-financial firms in Nigeria and its relationship with corporate performance. The data gathered from relevant literature review and statistical analysis will be a basis for the conclusion. Recommendation will be made concerning the need for future researches in the field of capital structure in Nigeria.

5.1 Discussions

This study shows very captivating results in terms of the capital structure of non-financial firms in Nigeria. The study shows that short-term debt makes up a relatively high percentage of debt of the firms studied. This represents 79.9 percent of total financing. This reveals that most Nigerian non-financial firms mostly have access to short-term credit facilities in financing their operations.

Reasons that can be attributed to this would include the fact that the Nigerian long-term debt market is relatively under-developed, and thus most firms have no choice but to rely mainly on short-term credit. Another reason is the fact that accessing long-term loans in Nigerian banks is very cumbersome. In most cases, these long-term loans are rarely given. This is mainly because of the poor business environment

in the country, which does not allow for a continued survival of businesses. This creates a level of skepticism on the part of banks to give out long-term debt to businesses.

The findings on profitability and total debt imply that non-financial firms with large profits would prefer to increase the level of their internal funding. This suggests that those firms that have the capabilities to create funds internally tend to shun external debt funding. The findings also suggest that though, profitable firms may have easier chances and access to debt finance than less profitable ones, most of these non-financial firms in Nigeria may overlook the need to explore this opportunity especially if their retained profit is huge enough to fund new investments.

In terms of the relationship between profitability and long-term debt, it could be explained that profitable firms in the country take up such long-term debt with the view of enjoying the tax advantage of debt financing as well as an increasing need to shield their income from corporate tax. The findings from this study clearly provide support for results of studies by Agboola & Salawu, 2008; Boyle and Eckhold, 1997: Rajan and Zingales, 1995.

Results from the study generally strengthens the fact that most non-financial firms in Nigeria and many countries try to fund their fixed assets with long-term leverage, and their current assets with short-term leverage. This result also supports the findings on previous empirical studies (Hall et al., 2004; Michaelas et al., 1999). The significant positive relationship between tangibility and long-term debt also shows that collateral value or the use of collaterals play a big role in lending to non-

financial firms. The provision of landed properties in choice parts of the country is a regular criterion for granting credit by long-term financiers today in Nigeria.

The positive relationship between age and long-term debt confirms the suggestions of Diamond (1989), who advocated for the use of firm reputation in overcoming the problems associated with the evaluation of credit worthiness. It also supports the suggestions of Petersen & Rajan (1994) who believed that older firms should be firms with higher quality and debt ratio.

In this study of non-financial Nigerian firms, the results indicate that most firms that have existed for a long period in the country, like Unilever, PZ cussons, e.t.c are considered to have good standing with long-term finance providers. This has the effect of boosting their capacity to access more debt capital. This relationship is also reflected in the ways these mature and reputable businesses are given favorable terms and better access to banks' credit facilities when compared to firms that are just springing up.

In support of the hypothesis put forward in this study, the results of the research indicate that size is positively related to long-term debt and negatively related to short-term debt. This finding suggests that most large firms in Nigeria have long-term loan due to their relationship with creditors and their bargaining power over such creditors.

The finding between size and short-term debt can be explained by the idea that small businesses in Nigeria find it burdensome in accessing short-term loans. This is as a

result of the fact that small firms are always considered as higher risk firms and this might be difficult for banks in Nigeria to lend short-term credits to these firms.

In terms of growth opportunities and long-term debt ratio, result from the study supports theoretical prediction that there exists a negative relationship. This study shows that Nigerian non-financial firms with high growth prefer to use equity financing rather than going to banks to seek for leverage. The positive relationship with short-term debt shows that since financing growth opportunities would normally result in some form of moral hazard, or a chance for the managers to get involved in asset substitution, most Nigerian firms in a bid to restrain the conflicts that asset substitution could bring would therefore choose to borrow less, thus supporting the position of Myers (1977).

The relationship between liquidity and short-term debt (which is significant and negative) implies that most non-financial firms in Nigeria with high liquidity always prefer to use such assets as their source of finance to fund future investment opportunities. Therefore, these firms would prefer using their liquid assets or internally generated funds to meet short-term and immediate obligations, as well as to pay off short-term loans rather than use debt financing.

In terms of the relationship between liquidity and long-term debt, it can be explained that some of the non-financial firms with high liquidity could be given more access to banks' long-term loans, due to the fact that these firms show a greater ability to meet contractual obligations. Hence, these high liquid firms face lower risk of default and would therefore be offered long-term loans.

Non-debt tax shield in the study shows a positive relation with leverage. This is explained from the fact that these firms see non-debt tax shield as a form of savings or collateral. Thus, any firm with a huge level of non-debt tax shield is considered as having a large collateral assets base. This can be used to collect and secure debt since collateral is a major requirement in applications for long-term loans in Nigeria. This thus, results in these firms increasing their long-term loans, due to the advantage which non-debt tax shields gives.

The negative relationship with short term debt can be attributed to a category of firms in Nigeria, who in particular have more than one form of tax shield. These firms face a drop in their marginal savings from an additional unit of debt as non-debt tax shield increases. Therefore, the incentive to finance with debt diminishes as these firms' non-debt tax shield increases.

With regards to the relationship between Capital Structure and Corporate Performance, the study showed that there exists a significant and positive relationship between the ratio of debt to asset and Returns on Asset (ROA). This denotes that an increase in the amount of debt spent on acquiring more assets for the firm, has an effect of boosting the returns on assets of the firms. Returns on Equity (ROE) showed a significantly positive relationship between the ratios of long-term debt and debt to capital. This is explained by the fact that the acquisition of debt to finance capital plays a huge role in the returns which accrues to the firm's general equity. With respect to Operating Margin (OM), there exists a significant and negative relationship with ratios of debt to capital, debt to asset, debt to common equity and long-term debt to equity. This indicates that an increase in turnover is diverted to repayment or servicing of debts and this has the effect of reducing the

operating margin of the firm. It therefore shows that the capital structure plays a big role in the operating margins of firms.

Lastly, Net Margin (NM) shows a significant and positive relationship with the ratio of debt to asset and a significant and negative relationship with the ratio of debt to common equity. This indicates that an increase in the amount of debt which is used to finance asset results in an increase in the net income of non-financial firms in Nigeria yearly. An increase in the use of debt rather than internal funds also affects the net margin of these firms as funds would have to be channeled to payment of either short or long term debt that are collected from debt financiers.

5.2 Conclusion

The study examined the determinants of capital structure of non-financial firms in Nigeria and the relationship between capital structure and corporate performance. Based on the literature review and the data obtained from the analysis, the following conclusions are drawn from the study.

Firstly, the significantly negative relationship between profitability and total debt clearly denotes the fact that highly profitable non-financial firms in Nigeria would demand less debt and prefer internal funding over debt financing, due to the fact that the cost of external financing might be expensive for these firms. This result also supports the pecking order theory that highly profitable firms would depend on retained earnings instead of debt financing. The study goes further to show that while these profitable firms might depend on retained earnings, some might still require long-term debt in a bid to protect their income from high corporate taxes.

Secondly, the results show that the short-term debt covers a high portion of the total debt of non-financial firms in Nigeria. This is due mainly to the fact that it is more accessible than the long-term debt in the country.

Thirdly, the significant and positive relationship between tangibility and long-term debt shows the fact that tangibility or the use of collateralized assets plays a big role in the access of these non-financial firms to long-term debt finance. Therefore non-financial firms with very low tangible assets might find it arduous to get long-term loans, because they are incapable of providing the needed collateral. Thus, the use of collateral plays a big role and is a major factor for non-financial firms in getting access to long-term debt capital in Nigeria. The significantly negative relationship between tangibility and short-term debt implies that non-financial firms try to finance their fixed assets with long-term credit, and their current assets with short term credit.

Lastly, the significant negative and positive relationship between liquidity denotes that firms studied would rather use their high liquidity to finance short-term loans and immediate obligations rather than use debt finance to meet these needs. It also implies that the high liquidity of firms sends a message that these firms are capable of meeting contractual responsibility. This passes them off as good candidates for long-term loans.

With respect to capital structure and corporate performance relationships, the results of the study showed that ROA, ROE, OM, ROC and NM, all have relationship with one or more of the capital structure proxies used to assess their relationships.

The results of the study have highlighted the major factors that determine capital structure of non-financial firms in Nigeria. It should be noted that the issue of capital structure is one key financing decision that non-financial firms cannot overlook, therefore they would have to be strategic about these financing decisions.

The results have shown that the major determinants of capital structure based on this study include: profitability, tangibility and liquidity. Age, Size and tangibility are very important factors, which play determining roles in accessing long-term debt finance within the Nigerian context.

5.3 Recommendations

Based on the literature reviewed and the analysis of the findings, the following recommendations are made:

Since accessing long-term debt is very difficult for non-financial firms, especially firms that are just springing up in Nigeria, the government of Nigeria could create avenues and develop initiatives that allow new firms that have little collateral to have access to such long-term debt capital. Management of non-financial firms should also work to arrive and maintain an optimal blend of debt and equity for the firm, since it is at that point that the value of the firm is maximized. Management should also keep track of the firm's capital structure, and ensure that changes in various policies affecting the factors that determine the capital structure does not affect the firm.

This study contributes to the literature on capital structure in Nigeria in that it makes use of stronger proxies when compared to other studies on capital structure in Nigeria. The field of capital structure is a very wide one and no singular study is

capable of explaining all the relevant areas because of time and space constraints. On this basis, it is recommended that future studies on capital structure on Nigerian firms could use longer timeline data sets as well as develop stronger models that could include firm specific factors like carry forward, discount rates and quality spreads e.t.c.

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APPENDICES

Appendix A: Research Question One

Statistics

		TOTAL DEBT	SHORT TERM DEBT	LONG TERM DEBT	PROFITABILITY	TANGIBILITY	AGE	SIZE	GROWTH	LIQUIDITY	NON-DEBT TAX SHIELD
N	Valid	100	100	100	100	100	100	100	100	100	100
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		.642165480500	.799112474150	.200898817970	.140388736320	.369436781280	40.95	16.5354	1.532583436380	1.368749360230	.037632465980
Std. Error of Mean		.026773866154	.013547552674	.013546661442	.014302129701	.017972778584	1.520	.14268	.628859503321	.066948546716	.002103852971
Median		.600988458500	.831043565000	.168956435000	.116696031000	.372427858000	40.00	16.8550	.956511373000	1.205409995000	.031980429500
Mode		.2825113370[a]	.2456538010[a]	.0191259260[a]	-.5128012730[a]	.0188117870[a]	30[a]	17.49	-21.713516780 0[a]	.1719645720[a]	.0034467940[a]
Std. Deviation		.267738661540	.135475526740	.135466614429	.143021297014	.179727785840	15.201	1.42677	6.28859503321 53	.669485467160	.021038529713
Minimum		.2825113370	.2456538010	.0191259260	-.5128012730	.0188117870	1	12.68	-21.713516780 0	.1719645720	.0034467940
Maximum		2.0673500410	.9808740740	.7543461990	.6117371730	.8503628090	86	18.85	37.572645820 0	3.4833142370	.1144988810

a. Multiple modes exist. The smallest value is shown

Correlations

		TOTAL DEBT	SHORT TERM DEBT	LONG TERM DEBT	PROFITABILITY	TANGIBILITY	AGE	SIZE	GROWTH	LIQUIDITY	NON-DEBT TAX SHIELD
TOTAL DEBT	Pearson Correlation	1	.254*	-.254*	-.403**	.064	-.057	-.086	.064	-.655**	.120
	Sig. (2-tailed)		.011	.011	.000	.529	.572	.395	.529	.000	.234
	N	100	100	100	100	100	100	100	100	100	100
SHORT TERM DEBT	Pearson Correlation	.254*	1	-1.000**	-.066	-.334**	-.189	-.065	.022	-.350**	-.132
	Sig. (2-tailed)	.011		.000	.511	.001	.060	.519	.831	.000	.189
	N	100	100	100	100	100	100	100	100	100	100
LONG TERM DEBT	Pearson Correlation	-.254*	-1.000**	1	.067	.334**	.189	.065	-.022	.350**	.132
	Sig. (2-tailed)	.011	.000		.511	.001	.060	.520	.830	.000	.189
	N	100	100	100	100	100	100	100	100	100	100
PROFITABILITY	Pearson Correlation	-.403**	-.066	.067	1	-.085	-.219*	.145	.110	.231*	-.136
	Sig. (2-tailed)	.000	.511	.511		.399	.028	.150	.275	.021	.177
	N	100	100	100	100	100	100	100	100	100	100
TANGIBILITY	Pearson Correlation	.064	-.334**	.334**	-.085	1	.057	.118	.055	-.419**	.288**
	Sig. (2-tailed)	.529	.001	.001	.399		.576	.241	.584	.000	.004
	N	100	100	100	100	100	100	100	100	100	100
AGE	Pearson Correlation	-.057	-.189	.189	-.219*	.057	1	.005	.174	.024	-.018
	Sig. (2-tailed)	.572	.060	.060	.028	.576		.958	.083	.816	.861
	N	100	100	100	100	100	100	100	100	100	100
SIZE	Pearson Correlation	-.086	-.065	.065	.145	.118	.005	1	-.054	-.147	.082
	Sig. (2-tailed)	.395	.519	.520	.150	.241	.958		.591	.144	.419
	N	100	100	100	100	100	100	100	100	100	100
GROWTH	Pearson Correlation	.064	.022	-.022	.110	.055	.174	-.054	1	-.041	-.138
	Sig. (2-tailed)	.529	.831	.830	.275	.584	.083	.591		.686	.170
	N	100	100	100	100	100	100	100	100	100	100
LIQUIDITY	Pearson Correlation	-.655**	-.350**	.350**	.231*	-.419**	.024	-.147	-.041	1	-.234*
	Sig. (2-tailed)	.000	.000	.000	.021	.000	.816	.144	.686		.019
	N	100	100	100	100	100	100	100	100	100	100
NON-DEBT TAX SHIELD	Pearson Correlation	.120	-.132	.132	-.136	.288**	-.018	.082	-.138	-.234*	1
	Sig. (2-tailed)	.234	.189	.189	.177	.004	.861	.419	.170	.019	
	N	100	100	100	100	100	100	100	100	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

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

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.760[a]	.577	.545	.18	.577	17.95	7	92	.00	1.18

a. Predictors: (Constant), NON-DEBT TAX SHIELD, AGE, SIZE, GROWTH, LIQUIDITY, PROFITABILITY, TANGIBILITY

b. Dependent Variable: TOTAL DEBT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.097	7	.585	17.950	.000[b]
	Residual	3.000	92	.033		
	Total	7.097	99			

a. Dependent Variable: TOTAL DEBT

b. Predictors: (Constant), NON-DEBT TAX SHIELD, AGE, SIZE, GROWTH, LIQUIDITY, PROFITABILITY, TANGIBILITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.654	.233		7.090	.000	1.190	2.117		
	PROFITABILITY	-.517	.140	-.276	-3.707	.000	-.795	-.240	.826	1.210
	TANGIBILITY	-.360	.115	-.242	-3.137	.002	-.588	-.132	.775	1.290
	AGE	-.002	.001	-.103	-1.435	.155	-.004	.001	.894	1.118
	SIZE	-.022	.013	-.115	-1.641	.104	-.048	.005	.927	1.079
	GROWTH	.004	.003	.092	1.290	.200	-.002	.010	.910	1.099
	LIQUIDITY	-.280	.031	-.701	-8.926	.000	-.342	-.218	.746	1.341
	NON-DEBT TAX SHIELD	.111	.925	.009	.120	.905	-1.725	1.947	.871	1.149

a. Dependent Variable: TOTAL DEBT

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.666[a]	.444	.401	.10	.444	10.48	7	92	.00	1.08

a. Predictors: (Constant), NON-DEBT TAX SHIELD, AGE, SIZE, GROWTH, LIQUIDITY, PROFITABILITY, TANGIBILITY

b. Dependent Variable: SHORT TERM DEBT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.806	7	.115	10.476	.000[b]
	Residual	1.011	92	.011		
	Total	1.817	99			

a. Dependent Variable: SHORT TERM DEBT

b. Predictors: (Constant), NON-DEBT TAX SHIELD, AGE, SIZE, GROWTH, LIQUIDITY, PROFITABILITY, TANGIBILITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.322	.135		9.761	.000	1.053	1.590		
	PROFITABILITY	-.014	.081	-.015	-.170	.866	-.175	.147	.826	1.210
	TANGIBILITY	-.408	.067	-.541	-6.125	.000	-.540	-.276	.775	1.290
	AGE	-.001	.001	-.155	-1.882	.063	-.003	.000	.894	1.118
	SIZE	-.007	.008	-.076	-.944	.348	-.022	.008	.927	1.079
	GROWTH	.001	.002	.036	.439	.662	-.003	.004	.910	1.099
	LIQUIDITY	-.123	.018	-.606	-6.727	.000	-.159	-.086	.746	1.341
	NON-DEBT TAX SHIELD	-.720	.537	-.112	-1.341	.183	-1.786	.346	.871	1.149

a. Dependent Variable: SHORT TERM DEBT

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.806	7	.115	10.474	.000[b]
	Residual	1.011	92	.011		
	Total	1.817	99			
a. Dependent Variable: LONG TERM DEBT						
b. Predictors: (Constant), NON-DEBT TAX SHIELD, AGE, SIZE, GROWTH, LIQUIDITY, PROFITABILITY, TANGIBILITY						

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-.321	.135		-2.373	.020	-.590	-.052		
	PROFITABILITY	.014	.081	.015	.171	.864	-.147	.175	.826	1.210
	TANGIBILITY	.408	.067	.541	6.123	.000	.275	.540	.775	1.290
	AGE	.001	.001	.155	1.883	.063	.000	.003	.894	1.118
	SIZE	.007	.008	.076	.942	.349	-.008	.022	.927	1.079
	GROWTH	-.001	.002	-.036	-.440	.661	-.004	.003	.910	1.099
	LIQUIDITY	.123	.018	.606	6.726	.000	.086	.159	.746	1.341
	NON-DEBT TAX SHIELD	.720	.537	.112	1.341	.183	-.346	1.786	.871	1.149

a. Dependent Variable: LONG TERM DEBT

Appendix B: Research Question Two

Descriptive Statistics

	Mean	Std. Deviation	N
Long-term debt to Capital	5.891242334470	10.8387242375361	100
Debt to Capital	37.055351247160	61.1481229956291	100
Debt to Asset	.642165480500	.2677386615401	100
Debt to Common Equity	3.165580113800	6.0293475288448	100
Long -term debt to Equity	.464436505310	.6962475452525	100
Return on Asset	.131399128990	.2538261425682	100
Return on Equity	.328025847000	.5232718673288	100
Operating Margin	.102969014220	.1081813632241	100
Return on Capital	4.996847220000	9.5350408465741	100
Net Margin	.081438516360	.1543305793461	100

Correlations

		Long-term debt to Capital	Debt to Capital	Debt to Asset	Debt to Common Equity	Long -term debt to Equity	Return on Asset	Return on Equity	Operating Margin	Return on Capital	Net Margin
Long-term debt to Capital	Pearson Correlation	1	.634**	.194	.126	.371**	.052	.326**	.046	.688**	.005
	Sig. (2-tailed)		.000	.053	.210	.000	.610	.001	.646	.000	.960
	N	100	100	100	100	100	100	100	100	100	100
Debt to Capital	Pearson Correlation	.634**	1	.395**	.364**	.228*	-.007	.246*	-.198*	.626**	-.078
	Sig. (2-tailed)	.000		.000	.000	.022	.948	.014	.049	.000	.442
	N	100	100	100	100	100	100	100	100	100	100
Debt to Asset	Pearson Correlation	.194	.395**	1	.326**	.236*	.354**	.047	-.557**	.475**	.240*
	Sig. (2-tailed)	.053	.000		.001	.018	.000	.643	.000	.000	.016
	N	100	100	100	100	100	100	100	100	100	100

Debt to Common Equity	Pearson Correlation	.126	.364**	.326**	1	.836**	-.174	-.170	-.317**	.005	-.209*
	Sig. (2-tailed)	.210	.000	.001		.000	.084	.090	.001	.959	.037
	N	100	100	100	100	100	100	100	100	100	100
Long -term debt to Equity	Pearson Correlation	.371**	.228*	.236*	.836**	1	-.130	-.115	-.221*	.136	-.168
	Sig. (2-tailed)	.000	.022	.018	.000		.198	.254	.027	.178	.095
	N	100	100	100	100	100	100	100	100	100	100
Return on Asset	Pearson Correlation	.052	-.007	.354**	-.174	-.130	1	.471**	.260**	.610**	.931**
	Sig. (2-tailed)	.610	.948	.000	.084	.198		.000	.009	.000	.000
	N	100	100	100	100	100	100	100	100	100	100
Return on Equity	Pearson Correlation	.326**	.246*	.047	-.170	-.115	.471**	1	.420**	.508**	.410**
	Sig. (2-tailed)	.001	.014	.643	.090	.254	.000		.000	.000	.000
	N	100	100	100	100	100	100	100	100	100	100
Operating Margin	Pearson Correlation	.046	-.198*	-.557**	-.317**	-.221*	.260**	.420**	1	.032	.405**
	Sig. (2-tailed)	.646	.049	.000	.001	.027	.009	.000		.755	.000
	N	100	100	100	100	100	100	100	100	100	100
Return on Capital	Pearson Correlation	.688**	.626**	.475**	.005	.136	.610**	.508**	.032	1	.525**
	Sig. (2-tailed)	.000	.000	.000	.959	.178	.000	.000	.755		.000
	N	100	100	100	100	100	100	100	100	100	100
Net Margin	Pearson Correlation	.005	-.078	.240*	-.209*	-.168	.931**	.410**	.405**	.525**	1
	Sig. (2-tailed)	.960	.442	.016	.037	.095	.000	.000	.000	.000	
	N	100	100	100	100	100	100	100	100	100	100

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

*. Correlation is significant at the 0.05 level (2-tailed).

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.480[a]	.230	.189	.23	.230	5.617	5	94	.000	1.960

a. Predictors: (Constant), Long -term debt to Equity, Debt to Capital, Debt to Asset, Long-term debt to Capital , Debt to Common Equity

b. Dependent Variable: Return on Asset

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.117	.062		-1.904	.060
	Long-term debt to Capital	.002	.004	.097	.531	.597
	Debt to Capital	-.001	.001	-.158	-.897	.372
	Debt to Asset	.466	.096	.491	4.866	.000
	Debt to Common Equity	-.012	.011	-.277	-1.066	.289
	Long -term debt to Equity	-.005	.094	-.014	-.056	.956

a. Dependent Variable: Return on Asset

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.419[a]	.175	.131	.49	.175	3.997	5	94	.002	2.096

a. Predictors: (Constant), Long -term debt to Equity, Debt to Capital, Debt to Asset, Long-term debt to Capital , Debt to Common Equity

b. Dependent Variable: Return on Equity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.269	.132		2.042	.044
	Long-term debt to Capital	.016	.009	.331	1.751	.083
	Debt to Capital	.001	.002	.110	.603	.548
	Debt to Asset	.033	.204	.017	.164	.870
	Debt to Common Equity	-.010	.023	-.115	-.426	.671
	Long -term debt to Equity	-.129	.200	-.172	-.645	.521

a. Dependent Variable: Return on Equity

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.829[a]	.687	.670	5.48	.687	41.226	5	94	.000	2.053

a. Predictors: (Constant), Long -term debt to Equity, Debt to Capital, Debt to Asset, Long-term debt to Capital , Debt to Common Equity

b. Dependent Variable: Return on Capital

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.411	1.478		-4.337	.000
	Long-term debt to Capital	.259	.103	.294	2.520	.013
	Debt to Capital	.068	.018	.435	3.876	.000
	Debt to Asset	12.750	2.293	.358	5.560	.000
	Debt to Common Equity	-.922	.262	-.583	-3.522	.001
	Long -term debt to Equity	4.524	2.247	.330	2.013	.047

a. Dependent Variable: Return on Capital

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.610[a]	.372	.338	.088	.372	11.12	5	94	.000	.862

a. Predictors: (Constant), Long -term debt to Equity, Debt to Capital, Debt to Asset, Long-term debt to Capital , Debt to Common Equity

b. Dependent Variable: Operating Margin

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.243	.024		10.245	.000
	Long-term debt to Capital	.004	.002	.373	2.257	.026
	Debt to Capital	.000	.000	-.209	-1.312	.193
	Debt to Asset	-.210	.037	-.519	-5.686	.000
	Debt to Common Equity	.002	.004	.128	.546	.586
	Long -term debt to Equity	-.046	.036	-.296	-1.273	.206

a. Dependent Variable: Operating Margin

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.409[a]	.167	.123	.14	.167	3.777	5	94	.004	1.850

a. Predictors: (Constant), Long -term debt to Equity, Debt to Capital, Debt to Asset, Long-term debt to Capital , Debt to Common Equity

b. Dependent Variable: Net Margin

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.027	.039		-.681	.497
	Long-term debt to Capital	.002	.003	.139	.731	.467
	Debt to Capital	-.001	.000	-.229	-1.252	.214
	Debt to Asset	.224	.061	.388	3.694	.000
	Debt to Common Equity	-.005	.007	-.176	-.653	.515
	Long -term debt to Equity	-.025	.059	-.111	-.416	.679

a. Dependent Variable: Net Margin