LEVERAGE AND PROFITABILITY OF LISTED HEALTHCARE FIRMS IN NIGERIA

BY

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DECLARATION

This Dissertation is the product of my research effort. The study was carried out by me and all materials and ideas derived from various sources are duly acknowledged in the text and list of reference. To the best of my knowledge, this work has not been submitted elsewhere for the award of any degree or any certificate.

_____ _____

Oluwafemi Olumuyiwa OLAIFA **Sign**

M.Sc/Admin/4862/2010-2011

CERTIFICATION

The Dissertation entitled "Leverage and Profitability of Listed Healthcare Firms in Nigeria" by Oluwafemi Olumuyiwa OLAIFA meets the regulation governing the award of Masters of Science degree in Accounting & Finance of Ahmadu Bello University Zaria and it is approved for its contribution to knowledge and literary presentation.

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DEDICATION

To God who is able and capable to do all things.

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I owe my greatest debt and gratitude to God Almighty who has remained faithful to me throughout my programme and all through the days of my life. His praise shall never depart from my mouth.

Forever I remain in the debts of my Parents, Mr. and Mrs. Olaifa, for their care, love, prayers and support, without which I cannot achieve this milestone. My siblings; Oluwabanjo, Oluwabamise, Oluwasanmi, Taiwo, Kehinde and Olaoluwa your supports are immeasurable, thank you.

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ABSTRACT

Leverage and its influence on profitability has been a major point of argument among researchers, since different research comes up with divergent views to explain how relevant or irrelevant it is. This study examines the impact of leverage on profitability of Listed Healthcare firms in Nigeria for a period of 10 years (2004-2013). The study employs return on asset (ROA), return on equity (ROE) and earnings per share (EPS) as proxies for profitability and Total debt to total asset, Long-term debt to total asset and Short-term debt to total asset as measures for leverage, and using secondary data extracted from the firm's financial statements and the Nigerian Stock Exchange fact book. Seven firms formed the sample size out of the ten listed healthcare firms in the Nigeria stock exchange market. The study employs a correlational design and use robust ordinary least square regression technique to analyse the data, while using the variance inflation factor as a check on harmful Collinearity among variables. The result shows that total debt to total asset (TDTA) has a significant positive impact on ROE and a significant negative impact on EPS. The result also shows that long-term debt to total asset (LTDTA) has a significant positive impact on ROE. Finally, the result shows that short-term debt to total asset (STDTA) has a significant negative impact on ROA and EPS. Hence, the study recommends that if management wants to increase return on equity, the study suggest that management should increase the total debt value but if the focus is to increase earnings per share, the study recommends that total debt be reduced. Management should increase the level of long-term debt to increase firms return on equity ratio. Finally, management should consider reducing the level of short-term debt in their debt structure in order to increase return on asset and earnings per share of their firm.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The term capital structure refers to the combination of diverse option and financial framework in which a firm uses to finance in its trading, operating and investing activities. It largely consists of external debt, external equity and internal equity (Ong & Teh, 2011; Chowdhury & Chowdhury, 2010). Depending on the need of the firm, the financial manager may chose to use any of the available sources of capital or a combination of all, and that forms the firm's capital structure. The survival, sustenance and profitability of a firm hinges on its capital structure; hence, it is so crucial and very important to the firm. According to Prasad, Green and Murinde (2003) capital structure of a firm is a major prerequisite to the firm's ability to succeed by making profit and satisfying its shareholders and other contributor of capital. Prasad *et al* (2003) identified improper financing strategy and capital structure as leading factors to business collapse in developing countries. However, the bane of financial managers in developing and developed countries would be finding the right balance or proportion of capital structure mix that suits their respective economies and businesses.

In a bid to understanding how leverage affects firms, there is need to understand profitability and its influence on leverage choices. Profitability, which is usually regarded as the lifeblood of a business venture, is another key ingredient that affects manager's decisions on the use of leverage in firms capital structure (Ali & Iman, 2011). For newly established business enterprise, the use of leverage as a finance option may be for stability and expansion but for old existing firms the need for leverage might be different. Policies on the use of leverage are expected to change in the event where profit is involved. Profitability as a key aspect of business survival may have different types of impact on the firm's capital structure and this effect may range from positive to negative territories (Adeyemi & Oboh, 2011; Ali & Iman, 2011; Akintoye, 2008; Titan & Zetium, 2007). Having said the above, the relevance of leverage to firm's value was questioned in the famous work of Modigliani and Miller of 1958, where they argued that capital structure has no relevance on the value of the firm under the perfect market condition settings. However, many researchers questioned this proposition, among which, is the work of Jensen and Meckling (1976), they postulated that the amount of leverage in a firm's capital structure affects the managers' choice of operating activities and that it has a bearing on the overall firm performance and its' total value. Many other researchers argued that capital structure has an effect on the overall value of firms only that this effect ranges from positive to negative (Ali & Iman, 2011; Oke & Afolabi, 2008 and Abor, 2005). Pragmatically, the conclusion reached by previous research, which ranges from positive to negative shows the uniqueness of each country's economy in terms of its market

size, product, industry, management culture and financial strength. Thus, every economy should be given a closer look in order to understand how capital structure affects them.

The importance of capital to firm's sustainability cannot be over emphasised because at every stage of any company, capital is always important. Capital is needed to start a business venture, it is highly important at firm's growth stage and it is a potent killer for business when it is not properly managed (Iorpev & Kwanum, 2012; Alexader & Jonas, 2011). While it is agreed that capital is important to a firm, the argument remains; what should constitute good leverage structure and what components will greatly affect the chances of making profit. In bolstering this point, Modigliani and Miller (1963) posited that a good capital structure should be one formed completely with debt because interest payment on debt will lower tax return and that will form a shield for the firms' profit. Meziane (2007) explained that the gains of using debt to finance the activities of a firm is in the discipline it exerts on the managers and the tax benefit it gets in return. So it is assumed that the more protection from tax liability the better the profit.

Private firms are setup with the objective of providing qualitative services and cater for the need of the growing population; Healthcare firms are in this area needed as alternative to government establishments. Aside from the objective of qualitative services, the most important objective is to make profit and harmonize all other potentials to maximize shareholders wealth. Profitability is a vital and important aspect of every business venture as it can influence the financial policy of such venture. If profit dwindles, financial managers may jack up firms leverage in other to increase investment for the expectation of more profit. Where the leverage level of an organization is jacked up, bankruptcy risk will increase and this can poise a great risk to the shareholders interest (Jensen & Meckling, 1976; Meziane, 2007; Iorpev & Kwanum, 2012). For the protection of these contributors of capital, there is need to re-examine if there is actual need for leverage in a firm's capital structure and what effect does it have on profitability.

With the recent downturn in the global economy, re-shuffling in the Nigerian Stock Exchange (NSE) and reforms and innovations in the entire financial system of the country, one issue that has received attention and great debate in the research parlance is decisions on capital structure and how such decisions affects firms' value. Arguments such as what constitute optimal capital structure, what determines capital structure and impact of capital structure on profitability of firms are leading topics in the research space. More importantly, the attention given to how leverage affects profitability is unequaled but the result and conclusion reached are conflicting.

Based on the static trade-off theory, it is assumed that the use of leverage will increase profitability and firms' value. The assumption is that there should be evidence in support of leverage having a positive effect on profitability of listed healthcare firms in Nigeria. Hence, leverage should be positively related to Return on asset (ROA), Return on Equity (ROE) and Earnings per Share (EPS) accordingly. The contention here is that, reality poises an unstable platform for the use of leverage, there is an ever changing market, uncertain economic policies and financial policies and a whole lot of other uncertainties. The crux of the matter is; what effect will leverage have on profitability of Nigerian listed healthcare firms considering the ever-changing environment in which business ventures operates. Most of the well-articulated works on capital structure from developed economies have yielded diverse results and conclusions, even local research conducted in this area have been fraught with inconsistent result and conclusions. Inconsistencies in result could be due to economic differences, industries specifics and method used in those studies as explained by Onaolapo and Kajola (2010). Adopting the result of work done in developed economies as a working basis for developing or emerging economy like Nigeria could be misleading because they have advance market and economy, which are not in the same settings as in developing countries. This research focuses on the Listed Healthcare firms in Nigeria.

1.2 Statement of the Problem

It is no doubt that one key objective of financial managers is to manage firm's resources in a way to maximize profit and in order to achieve this objective, more attention is needed to be focused on how profitability can be affected positively by the use of leverage. In a situation where there is no enough knowledge, the wrong application of leverage could increase bankruptcy risk, thereby putting the going concern of the firm at jeopardy and eventual loss for the owners. On the other hand, under utilization of leverage could cause profit to erode due to tax liability, since interest on debt is tax deductible.

With this dilemma in mind, both foreign and local researchers have not been able to come to a unified conclusion. The works of Oke and Afolabi (2007), Akintoye (2008), Dare and Shola (2010), Onaolapo and Kajola (2010), Omorogie and Erah (2010) have contributed to the subject but their findings and conclusions are at disparity. It is in the wake of these inconsistent results that sprung the idea to revisit the subject matter. Common to previous research, their considered period or span of study is considered short. Most of these studies e.g Nour (2012); Meysam, Shaer and Soleimani (2012) and Ali and Iman (2011) use a time span lesser than ten years which might not be enough for the variables to adequately form a pattern, as insinuated by Onaolapo and Kajola (2010).

Previous researches like Osuji and Odita (2012), Uwalomwa and Uadile (2012), Muhammad *et al* (2012), Ali and Iman (2011) amongst others favour the use of multiple sectors or a combination of firms from different sectors of the economy, this could influence the result and conclusion reached by those studies. Every sector of the economy has its own different specifics, which could have a significant effect on the result and conclusion reached. Hence, carrying out a study that will focus on a specific sector is sure to give a more reliable result and a truer picture of relationship among the variables.

In research, time is of paramount importance, a timely research is needed in order to have a close glimpse of recent reality and previous research cannot satisfy that because it will be un-wholly to apply their result, conclusion and recommendation on current state of events. In order to be abreast with recent reality, it is necessary to carry out fresh research on the subject matter of leverage and profitability in the Nigerian healthcare sector. This research seeks to fill this gap and add to existing knowledge by using current data from the firms listed in this sector to answer questions like; does leverage really affect profitability? If it does, in what ways does it affect profitability in the Nigerian healthcare sector; negatively or positively? In addition, what aspect of profitability is affected by leverage? What measure of leverage better impacts profitability of listed Healthcare Firms in Nigeria?

1.3 Objectives of the Study

In view of the statement of problems above, the general objective of the study is to examine the impact of leverage on profitability of listed healthcare firms in Nigeria. The specific objectives of the study are:

i. To examine the impact of total debt on profitability of listed healthcare firms in Nigeria;

ii. To investigate the impact of long-term debt on profitability of listed healthcare firms in Nigeria;

iii. To evaluate the impact of short-term debt on profitability of listed healthcare firms in Nigeria.

1.4 Statement of Research Hypotheses

To achieve the aims of this study, the objectives are hypothesized as follows:

H_{01}: Total debt has no significant impact on profitability of listed healthcare firms in Nigeria.

H_{02}: Long-term debt has no significant impact on profitability of listed healthcare firms in Nigeria.

H_{03}: Short-term debt has no significant impact on profitability of listed healthcare firms in Nigeria.

1.5 Scope of the Study

This study covers a period of ten years spanning from 2004 to 2013. The study period encompass the period before the global economic meltdown, which can be referred to as a stable economic period. The global economic meltdown was also within this period, which caused lots of panic in the global market and had a ripple effect on the domestic capital markets. The revival or recovery period where it can be said that the economy is regaining a better shape is also covered within this scope.

Hence, this period of study was carefully chosen to capture all the financial activities and indices limited to leverage and profitability of the Nigerian healthcare sector during those phases of economy and to use the data from the period to determine how leverage impacts profitability. The measure of Leverage is limited to total debt, long-term debt and short-term debt because loan covenant are generally written in book value and are easy to obtain. The measure of profitability is also limited to return on asset, return on equity and earnings per share. These measures reflect management's view of profit used in measuring their efficiency and shareholders view of profit accrued to them.

1.6 Significance of the Study

In a country forging new economic policies of which its effect has a direct bearing on the capital market and firms who want to source for fund. It is of paramount importance to provide better understanding of how the source and type of capital can influence performance of a firm.

Firstly, financial analysts who are faced with the hurdles of projecting and analyzing how the future of a firm would look like would be equipped with better knowledge of what may influence the future of the firm. Financial managers who are faced with the dilemma of making the best decision about capital structure would have better knowledge on what should be considered before considering the use of leverage.

Secondly, potential investors and shareholders need guidance to make informed decision about the right firm to put in their hard earn money. This research work will help potential investors understand if high leverage is indeed a good indicator for investment decision.

Lastly, the research work follows the popular concept of causality between leverage and profitability or performance indicators by taking into consideration effect of capital structure element (Leverage) on profitability. This work adds to the existing body of knowledge by using and testing recent data on the subject matter of leverage in listed healthcare firms especially in developing and emerging economy, such as Nigeria.

1.7 Summary

The chapter introduces the subject matter and presents the underlying issues that gave rise to the study. The objectives and the hypotheses of the study are stated and the significance of the study is duly established.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents concepts of capital structure and profitability, it also reviewed relevant empirical literatures and theories of capital structure and provides theoretical framework that underpins the study. The aim is to acknowledge the contributions of previous research as well as to identify the gap within literature that needs to be filled.

2.2 Concept of capital structure

According to Firer, Ross, Westerfield and Jordan (2004) capital structure refers to the amount of debt and equity a firm uses to finance its operational activities. Meyer (2001) explains that the mix of securities and sources of finance used by corporation to finance real investment is referred to as capital structure. The capital structure of a firm describes the way in which a firm raises capital needed to establish and expand its business activities. It is a mixture of various types of equity and debt capital a firm maintained resulting from the firms financing decisions (Xiaoyan, 2008). Masulis (1988) explained further that capital structure encompasses a company's publicly issued securities, private placements, bank debt, trade debt, leasing contracts, tax liabilities, pension liabilities, deferred compensation to managements and employees, performance guarantees, product warranties and other contingent liabilities.

Capital structure is an important aspect of a firm and it is the combination of various sources of capital, which is categorised into equity and debt in order to finance firms' operational activities for the purpose of achieving organisational aims and objectives. Equity as a capital structure component was defined by Pandey (1999) as share-capital, share premium, reserves and surpluses (retained earnings). Equity capital is categorised into two: contributed capital, which is the money, originally invested in the business in exchange for equity shares or ownership right. Retained earnings, which comes as a result of profits from past years, that have been kept by the company and used to strengthen the balance sheet or fund growth, acquisitions, or expansion. For the sake of this study, the aspect of capital structure deliberated upon is leverage because of the profit protection from tax and its reported ability to increase firm value.

2.3 Leverage a component of capital Structure

The importance of leverage as a component of capital structure was established in the work of Modigliani and Miller (1963), where they posited that an optimum capital structure should be one formed completely with debt because interest payment will lower tax return and that will form a shield for the firms' profit. Jensen and Meckling (1976) also buttressed the point where they argued that the amount of leverage in a firm's capital structure affects managers' choice of operating activities and that these activities in turn affect the performance of the firm and its total value. Heinkel (1982) and Noe (1988) suggested that increasing leverage and acquiring more debt should have positive implications on the value and performance of a firm. Hadlock and James (2002) supported this view where they concluded that companies prefer debt financing whenever they anticipate a higher return, which is also as explained by the Trade off theory.

Leverage being a critical component of capital structure has been defined by different authors and researchers. Voulgaris, Asteriou and Agiomirgianakis (2004) defined leverage as the amount of foreign capital or liabilities which are reflected on a company's balance sheet and is expected to grow as the company size grows. Correia, Flynn, Uliana and Wrmald (2006) maintained that leverage is the relative use of debt in the capital structure which is intended to increase the return on shareholder funds in exchange of greater financial risk or high bankruptcy risk. Doron and Stephen (2003) explained that leverage is traditionally, viewed as arising from financing activities, but firms do borrow to raise cash for operational activities. For analyzing profitability and firm valuation, two forms of leverage are of importance, one arising from financing activities and another from operating activities. Leverage arising from financing activities are usually items like bank loans and bonds issued, while other leverage like trade payables, deferred tax and pension liabilities are as a result of operational activities from transactions with suppliers, customers, employees and government.

Leverage as an important tool is used by many companies in their capital structure in order to increase profit. However, the use of leverage to increase profitability varies between companies and the ability of company's management to increase their profit by use of leverage indicates the quality of the management's corporate governance. Good corporate governance shows the companies' performance on their use of leverage to increase profit (Maher & Andersson, 1999). According to Brigham and Ehrhardt (2005) proper use of leverage can increase return on equity ratio meaning that company's management can make use of leverage to increase profit. This can also be an indication of management ability to maximize profit from the use and operation of its asset.

According to Stulz (1990) potential benefit arising from the use of leverage is the likelihood of producing efficiency gains in companies with abundant free cash flow, that do not require much additional capital to fund investment requirements. Increasing debt over equity will add value by strengthening management's incentive to increase future cash flow and return excess capital to investors. Adding to that, taxes also provides important and quantifiable benefit for debt financing, interest payments to debt holders are tax deductible while dividend payments to equity holders are not. This gives a clear reason for firms to borrow rather than issue equity. The value of the tax shield provided by debt in a given year is a function of the interest paid and the marginal tax rate. Isik and Howard (1997) added that firms expecting low earnings in the near future would not benefit greatly from the tax shields afforded by debt, for cases like that firm should have relatively little debt on its balance sheet. On the other hand, firms with high expectancy of future earnings should consider taking on more debt as a means of shielding earnings from taxes.

Another important factor justifying the use of leverage is the fact that it helps to keep the stable control of the firm i.e. no control dilution and no issue of new shares helps to increase the value of return expected by existing shareholder in time of economic boom. Where there are new issues, profit will be shared by more shareholders and this will definitely reduce the income of existing share holders.

2.4 Theoretical Factors influencing the use of Leverage

Management are faced constantly with the dilemma of creating a favourable capital structure, with the objective of maximizing shareholders wealth. This idea of appropriate capital mix is referred to by Myers (1977) and Myers and Majluf (1984) as the optimum capital structure. Theories have been propounded to explain how capital decisions are made, among them are theories based on asymmetric information, agency cost, trade-off between tax benefit and bankruptcy cost.

Starting with the asymmetric information, which was based on the pecking order framework developed by Myers and Majluf (1984). Information differences between management and potential investors will result to relative cost of finance among different sources of finance. The cost of issuing debt will not be the same as the cost of new equity, because the return expected by this separate source is different. In addition, the firm as providers of fund through retain earnings have a different expectation, which is different from that of external finance sources. Due to this relative cost arising from these sources of finance, a pecking order is established. In which firms will initially rely on the use of retained earnings since there is no existence of information asymmetry; followed by the issue of debt and where the firm still need more fund, the issue of new equity is the last resort to cover any other remaining capital requirement. This order or hierarchy of preference is a reflection of the associated cost of the various financial options. Further advised by Myers and Majluf (1984), firms with high earnings are expected to use less debt financing than firms with low earnings.

The use of debt financing can lead to agency cost as enunciated by Jensen and Meckling (1976); agency cost arises from the relationship that exists between management and equity shareholders and between debt holders and equity shareholders. The relationship can be explained as a principal-agent relationship. Where shareholder and debt holder assumes the role of the principal and management assumes the role of the agent. Harris and Raviv (1990) explained that separation of ownership and control may make management to indulge in perquisites and choosing input and output that suit their own preference and ambition without considering the plight of the shareholders and debt holders.

Management may invest in project with low net present value as far as it will increase their controlling powers over firms' resources. The control over investment options and strategies is also a point of conflict among management and shareholders. Debt holders have their own share of the conflict as discrepancies arise with shareholders on the kind of risk taken by the firm on investment options. Jensen and Meckling (1976) attributed this conflict as that arising because of claims to the company's cash flow. Debt holder only has a fixed claim over the cash flow of the firm through interest on the capital they contribute. However, equity holders have no fixed claim over the firms' cash flow but a residual claim. The conflict is aggravated because in the event of an investment yielding large returns, equity holder stands to receive the largest claim while debt holders are entitled to a fixed interest; where the investment fails, the equity holders are protected by the limited liability clause while debt holders bear the majority of the loss. Therefore, while equity holders are willing to take on high-risk investment because of the projected income, debt holders are looking out for a way that will ascertain their fixed return.

Tax benefit accrued from the use of leverage can also explain why firm choose to use debt finance. Prasad, Green and Murinde (2003) observed that tax policy has an important impact on firms' capital structure. The use of leverage provides avenues where firms are allowed to deduct interest on debt in the computation of taxable income. This tax benefit can be seen as a factor leading firms to the use of more debt in their financing mix. It is not practical for any firm to rely solely on debt financing but the temptation is high given the amount of income that could be saved from taxation. Miller (1977) pointed that, profit associated with use of debt are protected from tax while income associated with equity, such as dividends are not protected from tax.

Therefore, this tax benefit accrued from the use of debt encourages firm to use more debt, as more debt increases the after tax proceeds due to the owners of the firm. While there is a corporate tax benefit which is resulting from deductibility of interest payment on debt, it is important to note that investors receive these interest payment as income and this income from interest is taxed under the personal income tax. Myers (2001) and Miller (1977) posited that as the supply of debt from all corporation rises and expand; investors with higher contribution of debt and a higher tax bracket have to be enticed to hold corporate debt and to receive more of their income in form of interest rather from capital gains. As interest rate rises due to more debt being issued, firms are bound to face a rise in cost of debt in relation to the cost of equity financing.

Bankruptcy costs are incurred from the perceived probability of a firm defaulting in its obligations towards its creditors. According to Haugen and Senbet (1988, 1978), for capital market price to be competitively determined by rational investors, there must be no

bankruptcy cost or at most, it should be minimal that it will have no significant effect on the attitude of investors or other stakeholders. Titman (1984) earlier opined that the perceived bankruptcy, will make stakeholders unwilling and reluctant to do business with the firm; and that will lead to both direct and indirect cost on the firm. The direct cost will be associated with legal and administrative cost while indirect cost will arise from the loss of profit incurred by the firm. Pandey (2004) expanded that the direct cost associated with insolvency also arises from the delay of proceedings. Conflict of interest among creditors and other stakeholders delays liquidation of the company's asset. Since assets are not in use from the time of proceedings, they are likely to deteriorate over time and there realizable value becomes lower than the current price. The perceived bankruptcy will also raise lenders required rate of return, which in turn will cause a dampening effect on market value of equity.

Financial distress with or without insolvency also has many indirect cost which stems from actions of employees, customers, suppliers, investors, shareholders and managers. Employees of a distressed firm become demoralised, as they worry about their future. This has a significant effect on efficiency and productivity and as efficient employees start leaving the company, the reputation of the firm drops as well as the sale of product. Customers reduce patronage due to fear that quality of goods and services will drop. Suppliers of raw materials curtails the extension of credit as they fear the looming liquidity problem, they become less tolerant and may force a firm into liquidation to realize their claims. Investors are not willing to supply capital to distressed firm, where they are willing the required rate of return is very high. Where firms could not take on profitable investment due to non-availability of fund the value of the firm is affected adversely.

Managers in their own way have the tendency to expropriate firm's resources in the form of perquisites and avoid risk; due to fear of liquidation, they shift attention from long-term interest to short-term interest of the company. They focus more on the short-term liquidity of the firm and may cut cost that affect quality of product by selling off productive asset. This sub-optimal decision will further drive a firm away from reaching an optimal capital structure (Pandey, 2004). Although the increased use of debt may add to firm value, bankruptcy risk also increases with the use of debt. Hence, for a balanced and favourable capital structure to exist firms should seek to balance bankruptcy cost and the benefit accrued from debt financing.

2.5 Types and Measurement of Leverage

Leverage result from the use of fixed cost assets or funds to magnify returns to the firm's owners. Generally, an increase in leverage will lead to an increase in return and risk, whereas a decrease in leverage will also lead to decrease in return and risk (Stein 2004, 2001). The

amount of leverage in the firm's capital structure can significantly affect its value. Because of this effect on value a manager must understand how to measure and evaluate leverage, particularly when making capital structure decisions. Pandey (2004) stated that there are three types of leverage and they are as follows: operating leverage, financial leverage and total or combined leverage.

2.5.1 Operating leverage

As Posited by Pandey (2004), Operating leverage is concerned with the relationship between the firm's sales and its earnings before interest and tax (EBIT). Hence, it is a measure of the extent to which, fixed operating costs are being used in an organization. It is usually greater in companies that have a high proportion of fixed operating costs in proportion to variable operating costs. According to Pandey (2004), this type of company is using more of fixed assets in the operation of the company. Conversely, operating leverage is lower in companies that have a low proportion of fixed operating costs in relation to variable operating costs. Variable costs in these firms tend to be low and both the contribution margin (CM) and unit contribution (UC) is high. Soku (2007) posited that operating leverage is created by fixed operating costs, such as general administrative overhead expenses, contract employees' salaries and mortgage or lease payment, which tend to increase business risk. The impact of operating leverage is pronounced, when a given percentage changes in net sales results in a greater percentage change in operating income (EBIT).

According to Akintoye (2008), degree of operating leverage is calculated as the Percentage Change in Operating Income divided by percentage change in sales. It could also be calculated by dividing contribution margin by earnings before interest and tax. Alternatively, degree of operating leverage can be stated as total sales less total variable cost divided by the summation of total sales less total variable cost less total operating fixed cost. The fault in this measure is that it does not consider the overall debt situation of an organisation. It is narrow in its scope and can at best used in measure of sensitivity of operating profit to leverage fluctuations.

2.5.2 Financial leverage

Financial leverage is concerned with the relationship between the firm's earnings before interest and tax (EBIT) and its common stock earnings per share (EPS). Financial leverage involves changes in shareholders' income in response to changes in operating profits, resulting from financing company's assets with debt or preferred stock. Financial leverage takes the form of loan or other debt, the proceeds of which are reinvested with the intent to

earn a greater rate of return than the cost of interest. Substantial use of debt will place a great burden on the firm at low levels of profitability because financial leverage relates to fixed debt costs which increases a firm's financial risk since interest must be paid (Pandey, 2004).

However, it will also help to magnify increases in earnings per share (EPS) as the EBIT or operating income increases. Financial leverage can increase EPS under favourable economic conditions and when the goings is not good for the firm, EPS will decrease. The unfavourable effect of financial leverage on EPS is more severe with more debt in the capital structure when EBIT is negative. Similarly, a firm's financial leverage can increase shareholders' return and as well increase their risk. Financial leverage is calculated as percentage change in earning per share divided by percentage change in operating income (Pandey, 2004, 1999 and Akintoye, 2008).

2.5.3 Total / Combined leverage

Total or combined leverage is concerned with the relationship between firm's sales revenue and its earnings per share (EPS). When financial leverage is combined with operating leverage the effect of a change in output or sales in magnified in the change in earnings per share (EPS). Operating leverage gives us the change in EBIT with a change in sales and financial leverage gives us the change in EPS with a change in EBIT. Total leverage is therefore concerned with the relationship between sales and earnings per share. Specifically, it is concerned with the sensitivity of earnings to a given change in sales. Hence, it is calculated as percentage change in earnings per share divided by percent change in sales. Multiplying the degree of financial leverage and degree of operating leverage will also give degree of combined leverage (Pandey, 2004)

2.5.4 Other Measures of Leverage

In empirical studies, the measurement and types of leverage used are based on the objectives of the research. Titman and Wessels (1988) discussed some measures of financial leverage: long-term, short-term and convertible debt divided by market and book values of equity respectively. This measurement was expanded in the works of Rajan and Zingales (1995) where they opined that measurement of leverage are based on accounting or book value.

The first measure of leverage is the ratio of total (non-equity) liabilities to total assets. This can be viewed as a proxy of what is left for shareholders in case of liquidation. However, this measure has been criticized for not providing a good indication of whether the firm is at risk of default in the near future or not. In addition, since total liabilities also include items like

accounts payable, which are used for transaction purposes rather than for financing, it is likely that leverage amount might have been overstated. The second measure of leverage is the ratio of debt (combination of short term and long term) to total assets. This method of measurement covers debt in a narrower sense, only debt with the burden of interest are covered as it excludes other provisions. However, it fails to incorporate the fact that there are some assets that are offset by specific non-interest liabilities. Yet it still best shows the management target debt ratio as Thies and Klock (1992) stated.

The third measure is the ratio of total debt to net assets. Net asset is calculated as total assets less accounts payable and other current liabilities. This method of measuring leverage is not affected by non-interest bearing debt and working capital management. Although, it is influenced by other factors that have nothing to do with financing. Example of such component is; assets held against pension liabilities and this may decrease this measure of leverage. The fourth measure of leverage is the ratio of total debt to capital, where capital is the combination of total debt and equity. This measure of leverage looks at the capital employed and what best represents the effects of past financing decisions.

Leverage can also be measured based on length of time i.e long-term and short-term debt as used in Abdul (2012), Iorpev and Kwanum (2012), Ramachandran and Packkirisamy (2010), Ebaid (2009), Abor (2005). In addition, Loof (2003) stated that the measurement of leverage varies from accounting or book value measurement to market measurement and a combination of both called Quasi-market value measurement. Since market values of leverage may be difficult to obtain, accounting based measures are often applied as proxies. Titman and Wessels (1988) explained that the use of book value rather than market value by empirical studies is based on data limitations. Loof (2003) argued that the use of book value may be immaterial and with little effect because value of intangible asset will disappear during liquidation and cannot be easily sold. Nevertheless, where both book and market value of leverage are available, they should both be used simultaneously based on simple reason that information signalled in book value and market value is informative in different aspects. Fama and French (2000), Thies and Klock (1992) argued that most of the theoretical predictions applies to book leverage and suggested that book ratios better reflect management's target debt ratios than market value.

2.6 Concept of Profitability

The main aim of an enterprise is to earn profit, which is necessary for the survival and growth of the business enterprise. Businessdictionary.com (2013) defined Profit as the surplus remaining after total costs are deducted from total revenue, and the basis on which tax is computed and dividend is paid. Profit is reflected as a reduction in liabilities, increase in

assets, and an increase in owners' equity. It furnishes resources for investing in future operations, and its absence may result in the extinction of a company. Prasanna (2002) added that profit is earned with the help of capital invested in business and it is a measurement of management's performance. The term profit is synonymous to income, earnings and surplus; and as a phenomenon, it has a different meaning to different disciplines.

Profit in economics, is defined in different ways. Marshall (1952) sees profit as the residue after outgoings belonging to productions have been deducted from its gross profit. In this definition, the idea of tax to government is not considered neither is dividend to share holders nor interest on capital. Another important definition from an economist is the definition given by Hicks (1950) where profit is considered to be a feeling of well being after the maximum value that can be consume by man during a week and still remain well of at the end of the week just as he was at the beginning of the week. This definition takes into consideration all commitment a firm or individual may have and after meeting such, is not poorer as an individual and capital is maintained as a firm.

The concept of profit in accounting is not only about quality of satisfaction as in the economics, values measurement and figures are of importance as well as timeframe, usually referred to as accounting period. Profit in accounting is more than satisfaction; it is about value creation and how a firm could maintain it. Profitability is a measure of evaluating the overall efficiency of the business using input-output analysis (Bello, 2008). Profitability can be measured by relating output as a proportion of input or matching it with the results of other firms of the same industry or results attained in the different periods of operations. For this study, the concept of matching effort with accomplishments best explains profit and profit is the residue which owners can share after all necessary deductions have been made

According to Lynch (1983) profitability of a firm can be evaluated by comparing the amount of capital employed (input) with income earned (output). Advancement to the concept of profitability is the concept of Social profitability. Along with the basic objective of earning profits, a business is also required to contribute positively to the environment they reside. This social responsibility has its contribution to the firm's profitability. Where social services are provided for the communities, a firm enjoy peace and stability, raw materials and labour from the community. The community service might be viewed as profit reducing activity but the goodwill of the firm at the long run will increase and generally, the profitability (Lynch 1983).

Profit being an absolute figure fails to indicate the adequacy of income or changes in efficiency resulting from financial and operational performance of an enterprise. In other to

relate this absolute figure of profit to historical or inter firm comparison, a quantitative relationship is established either in the form of ratios or percentages to adequately aid comparison. Such ratios are regarded as profitability ratios (James & John, 2005).

Thus, profitability may be regarded as a relative term measurable in terms of profit and in relation with other elements that can directly influence the profit of an enterprise such as asset, equity contribution; leverage and other investment e. t. c. Profitability is the ability of a firm to make profit from all its business activities. It shows how efficiently the management can make profit by using all the resources available in the market and as oppose to the absolute figure of profit, it is a relative concept that makes use of ratios or percentages in explaining how viable a business is. Profitability denotes whether profits are constant, improved, deteriorated, how and to what extent they can be improved (Kuchhal, 1993; Pandey, 1980).

2.7 Measurement of Profitability

Profitability as a performance mechanism is hard to measure. Similarly, it is questionable as well as subjective what firm characteristics or financial data is more efficient to use for measuring firm performance. Existing approaches primarily differs on the basis whether researchers look at financial prosperity or market performance of the firm. Financial prosperity refers to profitability that demonstrates a company's overall efficiency and performance and it can be expressed using different method and ratios. Majed, Said and Firas (2012) defined financial ratio as a relationship existing between two individual quantitative financial information connected with each other in some logical manner. This connection is considered as a meaningful financial indicator, which can be used by different financial information users. Any financial ratio might be useful and meaningful if it is compared with other related meaningful information, at present or past with similar indicators either for the same firm or for similar firms in the same industry. Although financial ratios are considered useful and practical in financial analysis, Majed *et al* (2012) cautioned that these financial ratios should be interpreted and analyzed in a rational manner with caution taken into consideration of the limitations of these financial ratios in order to get the expected meaningful result from it. Some of the commonly used measures of profitability are discussed below.

Gross profit margin: this profitability index shows the percentage of what a company's sales revenue would be after deducting the cost of goods sold (Elio, 2010). This is important as it helps to determine whether the company would still have enough funds to cover operating expenses such as employee benefits, lease payments, advertising, etc. A company's gross profit margin may also be viewed as a measurement of production efficiency. However,

a company with gross profit margin higher than that of its competitors, or the industry average, is deemed to be more efficient and is therefore, preferred (Elio, 2010; Module 6A, **n.d**). It is calculated as sales less cost of goods sold divided by sales. This measure does not take into consideration the contribution of asset or management effort in making profit. Products sales require the effort of production through the use of machineries and management's decision on the best source of capital needed to finance the operation.

Net profit margin: this indicates the percentage a company's sales revenue would be after all costs have been taken into account (Elio, 2010). This is best compared with other companies in the same industry and analysed over time, considering that variations from year to year may be due to abnormal conditions. Furthermore, Elio (2010) stated that a declining net profit margin ratio may indicate a margin squeeze possibly due to increased competition or rising costs. It is calculated by dividing net income by sales (Elio, 2010; Module 6A, **n.d**). This measure of profit is limited to the contribution of sales proceed thereby too myopic in nature.

Return on assets: this is generally referred to as ROA; it is a measure of management performance. A higher ROA indicates to an investor that management performance at using asset to generate income is efficient (Pandey, 2004). A rising ROA, for instance, may initially appear good, but turn out to be unimpressive if other companies in the same industry have been posting higher returns and greater improvements in ROA. A company should produce an ROA higher than the risk free rate of return to be rewarded for the additional risks involved in operating the business. If a company's ROA is equal or less than the risk free rate, investors might not be attracted and rather purchase a bond with guaranteed returns. This measure of performance takes into consideration the effect or contribution of organisation asset toward net income. Abor (2007), Chen, Cheng and Hwang (2005) and Gleason, Mathur and Mathur (2001) calculated it as net income divided by total asset.

Return on equity: usually referred to as ROE, is another profitability indicator, which measures managements performance. ROE shows the investor how well a company has used the capital from its shareholders to generate profits. Similar to the ROA ratio, a higher ROE denotes a higher level of management performance. As profitability ratio, Ali and Iman (2011) and Firer *et al* (2004) defined it as net income divided by the value of shareholders equity. Bardia (2008) added that the best way to keep shareholders to stay invested in a firm is by giving them a good return for their investment.

Earnings per share: firms earnings per share (EPS) measures earnings in relation to every share on issue. This profitability ratio is important to share holders because; it indicates how

much each share owned has earned at a particular period. As part owner of the company, the EPS gives the shareholder a vivid view of what his contribution has earned him and as earnings go up over time, the value of that company shares in the exchange market will rise. Where earnings rise consistently over the long term, then the share price will follow. This measure considers the need of equity holders, which is the return on their capital contribution and how it drives the market value of their shares. Ali and Iman (2011) see EPS as that which indicates how much earning is created on per share; it is calculated as net income divided by number of shares outstanding.

Return on Investment (ROI): is the percentage of return, based on the amount invested in a business by its owners. According to an article published by Queensland government (n.d), after ROA the most important profitability ratio from the balance sheet is Return on Investment. This ratio tells whether all the effort and time put into the business has been worthwhile. If the ROI is less than the rate of return on an alternative risk free investment, then it may be wise to find other investment options. According to an article, Accountancy (module 6A, analysis of financial statements); this profitability measure considers income earned and investment made; it is basically an investment efficiency measure that shows the overall value of an organisation. Investment in this sense is regarded as the capital employed. It is arrived at by dividing profit before interest and tax i.e EBIT with capital employed (Qasim & Muhammad, 2010).

It is worthy to know that there are multiple measures for firms' profitability depending on the motive and objective of the firm. In research, there is no one best method of profitability measure; as found in empirical studies. The appropriate measure of profitability depends on the performance concept selected. However, in this research work, mechanisms for measuring profitability are proxy as Return on Asset (ROA), Return on Equity (ROE) and Earnings per Share (EPS). Aside from these variables been widely used in previous studies like Bettis and Hall (1982); Dansetz and Lehn (1985); Habib and Victor (1991); Mehran (1995); Ang, Cole and Lin (2000); Margaritis and Psillaki (2006); Rao, Yahyaee and Syed (2007); Qasim and Muhammad (2010); Ali and Iman (2011); Abdul (2012); Muhammad *et al* (2012) and Osuji and Odita (2012). They are measurements on management's view of profit to the organisation and shareholders views of profit accrued to them. The market based financial performance, Tobin's Q extensively used in empirical literature has been highly criticised by researchers, as a noisy signal and not a good measurement for performance (Xu & Wang, 1997 and Zeitun & Tian, 2007) cited in Onaolapo and Kajola (2010). Hence, the effect of Leverage (measured by total debt to total asset (TDTA), Long-term debt to total asset (LTDTA) and short-term debt to total asset (STDTA)) on profitability, measured by ROA, ROE and EPS is the bane of this study.

2.8 Leverage and Profitability

As there many variables in the capital structure mix, so are there many conclusions that could be reached by different researcher. Zeitun and Tian (2007) findings is that firm's capital structure have a significant and negative impact on the firm's performance measures in both the accounting and market measures and that, the short-term debt per total asset has a significant relationship with the market performance measure (Tobin's Q). Huang and Song, (2006) studying China firms, found a negative correlation between leverage and performance. Booth et al., (2001) and Chakraborty (2010) found negative relationship between capital structure and performance.

Ebaid (2009), studying the influence capital structure has on performance in Egypt, representing financial performance with Return on asset, Return on equity and Gross margin while representing capital structure with short term debt, long term debt and total debt to total asset. The finding shows that capital structure has weak-to-no influence on the financial performance of listed firms in Egypt. While studying Ghanaian firms over the period 1998-2002, Abor (2005) reported that positive relationship, exist between capital structure and performance. Akintoye (2008) investigated sensitivity of performance to capital structure on Food and Beverage Company in Nigeria, the result shows that performance indicators of turnover (Earnings before Interest and Taxes, Earnings Per Share and Dividend Per Share) are significantly sensitive to the measures of leverage (Degree of Operating Leverage, Degree of Financial Leverage and Degree of combined leverage).

Osuji and Odita (2012) examined the impact of capital structure on financial performance of Nigerian firms using a sample of thirty non-financial firms listed on the Nigerian Stock Exchange during the seven (7) year period, 2004 – 2010. Panel data for the selected firms were generated and analyzed using ordinary least squares (OLS) as a method of estimation. The result showed that a firm's capital structure surrogated by Debt Ratio (DR) has a significantly negative impact (1% level of significance) on the firm's financial measures proxy by Return on Asset (ROA) and Return on Equity (ROE).

Uwalomwa and Uadile (2012) investigated the relationship between capital structure and financial performance of listed firms in Nigeria. The study considered a total sample of 31 listed firms on the floor of the Nigerian stock exchange. Analyzing the annual report of the selected firms for five (5) years spanning from 2005 - 2009 with the aid of Ordinary Least Squares (OLS) technique of model estimation. The study observed that two of the explanatory variables in the study (i.e. short-term debt and shareholders' funds) have a significant positive impact on the financial performance (ROA) of the selected firms. This consequently suggested that short-term debt tends to be less expensive; and therefore increasing short-term debt in capital structure will lead to an increase in performance levels of firms. While observing long-term debt and financial performance, the study observed that

long-term debt has a significant negative impact on the financial performance of firms. This suggested that long-term debt is relatively more expensive due to certain direct and indirect costs associated with it. The study concluded that employing high proportion of long-term debt in firms' capital structure will invariably result in a low financial performance of a firm and short-term debt is a preferable source of financing for profitable firms.

Abdul (2012) studied listed engineering firms on Karachi stock exchange in Pakistan for 2003-2009. The study used pooled least square regression to analyze the data generated from 36 selected firms with the purpose of finding out the relationship existing between capital structure decision and firm performance in the developing market economies. The findings of the study shows that financial leverage measured by short term debt to total assets (STDTA) and total debt to total assets (LTDTA) has a significant negative relationship with the firm performance measured by Return on Assets (ROA), Gross Profit Margin (GM) and Tobin's Q. The relationship between financial leverage and firm performance measured by the return on equity (ROE) is negative but insignificant. Asset size has an insignificant relationship with the firm performance measured by ROA and GM but negative and significant relationship exists with Tobin's Q. The study added that firms in the engineering sector of Pakistan are largely dependent on short-term debts, which are attached with strong covenants, which affect the performance of the firm.

Muhammad, Zaighum, Saeed and Muhammad (2012) examined the impact of capital structure on firms' financial performance in Pakistan. Their study used Exponential generalized least square regression to test the relationship existing between capital structure represented by Current Liabilities to Total Asset, Long term Liabilities to Total Asset and Total Liabilities to Total Asset and financial performance proxy by Earning before interest and tax, (EBIT), Return on Asset (ROA), Earnings per Share (EPS), Net profit Margin (NPM), Price earnings ratio (PE) and Return on Equity (ROE). Sixty-two (62) companies from the Karachi Stock Exchange were selected for a period of four years spanning from 2006 to 2009. The regression results showed that all the three variables of capital structure, negatively impacts on EBIT, ROA, EPS, and NPM. Price Earnings ratio was found to be negatively related with Current Liabilities to Total Asset and positively related with Long Term Liabilities to Total Asset, while the relationship with Total Liabilities to Total Assets is insignificant. The results also indicated that ROE has an insignificant impact on Current Liabilities to Total Asset and Total Liabilities to Total Assets. While a positive, relationship exists between ROE and Long Term Liabilities to Total Asset.

Ali and Iman (2011) examined the relationship between capital structure and firm performance, with evidence from Iran companies. The study uses four performance measures, which includes return on assets, return on equity, earning per share, and Tobin's Q as

dependent variable and three capital structure measures, which includes long-term debt, short-term debt and total debt ratios as independent variable. The investigation is performed using panel data procedure for a sample of 320 listed companies in the Tehran Stock Exchange (TSE) over the period of eight years spanning from 2002-2009. The results indicated that firm performance, measured by EPS and Tobin's Q, is significantly and positively associated with capital structure and a negative relationship exist between capital structure and ROA. Their result also showed that the relationship between ROE and capital structure is insignificant. The conclusion of their study showed a mix relationship between capital structure and firm performance.

Chandrakumarmangalam and Govindasamy (2010) studying seven (7) India cement companies for a period of 8 years 2003-2010 with the major objective of understanding and analyzing the impact of leverage on the profitability of selected firms. The study investigated the relationship between leverage (financial leverage, operating leverage and combined leverage) and earnings per share. Selected Cement companies are analyzed using one way ANOVA and t-test. The correlation result of the study showed that there is a negative and positive relationship between financial leverage and EPS among the sampled firms. The result also showed that operating leverage is negatively correlated with EPS for all the sampled firms. The results suggest that the leverage and profitability and growth are related and that leverage is having impact on the profitability of the firm. The study concluded that fixed operating expenses and financing mix decisions of the firm are significantly influential on the earning capacity of the firm and leverage effect is positive when the earnings of the firm is higher than the fixed financial charges to be paid to creditors. The leverage is an important factor which is having impact on the profitability of the firm and the wealth of the shareholders can be maximized when the firm is able to employ more debt.

Qasim and Muhammad (2010) studied the impact of leverage on profitability measured by Return on Asset (ROA), Return on Equity (ROE), Return on Investment (ROI) and Earnings per Share (EPS). The study seeks to analyze and understand the effect of leverage on the profitability of the oil and gas sector in Pakistan. Using Correlation analysis and test of significance with one way ANOVA, the study analyzed Eight (8) public limited companies for a period spanning from 2004-2009. The findings of the study showed that negative relationship exist between DFL and EPS, a positive relationship between DOL and EPS. ROA showed a negative relationship with DFL and positive relationship with DOL. ROI is negatively related to both DFL and DOL while ROE showed a positive relationship with both DFL and DOL.

Consistent with previous studies, there exist a relationship between capital structure and performance but the type of relationship varies from positive to negative, weak to strong and

significant to insignificant. Some of the factor that could be responsible for the conflicting result is the length of time for studied variables. As found in empirical studies, a period less than ten years might not be adequate for the phenomenon to form a pattern; hence this study make use of data that spans to ten-year period unlike prior research works like Osuji and Odita (2012), Uwalomwa and Uadile (2012), Abdul (2012) etc.

It was also observed that previous researches like Osuji and Odita (2012), Uwalomwa and Uadile (2012), Muhammad *et al* (2012), Ali and Iman (2011) amongst others made use of multiple sectors, which have firms with different inherent risk and behaviours different from one another. The study of multiple sectors will not give accurate and adequate information on how leverage can affect profitability. The researcher believed that sector specifics might have affected the result of previous studies; this study considers industry specifics and uses data from a particular sector because they are exposed to the same risk, open to the same market and they are likely to have the same type of tangible asset base. The effect of leverage on their profitability will be better reflected because of firms' similarities and adequate inference could be made.

Previous research have employed methods of data analysis like ANOVA (Qasim and Muhammad 2010; Chandrakumarmangalam and Govindasamy 2010), OLS (Abdul 2012; Ali and Iman 2011) but they have not taken into consideration the panel data peculiarities such as heterosckedacity among variables. This study used robust OLS as technique of analysis to address issues of heterosckedacity and considered the variance inflation factor (VIF) to check for harmful collinearity among variables.

With regards to timeliness of research, data used should be such that gives a reflection of recent occurrence for the benefit of making informed decision. Hence, the need for our study using recent data and observations from a single sector of the economy with wider time span.

2.9 Theoretical Framework

In response to diverse conflicting ideas to the theory that best explains leverage usage in the capital structure of a firm, researchers have come up with many theories after the seminal work of Modigliani and Miller 1958, which serves as a departure point for many. However, some of the theories to be discussed are the agency cost theory and static trade off theory.

According to Copeland, Weston and Shastri (2005), Agency theory stems from the fact that managers, who are considered agent of the investors makes decisions that, could put the

investors at risks that are unprecedented and this could lead to conflicts of interest between managements and investors. Kyereboah-Coleman (2007) further explained that where managers have information regarding future prospects of the company uses such information for interest that suits them, which are different from that of shareholders that it leads to agency cost. Jensen (1986) added that separation of ownership and control of firms usually brings about conflict between stakeholders (equity holders, debt holders and managers).

Moreover, greater use of financial leverage as argued by Grossman and Hart (1982) and Williams (1987) may affect managers and reduce agency costs through the threat of bankruptcy and liquidation which is sure to result in personal losses for managers. The use of debt financing is likely to curtail overinvestment because interests need to be paid. This will also increase managers' pressure to generate more cash flow to pay interest expenses and prevents managers from investing in negative net present value projects (Fleming, Heaney & McCosker, 2005). Furthermore, Hart and Morre, (1998) and Hunsaker (1999) added that compared to the issue of new equity, debt also helps to discipline managers' behaviour because they give managers a chance to share in a firm's profits in case of good performance and thus reduces the monitoring costs.

Frank and Goyal (2004) argued that firms decide to trade off the benefit of debt especially that of tax savings and reduced agency problems against the actual cost of debt and bankruptcy risk. Modigliani and Miller (1963) also suggested that firms with higher profits should use more debt, thus substituting debt for equity to take advantage of interest induced tax shields.

The trade-off theory predicts that safe firms, i.e. firms with more tangible assets and more taxable income to shield should have high debt ratios. According to Myers (2001), trade-off theory places much significance on taxes. It argued that a firm seeks debt levels that will balance tax advantages of additional debt against the odd of financial distress. While in reality, most profitable firms tend to borrows less in order to retain financial flexibility as Pandey (2004) explained.

However, Bevan and Danbolt (2002) suggested that a high level of profit would give rise to a corresponding higher debt capacity and accompanying tax shields and that big firm are seen as too big to fail. Hence, it is expected that a positive relationship should exist between profitability and financial leverage. Firms with high levels of tangible assets like the Healthcare firms will be in a position to provide collateral for debts. On the occurrence of a default on debt repayment, assets used as collateral may be seized while giving the company an opportunity to avoid bankruptcy.

For the sake of this research work, the Static trade off theory is chosen as the theoretical framework. The theory seeks to attain an optimal capital structure using debt and equity in a balanced proportion. The use of debt due to tax shield advantage is postulated as a reason why management favours its use. The theory also proposed that firms with high tangible asset will have the capacity to engage more debt in their capital structure, the Nigerian Healthcare firms are characterised with high tangible asset hence, their capacity to use more debt. The theory seeks to maximize shareholders wealth by shielding firms profit from taxation thereby increasing the firms' total value. Hence, the theory expects that profit will promote the use of leverage in firms capital structure, and expect leverage to have a positive impact on profitability of listed healthcare firms in Nigeria.

2.10 Summary

The chapter reviews the concept of capital structure with emphasis on leverage as a major component, the concept of profitability is also discussed while empirical studies are reviewed. The chapter also discusses major theories explaining the use of leverage in firms capital and chooses the best theoretical framework that underpins the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the design of the study, population of study, methods of data. The methodology adopted for assessing the impact of leverage on profitability of listed healthcare firms in Nigeria is also highlighted as well as the technique of data analysis and justification of the method and technique employed.

3.2 Research Design

In pursuance of the objectives of this study, correlation research design is adopted, because relationship among variables can easily be estimated using correlation design. As such, this study used the design in order to study the effect of Leverage on profitability of listed Healthcare firms in Nigeria using Total debt to total asset (TDTA), Long-term debt to total asset (LTDTA) and Short-term debt to total asset (STDTA) as proxy for leverage and ROA, ROE and EPS as proxies for profitability.

3.3 Sources and Method of Data Collection

The study uses data, which are obtained purely from secondary sources. The data used for the study were extracted from Nigerian Stock Exchange (NSE) fact book and annual financial statements of the sampled companies for the period of ten years (2004 to 2013). The NSE fact book and the annual financial statements of sampled companies are reliable secondary sources because, the annual financial statements requires the attestation of an external auditor, and the information supplied in the fact book are scrutinized by the Security Exchange Commission (SEC) before its publication. Since the study requires the use of financial ratios that can only be generated using secondary sources, primary sources of data collection are not applicable for this study.

3.4 Population and Sample Size

The population of the study constitutes all Healthcare firms listed on the Nigerian Stock Exchange as at December 31st 2013. While adopting the census strategy, which makes the entire listed Healthcare firms eligible to be a member of the sample size, for a company to be part of the sample firms, it must satisfy the following criteria.

- A company must be listed on the Nigerian Stock Exchange during the last ten years under study, which is from 2004 to 2013.
- Published financial statements must be filed with the NSE for the years under study.
- All required data for the study must be available i.e. financial statements that aids in arriving at the financial ratios to be used for the study.

According to the NSE Fact Book (2012/2013) there are ten (10) healthcare firms listed on the Nigerian Stock Exchange as at 31st December 2013. The firms are as follows; Ekocorps Plc., Evans Medical Plc., Fidson Healthcare Plc., Glaxo Smithkline Consumer Plc., May and Baker Plc., Morison Industries Plc., Neimeth International Pharmaceuticals Plc., Nigeria-German Chemicals Plc., Pharma-Deko Plc. and Union Diagnostic and Clinical services Plc. Only firms that conform to the above criteria were eligible to form the final sample for this study. This study excluded firms like Ekocorps Plc., Union Diagnostics and Clinical services Plc. and Nigeria-German Chemicals Plc. based on criteria two and three. Hence, the impact

of leverage on profitability of healthcare firms in Nigeria is based on the information obtained from these seven firms.

3.5 Model Specification

In order to achieve the objectives and to test the hypotheses of the study, a functional relationship between the dependent and independent variables are presented in the following multiple regression models. Firm Size is introduced into the models as control variables as it has been proven to have significant effect on leverage as enunciated by Shehu (2011), Huang and Song (2006). The study adopted the models used in Ebaid (2009) and Abdul (2012) because it helps to avoid collinearity among measures of leverage. Hence, the study estimated the following multiple regression models, one for each of the leverage measures to test the hypotheses:

$$\text{Profitability}_{it} = \beta_0 + \beta_1 \text{TDTA}_{it} + \beta_2 \text{FSIZE}_{it} + \varepsilon_{it} \quad \text{---------- (1)}$$

$$\text{Profitability}_{it} = \beta_0 + \beta_1 \text{LTDTA}_{it} + \beta_2 \text{FSIZE}_{it} + \varepsilon_{it} \quad \text{---------- (2)}$$

$$\text{Profitability}_{it} = \beta_0 + \beta_1 \text{STDTA}_{it} + \beta_2 \text{FSIZE}_{it} + \varepsilon_{it} \quad \text{---------- (3)}$$

Where:

$\text{Profitability}_{it}$ = f (ROA, ROE, EPS)

ROA_{it} = Return on Asset for firm *i* at a period *t*.

ROE_{it} = Return on Equity for firm *i* at a period *t.*

EPS_{it} = Earnings per Share for firm *i* at a period *t.*

TDTA_{it} = Total debt to total asset for firm *i* at a period *t.*

LTDTA_{it} = Long-term debt to total asset for firm *i* at a period *t*.

STDTA_{it} = Short-term debt to total asset for firm *i* at a period *t*.

FSIZE_{it} = Natural logarithm of total asset for firm *i* at a period *t.*

ε_{it} = Error Term for firm *i* at a period *t*.

While, β_1, β_2 are parameter estimates and β_0 is the Intercept.

3.6 Variable Measurement

The dependent variable for the study is Profitability, which is proxy with Return on asset (ROA), Return on Equity (ROE), Return on Investment (ROI) and Earnings per Share (EPS) and they are measured as follows:

Return on Asset (**ROA**) is calculated as net income divided by book value of total assets as presented in the financial report it served as proxy for profitability in Chen *et al*, (2005); Abor, (2007) and Michel, Francois-Eric & Jean-Yves, (2011). Net income here is profit after interest and tax, while total asset is the addition of fixed asset and current asset. This measure of profitability shows the proportion of earnings that is been derived from each use of Naira of assets under organization's control.

Return on Equity (**ROE**) is calculated as net income divided by shareholders' fund as presented in the financial report as used in Michel *et al,* 2011 and Elio, 2010. Where net income, is income available to shareholder after deductions of interest and tax. Shareholder's fund is derived from the addition of equity share capital, reserves and accumulated profits. It can also be computed by deducting total debt from total asset. This ratio indicates how profitable a firm is using the capital contribution of equity holders; it measures how much shareholders can earn for their capital contribution.

Earnings per Share (**EPS**) is calculated as Net income divided by the number of outstanding ordinary shares (Ali & Iman, 2011 and Pamela, **n. d**). Net income is profit remaining after tax and interest.

The independent variable for this study is Leverage which is proxy by Total debt to total asset (TDTA) calculated as total debt divided by total asset. Long-term debt to total asset (LTDTA) calculated as long-term debt divided by total asset. Short-term debt to total asset (STDTA) calculated as short-term debt divided by total asset. These measures are used in Abdul, 2012; Iorpev and Kwanum, 2012; Ramachandran and Packkirisamy, 2010; Ebaid (2009) and Abor, 2005.

These measures of leverage are based on book value and they are easily obtained from the financial statements of listed healthcare firms in Nigeria. Another reason for the use of book value as pointed out by Fama and French (2000), Thies and Klock (1992) is that financial managers focus more on book values than market values when designing their financial structure because bank loan covenants are written in terms of book value.

Size introduced as control variable was calculated as the natural logarithm of total asset, this measure was as used in the work of Abdul (2012), and Rajan and Zingales (1995). Larger firms are likely to take on more debt than smaller firms are and providers of capital will consider firms with higher tangible asset for debt because their asset cushions the risk of bankruptcy. Frank and Goyal (2003) opined that larger firm will have more capabilities and resources to achieve economies of scale and as such more diversified. Size as a variable has been reported to have a significant effect on leverage (Shehu, 2011 and Sanda, Garba & Mikailu, 2008).

3.7 Techniques of Data Analysis

Robust ordinary least square regression was employed to estimate the effect of the independent variables on the dependent variable. Robust OLS helps to curb the effect of heteroskedascity that is usually found among panel data variables of this nature (Skoulakis 2006; Gujarati 2004; Green 2002, 2001). Variance inflation factor (VIF) was also considered to examine the level of multicollinearity among the variables. Descriptive statistics and the Pearson moment correlation were also conducted and all analysis are carried out using Statistical package for social sciences (SPSS) version 16 and Stata software, version 11.

3.8 Summary

The chapter examines the research design adopted for the study; the methods of data collection as well as its sources are explained. Models for the study were stated and the variables employed were explained as well as methods of measuring them. Thereafter, method of data analysis using robust OLS was explained and its use properly justified.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the results of data gathered in the course of this research and further discusses the results. The result is discussed in three main part based on specific objectives of the study. Each part of the discussion explains why the result should be accepted and relied upon by detailed explanation of issues that relates to regression. The result thereafter is used to test the hypotheses formulated for the study. In order to examine the effect of leverage on profitability, we will consider the results in the tables below.

4.2 Descriptive Statistics and Correlation Result

This section presents all the descriptive statistics of all the variables used in this study and their correlation result. Table 4.1 shows descriptive summary of both the dependent and independent variable using minimum, maximum, mean, skewness and kurtosis statistic. Table 4.2 presents the correlation result showing the type of relationship existing among variables and how significant they are.

Table 4.1: Summary of Descriptive Statistics

	N	Minimum	Maximum	Mean	Skewness	Kurtosis
Return on Asset	70	-0.53	0.38	0.0473	-1.057	3.219
Return on equity	70	-0.31	2.32	0.4524	1.916	3.451
Earnings per share	70	-3.97	2.57	0.2107	-2.452	11.607
TDTA	70	0.03	2.32	0.4767	2.464	7.464
LTDTA	70	0.01	1.72	0.2725	2.774	9.928
STDTA	70	0.02	1.07	0.2042	2.598	9.130
Fsize	70	22.71	29.42	26.9764	-0.673	-0.299
Valid N	70					

Source: SPSS Result

Table 4.1 shows that observations for each variables are 70 and none of the variables observed have missing values i.e all values are valid. The minimum value of return on asset for the industry is -0.53, return on equity -0.31, earnings per share -3.97, TDTA 0.03, LTDTA 0.01, STDTA 0.02 and Fsize 22.71. The maximum value of return on asset 0.38, return on equity 2.32, earnings per share 2.57, TDTA 2.32, LTDTA 1.72, STDTA 1.07 and Fsize 29.42. The mean value for return on asset 0.0473, return on equity 0.4524, earnings per share 0.2107, TDTA 0.4767, LTDTA 0.2725, STDTA 0.2042 and Fsize 26.9764. The result further indicates the presence of skeweness and leptokurtosis in the data. All the variables are positively skewed except for ROA, EPS and Fsize, which are negatively skewed. The values of the kurtosis exceeded 3 the kurtosis of normal distribution. The presence of skewness and kurtosis indicates that the observations are not normally distributed. From this result, we can

deduce that healthcare firms maintain a reasonable level of total debt of about 48% and that the long-term debt is used more than short term-debt.

Table 4.2 Summary of Correlation Result

	ROA	ROE	EPS	TDTA	LTDTA	STDTA	Fsize
ROA	1						
ROE	.009	1					
EPS	.534**	-.294*	1				
TDTA	-.073	-.004	-.036	1			
LTDTA	-.036	.050	-.019	.951**	1		
STDTA	-.116	-.089	-.054	.876**	.685**	1	
Fsize	.126	.185	-.091	.179	.141	.203	1

Source: SPSS Result ** Significant at 1%, * Significant at 5%

Table 4.2 above shows that return on asset has positive but no significant association with return on equity and return on investment and Fsize. It also shows that Return on asset has a negative but insignificant relationship with TDTA, LTDTA and STDTA, while a positive and significant relationship with EPS at a significance of 1%. Return on equity is negatitively related with EPS at a significance of 5%, while TDTA, LTDTA, STDTA and Fsize have no significant relationship. Earnings per share have an insignificant negative relationship with TDTA, LTDTA, STDTA and Fsize. TDTA has a positive significant relationship (1%) with

LTDTA and STDTA while the relationship with Fsize is insignificant. LTDTA has a significant positive relationship with STDTA while Fsize has no significant relationship. The result also shows that STDTA has no significant relationship with Fsize.

4.3 Results and Discussions

The robust OLS employed as tool for analyzing the regression models to curtail heterosckedacity among the variables. The result is therefore explained based on the profitability measures used for this study. R-squared value in the following results is low because leverage is measured by three variables, TDTA, LTDTA and STDTA and are used as a single independent variable. There are in total, three regressions for each of the dependent variable (ROA, ROE and EPS) reflecting the three leverage measures.

Table 4.3: Leverage and profitability measured by ROA

Variable	Model 1	Model 2	Model 3
TDTA	-0.10762 (0.122)		
LTDTA		-0.1014944 (0.323)	
STDTA			-0.3539419 (0.003)
FSIZE	-0.0433388 (0.000)	-0.0458005 (0.000)	-0.0405487 (0.000)
R^2	0.3370	0.2894	0.4087
F statistic	8.95	8.04	14.63
F Significance	0.0004	0.0007	0.0000
VIF	1.03	1.02	1.04

Source: Stata Result

Table 4.3 above shows that the models are fit considering the F significance of 0.0004, 0.0007 and 0.0000 for TDTA, LTDTA and STDTA respectively. The R-square for the models shows the overall strength and the proportion of variance in dependent variable that can be explained by the set of independent variables. Hence, TDTA explains 34% of the variation in ROA, LTDTA explains 29% of the variation and STDTA explains 41% of the

variation, based on the individual models. The VIF values of 1.03, 1.02 and 1.04 indicates that there is no harmful Collinearity problem among variables.

Having ascertained the fitness of the models using the F significance the individual coefficient of the independent variables can now be explained. From the result, TDTA of listed healthcare firms have a negative coefficient value of -0.10762 (0.122) which is not significant. LTDTA show an insignificant but negative value of -0.1014944 and STDTA shows a negative value of -0.3539419 (0.003) which is significant at 5% level of significance. Fsize have a coefficient of -0.0433388, -0.0458005 and -0.0405487, all significant at 1% for TDTA, LTDTA and STDTA respectively.

From all the measures of leverage employed for this study to test ROA, only short-term debt to total asset (STDTA) have a significant negative impact on return on asset of healthcare firms in Nigeria. This indicates that whenever there is a unit increase in STDTA, return on asset value will decrease by 35%. This negative effect is significant considering the t-significance of 0.003, which is significant at 5% level of significance. From this result, we can deduce that increasing the level of short-term debt to total asset in the Nigeria healthcare sector cannot bring desirable result to the firm value considering the fact that it reduces the return on asset by 35%. Meaning that for every one naira increase in short-term debt there will be a corresponding decrease of 35 kobo in return on asset.

Test of Hypotheses Based on Return on Asset

Testing the hypotheses for the study based on ROA; we fail to reject $H_{01,}$ which stated that Total debt has no significant impact on profitability of listed healthcare firms in Nigeria. We do not reject $H_{02,}$ which stated that Long-term debt has no significant effect on profitability of listed healthcare firms in Nigeria. We however reject $H_{03,}$ which stated that Short-term debt has no significant impact on profitability of listed healthcare firms in Nigeria.

Based on the result of this study we state that leverage measured as short-term debt to total asset (STDTA) has a significant effect on ROA of listed healthcare firms in Nigeria and the resulting effect is a negative one. This result is in contrast with the assertions Ebaid (2009) who found that all measures of leverage have an insignificant impact on ROA.the result is in contrast with Nour (2012) that leverage have a positive effect on ROA but confirms the

results of Margaritis and Psillaki (2010); Jong, Kabir and Nguyen (2008); Gaud, Hoesli and Bender (2007); and Osuji and Odita (2012), that the effect of leverage on ROA is negative.

Table 4.4: Leverage and Profitability measured by ROE

Variable	Model 1	Model 2	Model 3
TDTA	0.7401974 (0.000)		
LTDTA		1.220981 (0.000)	
STDTA			1.120716 (0.088)
FSIZE	0.0152331 (0.692)	0.019937 (0.591)	0.0243437 (0.558)
R^2	0.3140	0.3751	0.1395
F statistic	9.90	28.52	1.72
F Significance	0.0002	0.0000	0.1871
VIF	1.03	1.02	1.04

Source: Stata Result

The result in table 4.4 shows that the models for TDTA and LTDTA are fit considering the F significance of 0.0002 and 0.0000 while the model for STDTA is not fit at 0.1871. The R-square for the models shows the overall strength and the proportion of variance in dependent variable that can be explained by the set of independent variables. Hence, TDTA explains 31% of the variation in ROE, LTDTA explains 38% of the variation and STDTA explains 14% of the variation, based on the individual models. The VIF values of 1.03, 1.02 and 1.04 indicates that there is no harmful Collinearity problem among variables.

Having ascertained the fitness of the models using the F significance the individual coefficient of the independent variables can now be explained. From the result, TDTA of listed healthcare firms have a positive significant coefficient value of 0.7401974, which is significant at 1%. LTDTA show a significant and positive value of 1.220981 (0.000) and STDTA shows an insignificant value 1.120716. Fsize have an insignificant coefficient of 0.0152331, 0.019937 and 0.0243437 for TDTA, LTDTA and STDTA respectively.

From all the measures of leverage employed for this study to test ROE, total debt to total asset and long term-debt to total asset have significant positive impact on return on equity of healthcare firms in Nigeria. The result indicates that whenever there is a unit increase in TDTA, return on equity value will increase by 74%. Where there is a unit increase in LTDTA, return on equity will increase by 102%. This positive effect are significant at 1% level of significance. From this result, we can deduce that increasing the level of total debt to total asset and long term debt to total asset in the Nigeria healthcare sector will bring desirable result to the firm value considering the fact that it increases return on equity by 74% and 102% respectively. Meaning that for every one naira increase in total debt there will be a corresponding increase of 74 kobo in return on equity and one naira increase in long term debt will have a corresponding increase of N1.2 kobo on return on equity.

Test of Hypotheses Based on Return on Equity

Testing the hypotheses for the study based on ROE; we reject $H_{01,}$ which stated that Total debt has no significant impact on profitability of listed healthcare firms in Nigeria. We also reject $H_{02,}$ which stated that Long-term debt has no significant effect on profitability of listed healthcare firms in Nigeria. We however do not have sufficient evidence to reject $H_{03,}$ which stated that Short-term debt has no significant impact on profitability of listed healthcare firms in Nigeria.

This result is in contrast with Ebaid (2009) and Abdul (2012) whose study stated a no significant relationship between the measures of leverage and ROE. The study also disagrees with Osuji and Odita (2012) whose study finds a negative effect between the variables. However, the study agrees with Nour (2012), Abor (2005) whose study established a significant positive effect between the variables.

Table 4.5: leverage and profitability measured by EPS

Variable	Model 1	Model 2	Model 3
TDTA	-1.051792 (0.005)		
LTDTA		-1.206753 (0.027)	
STDTA			-2.919457 (0.000)
FSIZE	-0.1071648 (0.039)	-0.1262 (0.038)	-0.0915237 (0.053)
R^2	0.3572	0.2475	0.4526
F statistic	5.52	3.94	9.03
F Significance	0.0060	0.0241	0.0003
VIF	1.03	1.02	1.04

Source: Stata Result

The result in table 4.5 shows that the models for TDTA and STDTA are fit considering the F significance of 0.0060 and 0.0003 while the model for LTDTA is not fit at 0.0241. The R-square for the models shows the overall strength and the proportion of variance of dependent variable that can be explained by the set of independent variables. Hence, TDTA explains 36% of the variation in EPS, LTDTA explains 25% of the variation and STDTA explains 45% of the variation, based on the individual models. The VIF values of 1.03, 1.02 and 1.04 indicates that there is no harmful Collinearity problem among variables.

Having ascertained the fitness of the models using the F significance the individual coefficient of the independent variables can now be explained. From the result, TDTA of listed healthcare firms have a negative significant coefficient value of -1.051792, which is significant at 5%. LTDTA show an insignificant negative value of -1.206753 (0.027) and

STDTA shows a significant negative value of -2.919457 significant at 1%. Fsize have an insignificant coefficient of -0.1071648, -0.1262 and -0.0915237 for TDTA, LTDTA and STDTA respectively.

From all the measures of leverage employed for this study to test EPS, total debt to total asset and short-term debt to total asset have significant negative impact on earnings per share of healthcare firms in Nigeria. The result indicates that whenever there is a unit increase in TDTA, earnings per share value will decrease by 105% and where there is a unit increase in STDTA, earnings per share will decrease by 292%. These negative effects are significant at 5% and 1% level of significance respectively. From this result, we can deduce that increasing the level of total debt to total asset and short-term debt to total asset in the Nigeria healthcare sector will bring negative result to the firm value considering the fact that it reduces earnings per share by 105% and 292% respectively. Meaning that for every one naira increase in total debt there will be a corresponding decrease of N1.5 kobo in earnings per share and for every one naira increase in short-term debt a corresponding decrease of N2.92 kobo on earnings per share will occur.

Test of Hypotheses Based on Earnings per Share

Testing the hypotheses for the study based on EPS; we reject $H_{01,}$ which stated that Total debt has no significant impact on profitability of listed healthcare firms in Nigeria. We do not have enough evidence to to reject $H_{02,}$ which stated that Long-term debt has no significant impact on profitability of listed healthcare firms in Nigeria. We however have sufficient evidence to reject $H_{03,}$ which stated that Short-term debt has no significant impact on profitability of listed healthcare firms in Nigeria.

This result is consistent with the findings of Muhammad, Zaighum, Saeed and Muhammad (2012), Chandrakumarmangalam and Govindasamy (2010) whose study found a negative impact all measures of leverage with EPS. However, the result is in disparity with the findings of Nour (2012), Ali and Iman (2011).

4.4 Discussion of Findings

Listed healthcare firms in Nigeria employs leverage in order to increase profitability following the assumption that the use of leverage should increase the profitability of firm.

From the regression result for each of the models tested, ROA was negatively impacted by all the measures of leverage, although TDTA and LTDTA are insignificant, while STDTA is significant. For ROE, the result shows all leverage measures have positive impact, where TDTA and LTDTA are significant and STDTA is not significant. Where the focus of management is to generate higher ROE, this study shows that the increase in the level of total debt and long-term debt will favour such objective. The result further shows that EPS receives a negative impact from all the measures of leverage with LTDTA showing an insignificant impact. This also shows that where the focus of management is towards increasing EPS, consideration should be given towards reducing the level of short-term debt and total debt in the firm's capital mix. The result shows that the chances of having a negative impact is higher and though there are chances of receiving a positive impact from leverage, we advice management of healthcare firms to use leverage with high caution.

4.5 Policy Implication of Findings

Giving that this result is a mixture of both positive and negative effect of leverage on profitability measures, we can deduce that listed healthcare firm in Nigeria during the period of study might have been enjoying less from their use of leverage. Management need to be careful so as not to over stretch the balance between debt and equity in their firms' capital structure. Where leverage appears to be over stretched, the cost of capital might increase and have a negative impact on profit. Myers and Majluf (1984) and Iorpev and Kwanum (2012), opined that increasing the proportion of debt in the company's capital structure, would increase profitability up to a point after which a further increase in leverage, would increase the company's overall cost of capital and will cause a decline in its total market value.

This research suggest that government and policy makers (Central Bank of Nigeria) should review and lower interest rate from a two digit figure of 12% so as to enable healthcare firms have access to cheaper source of fund to develop standard healthcare facilities, create more wealth and employment opportunities which in turn will affect the economy in a positive way.

4.6 Summary

The chapter presented the result and discussions of findings of data analyzed for the study. It presents the descriptive statistic followed by the summary of correlation result. The main issue discussed were the result of the robust OLS for each of the regression models. The results were used to test the formulated hypotheses for the study and policy implication of the result was finally discussed.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study examined the effect leverage has on profitability of listed healthcare firms in Nigeria and the study is structured under five chapters. Chapter one introduced and explained the subject matter of leverage and profitability, problems which the study wish to address was also stated, while the main objective of the study is to examine the impact of leverage on profitability of listed healthcare firms in Nigeria. However, three specific objectives were drafted and that led to three null hypotheses been formulated. The scope of the study spans from 2004 to 2013. Chapter two focused on concepts of capital structure with emphasis on leverage as a key component, theoretical factors leading to the use of leverage were also discussed. Concepts of profitability were discussed and related empirical works were reviewed. Chapter two concludes by briefly discussing related theories while adopting static trade-off theory to underpin the study.

Chapter three is captioned research methodology, the study adopted correlational research design for the study, methods of data collection was discussed and secondary method was chosen due to the use of financial ratios. Models for the study were stated and variables for the study were explained as well as their measurement. The population for the study is ten (10) listed healthcare firms in Nigeria while the final sample used for the study are seven (7)

firms due to the filter criteria used. The method of data analysis i.e robust ordinary least square was explained and its usage duly justified. Chapter four presents the results of the data analysed in form of tables for descriptive statistics, correlation among variables and robust OLS. The formulated hypotheses for the study were tested based on the measures of profitability used. Major highlight of the result shows that leverage measured as total debt to total asset (TDTA) has a significant positive impact on ROE and a significant negative impact on EPS of listed healthcare firms in Nigeria. Leverage measured as long-term debt to total asset (LTDTA) has a significant positive impact on ROE of listed healthcare firms in Nigeria. Leverage measured as short-term debt to total asset (STDTA) has a significant negative impact on ROA and EPS of listed healthcare firms in Nigeria.

5.2 Conclusions

In relation to the result of this study and based on the hypotheses tested, the study has the following conclusions:

Firstly, leverage measured as total debt to total asset (TDTA) has a significant positive impact on ROE and a significant negative impact on EPS of listed healthcare firms in Nigeria. Hence, with total debt, earnings after interest and tax compounded with shareholders fund would raise return on equity ratio, while total debt, net profit compounded with outstanding units of equity would reduce earnings per share ratio.

Secondly, leverage measured as long-term debt to total asset (LTDTA) has a significant positive impact on ROE of listed healthcare firms in Nigeria. Hence, long-term debt, earnings after interest and tax compounded with shareholders fund would raise return on equity ratio.

Lastly, the study concludes that leverage measured as short-term debt to total asset (STDTA) has a significant negative impact on ROA and EPS of listed healthcare firms in Nigeria. Hence, short-term debt, earnings after interest and tax compounded with total asset would reduce return on asset ratio and where compounded with outstanding units of equity, the ratio of earnings per share would reduce.

5.3 Recommendations

In line with the findings and the conclusions of this study, the following recommendations are suggested.

i. Where the concern of management is geared towards increasing firms return on equity, the study suggest that management of listed healthcare firms in Nigeria should increase the total debt value but if the focus is to increase earnings per share, the study recommends that total debt be reduced. However, management can increase total debt by securing trade credit loan, long-term debentures or loan facilities from banks but if they want to reduce, long-term debt, external equity issue should be used.

ii. The study suggest that management of listed healthcare firms should increase the level of long-term debt so as to increase firms return on equity ratio, this can be done through issuing long-term debentures and securing loan facilities from banks.

iii. The study finally suggests that management of listed healthcare firms in Nigeria should consider reducing the level of short-term debt in their debt structure in order to increase return on asset and earnings per share of their firm. Focusing on long term loan rather than short term debt should be priority for managements and long term loan could be sourced from banks as well as issuing debentures to the public.

5.4 Areas for Future Research

Although this research attempts to create and advance knowledge on leverage and profitability, future research can advance the study by considering other measures of leverage and the effect of these can be tested on profitability measures other than ROA, ROE and EPS. Other sectors of the economy can also be examined to see how they react to capital leverage and profitability issues.

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APPENDIX I

Descriptive Statistics

	N	Minimum	Maximum	Mean	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Return on Asset	70	-.53	.38	.0473	-1.057	.287	3.219	.566
Return on equity	70	-.31	2.32	.4524	1.916	.287	3.451	.566
Earnings per share	70	-3.97	2.57	.2107	-2.452	.287	11.607	.566
TDTA	70	.03	2.32	.4767	2.464	.287	7.464	.566
LTDTA	70	.01	1.72	.2725	2.774	.287	9.928	.566
STDTA	70	.02	1.07	.2042	2.598	.287	9.130	.566
Fsize	70	22.71	29.42	26.9764	-.673	.287	-.299	.566
Valid N (listwise)	70							

APPENDIX II

Correlation Result

		Return on Asset	Return on equity	Earnings per share	TDTA	LTDTA	STDTA	Fsize
Return on Asset	Pearson Correlation	1	.009	.534**	-.073	-.036	-.116	.126
	Sig. (2-tailed)		.942	.000	.549	.767	.339	.298
	N	70	70	70	70	70	70	70
Return on equity	Pearson Correlation	.009	1	-.294*	-.004	.050	-.089	.185
	Sig. (2-tailed)	.942		.014	.973	.679	.465	.126
	N	70	70	70	70	70	70	70
Earnings per share	Pearson Correlation	.534**	-.294*	1	-.036	-.019	-.054	-.091
	Sig. (2-tailed)	.000	.014		.770	.873	.658	.456
	N	70	70	70	70	70	70	70
TDTA	Pearson Correlation	-.073	-.004	-.036	1	.951**	.876**	.179
	Sig. (2-tailed)	.549	.973	.770		.000	.000	.138
	N	70	70	70	70	70	70	70
LTDTA	Pearson Correlation	-.036	.050	-.019	.951**	1	.685**	.141
	Sig. (2-tailed)	.767	.679	.873	.000		.000	.246
	N	70	70	70	70	70	70	70
STDTA	Pearson Correlation	-.116	-.089	-.054	.876**	.685**	1	.203
	Sig. (2-tailed)	.339	.465	.658	.000	.000		.092

	N	70	70	70	70	70	70	70
Fsize	Pearson Correlation	.126	.185	-.091	.179	.141	.203	1
	Sig. (2-tailed)	.298	.126	.456	.138	.246	.092	
	N	70	70	70	70	70	70	70

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

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

APPENDIX III

Stata result

```
. regress ROA TDTA Fsize, robust

Linear regression                               Number of obs =      70
                                                F(  2,    67) =    8.95
                                                Prob > F      =  0.0004
                                                R-squared     =  0.3370
                                                Root MSE      =  .13708
------------------------------------------------------------------------------
             |               Robust
         ROA |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        TDTA |    -.10762   .0686676    -1.57   0.122    -.2446812    .0294411
       Fsize |  -.0433388    .010923    -3.97   0.000    -.0651412   -.0215363
       _cons |   1.267711   .2983206     4.25   0.000     .672261    1.863162
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
```

```
      Fsize |      1.03    0.967986
       TDTA |      1.03    0.967986
-------------+----------------------
   Mean VIF |      1.03
```

. regress ROA LTD Fsize, robust

```
Linear regression                               Number of obs =      70
                                                F(  2,    67) =    8.04
                                                Prob > F      =  0.0007
                                                R-squared     =  0.2894
                                                Root MSE      =  .14192
------------------------------------------------------------------------------
             |               Robust
         ROA |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         LTD |  -.1014944   .1018454    -1.00   0.323    -.3047786    .1017898
       Fsize |  -.0458005   .0115364    -3.97   0.000    -.0688271   -.0227738
       _cons |   1.310469   .3143609     4.17   0.000     .6830024    1.937936
------------------------------------------------------------------------------
```

. vif

```
    Variable |       VIF       1/VIF
-------------+----------------------
       Fsize |      1.02    0.980221
         LTD |      1.02    0.980221
-------------+----------------------
```

```
    Mean VIF |      1.02

. regress ROA SHTD Fsize, robust

Linear regression                               Number of obs =      70
                                                F(  2,    67) =   14.63
                                                Prob > F      =  0.0000
                                                R-squared     =  0.4087
                                                Root MSE      =  .12945

------------------------------------------------------------------------------
             |               Robust
         ROA |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        SHTD |  -.3539419   .1164556    -3.04   0.003    -.5863883   -.1214956
       Fsize |  -.0405487   .0104496    -3.88   0.000    -.0614062   -.0196912
       _cons |   1.213432   .2815674     4.31   0.000     .6514208    1.775443
------------------------------------------------------------------------------

. vif

    Variable |      VIF       1/VIF
-------------+----------------------
       Fsize |     1.04    0.958747
        SHTD |     1.04    0.958747
-------------+----------------------
    Mean VIF |      1.04
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////

. regress ROE TDTA Fsize, robust

Linear regression                               Number of obs =      70
                                                F(  2,    67) =    9.90
                                                Prob > F      =  0.0002
```

```
                                                R-squared     =  0.3140
                                                Root MSE      =  .49661
------------------------------------------------------------------------------
             |               Robust
         ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        TDTA |   .7401974   .1795242     4.12   0.000     .3818656    1.098529
       Fsize |   .0152331   .0382368     0.40   0.692    -.0610878    .0915541
       _cons |  -.3145113   1.014859    -0.31   0.758    -2.340178    1.711155
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       Fsize |      1.03    0.967986
        TDTA |      1.03    0.967986
-------------+----------------------
    Mean VIF |      1.03

. regress ROE LTD Fsize, robust

Linear regression                               Number of obs =      70
                                                F(  2,    67) =   28.52
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3751
                                                Root MSE      =  .47399
------------------------------------------------------------------------------
             |               Robust
         ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         LTD |   1.220981   .2117134     5.77   0.000     .7983997    1.643563
       Fsize |    .019937   .0368989     0.54   0.591    -.0537135    .0935876
```

```
       _cons |  -.4212284      .9734651    -0.43      0.667     -2.364273    1.521816
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       Fsize |      1.02    0.980221
         LTD |      1.02    0.980221
-------------+----------------------
    Mean VIF |      1.02


. regress ROE SHTD Fsize, robust

Linear regression                               Number of obs =      70
                                                F(  2,    67) =    1.72
                                                Prob > F      =  0.1871
                                                R-squared     =  0.1395
                                                Root MSE      =  .55621
------------------------------------------------------------------------------
             |               Robust
         ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        SHTD |   1.120716   .6464783     1.73   0.088    -.1696604    2.411092
       Fsize |   .0243437   .0413451     0.59   0.558    -.0581815    .1068688
       _cons |  -.4363123   1.118374    -0.39   0.698    -2.668597    1.795973
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       Fsize |      1.04    0.958747
        SHTD |      1.04    0.958747
-------------+----------------------
```

Mean VIF | 1.04

//

. regress EPS TDTA Fsize, robust

Linear regression Number of obs = 70

F(2, 67) = 5.52

Prob > F = 0.0060

R-squared = 0.3572

Root MSE = .72024

	Robust				
EPS	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
TDTA	-1.051792	.3620328	-2.91	0.005	-1.774412	-.3291711
Fsize	-.1071648	.0509309	-2.10	0.039	-.2088233	-.0055062
_cons	3.598462	1.409223	2.55	0.013	.7856405	6.411283

. vif

Variable	VIF	1/VIF
Fsize	1.03	0.967986
TDTA	1.03	0.967986
Mean VIF	1.03	

. regress EPS LTD Fsize, robust

Linear regression Number of obs = 70

F(2, 67) = 3.94

Prob > F = 0.0241

```
                                                R-squared     =  0.2475
                                                Root MSE      =  .77926
------------------------------------------------------------------------------
             |               Robust
         EPS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         LTD |  -1.206753   .5333069    -2.26   0.027    -2.271238   -.1422682
       Fsize |     -.1262   .0596215    -2.12   0.038    -.2452051    -.007195
       _cons |   3.939368   1.622492     2.43   0.018     .7008616    7.177875
------------------------------------------------------------------------------


. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       Fsize |      1.02    0.980221
         LTD |      1.02    0.980221
-------------+----------------------
    Mean VIF |      1.02


. regress EPS SHTD Fsize, robust

Linear regression                               Number of obs =      70
                                                F(  2,    67) =    9.03
                                                Prob > F      =  0.0003
                                                R-squared     =  0.4526
                                                Root MSE      =  .66461
------------------------------------------------------------------------------
             |               Robust
         EPS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        SHTD |  -2.919457   .7495904    -3.89   0.000    -4.415646   -1.423269
       Fsize |  -.0915237   .0463862    -1.97   0.053    -.1841109    .0010635
```

```
       _cons |   3.271389       1.273801     2.57     0.012     .7288724    5.813906
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       Fsize |      1.04    0.958747
        SHTD |      1.04    0.958747
-------------+----------------------
    Mean VIF |      1.04
```

APPENDIX IV

Year	company	TDTA	LTDTA	STDTA	ROA	ROE	EPS	Fsize
2004	1	0.33	0.22	0.11	0.08	0.64	0.07	22.71
2005	1	0.5	0.3	0.2	0.04	0.6	0.09	22.73
2006	1	0.56	0.42	0.14	0.32	0.41	0.09	24.34
2007	1	0.53	0.36	0.17	0.32	0.5	1	24.41
2008	1	0.57	0.41	0.16	0.33	0.53	0.08	24.43
2009	1	0.7	0.4	0.3	0.35	2.32	1.32	24.73
2010	1	0.82	0.37	0.45	0.38	0.3	0.41	25.31
2011	1	1.02	0.71	0.31	0.38	2.26	0.32	25.32
2012	1	1.01	0.81	0.2	0.07	0.12	1.78	25.36
2013	1	1	0.75	0.25	0.07	0.16	1.34	25.36
2004	2	0.09	0.03	0.06	0.15	0.09	0.23	26.03
2005	2	0.08	0.04	0.04	0.06	0.09	1	26.03
2006	2	0.09	0.03	0.06	0.06	0.02	0.11	26.03
2007	2	0.07	0.05	0.02	0.1	0.04	1.02	26.03
2008	2	0.08	0.03	0.05	0.04	0.04	0.08	26.04
2009	2	0.08	0.04	0.04	0.12	0.12	2.57	26.93

2010	2	0.05	0.02	0.03	0.02	0.02	0.02	27.03
2011	2	0.03	0.01	0.02	0.02	0.04	0.23	27.25
2012	2	0.34	0.21	0.13	0.1	0.09	1.13	27.45
2013	2	0.28	0.17	0.11	0.07	0.1	0.1	27.53
2004	3	0.62	0.31	0.31	-0.05	0.04	0.26	26.06
2005	3	0.51	0.35	0.16	0.06	0.04	0.12	26.14
2006	3	0.5	0.3	0.2	0.04	0.09	0.9	26.31
2007	3	0.53	0.21	0.32	-0.04	0.14	0.31	26.42
2008	3	0.47	0.21	0.26	0.04	1.12	0.08	26.63
2009	3	0.41	0.31	0.1	-0.06	0.33	0.26	26.64
2010	3	0.38	0.17	0.21	0.23	0.23	0.32	27.54
2011	3	0.42	0.21	0.21	0.06	0.14	0.4	27.62
2012	3	0.43	0.23	0.2	0.04	0.02	0.1	27.63
2013	3	0.5	0.2	0.3	0.05	0.13	0.11	27.68
2004	4	0.14	0.11	0.03	0.06	0.38	0.03	27.91
2005	4	0.16	0.08	0.08	0.09	0.7	0.05	27.93
2006	4	0.22	0.09	0.13	-0.28	-0.04	-0.38	28
2007	4	0.46	0.13	0.33	0.08	0.08	0.12	28.03
2008	4	0.12	0.07	0.05	-0.08	-0.06	-0.13	28.04
2009	4	0.09	0.03	0.06	0.13	0.38	0.23	28.87
2010	4	0.21	0.06	0.15	0.05	0.33	0.9	28.9
2011	4	0.23	0.17	0.06	0.1	0.41	0.25	29.07
2012	4	0.31	0.23	0.08	0.14	0.42	0.16	27.54
2013	4	0.26	0.17	0.09	0.06	0.04	-0.14	27.62
2004	5	0.26	0.19	0.07	0.17	0.43	0.21	22.73
2005	5	0.3	0.03	0.27	0.04	0.08	0.09	24.34
2006	5	0.4	0.07	0.33	0.07	0.14	0.87	24.41
2007	5	0.43	0.31	0.12	0.1	0.06	0.28	24.43

2008	5	0.44	0.17	0.27	0.02	0.09	0.21	24.47
2009	5	0.46	0.21	0.25	0.12	0.47	0.31	24.73
2010	5	0.21	0.09	0.12	0.16	0.09	0.25	26.74
2011	5	0.26	0.09	0.19	0.13	0.5	0.24	26.87
2012	5	0.28	0.12	0.16	0.03	0.67	-0.05	26.93
2013	5	0.25	0.17	0.08	0.14	0.91	0.06	27.75
2004	6	0.79	0.33	0.46	0.12	0.08	0.29	27.85
2005	6	0.13	0.08	0.05	0.02	0.3	-0.24	27.91
2006	6	0.56	0.31	0.25	0.06	0.05	0.21	27.93
2007	6	0.46	0.28	0.18	-0.03	0.59	-0.11	28
2008	6	0.18	0.11	0.07	0.03	0.34	0.02	28.03
2009	6	0.16	0.07	0.09	0.25	0.25	0.61	28.35
2010	6	0.31	0.21	0.1	0.09	1.11	0.09	28.44
2011	6	0.34	0.23	0.11	0.04	0.04	0.11	28.54
2012	6	0.38	0.21	0.17	-0.07	0.21	0.03	28.64
2013	6	0.67	0.33	0.34	0.03	0.08	0.13	28.33
2004	7	0.59	0.31	0.28	-0.11	0.92	0.37	28.73
2005	7	0.3	0.1	0.2	-0.31	-0.31	1.06	28.87
2006	7	0.34	0.21	0.13	0.02	1.71	0.33	28.9
2007	7	0.21	0.13	0.08	0.02	1.19	0.38	29.07
2008	7	0.92	0.47	0.45	-0.22	1.06	0.35	29.13
2009	7	1.06	0.74	0.32	-0.22	1.06	0.82	29.14
2010	7	1.19	0.81	0.38	-0.2	1.19	0.1	29.31
2011	7	1.71	0.64	1.07	-0.51	0.15	-3.97	29.33
2012	7	2.26	1.31	0.95	-0.53	2.26	-3.55	29.36
2013	7	2.32	1.72	0.6	0.05	2.32	-2.01	29.42