EFFECT OF CAPITAL STRUCTURE ON THE PERFORMANCE OF QUOTED MANUFACTURING FIRMS IN NIGERIA

BY

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DECLARATION

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

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Sign

DEDICATION

This project is dedicated to Almighty Allah for his mercies and wisdom given to me to endure this great task, my late father in person of Alhaji Hussein O. Aliu who have earnestly encouraged me toward the successful completion of this thesis but could not leave to witness this moment and my wonderful family for their understanding.

CERTIFICATION

The project entitles "**Effect of Capital Structure on the Performance of Quoted Manufacturing Firms in Nigeria"** has been approved by the Accounting Department, Institute of Administration, Ahmadu Bello University Zaria, in partial fulfillment of the requirement of award of Master Degree of Science in Accounting and Finance.

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ABSTRACT

The debt-to-equity ratio of a firm determines how cash flows will be shared between debt holders and equity holders. In reality, capital structure of a firm is difficult to determine. Financial managers are difficult to exactly determine the optimal structure. The main objective of this study is to determine the effect of capital structure on the performance of quoted Manufacturing firms in Nigeria. Simple regression was used as a tool of data analysis and the result reveal that, Leverage has significant effect on the performance of quoted Manufacturing firms in Nigeria showing that firm that has high profitability and good performance have less debt. It is therefore recommended that, management of quoted manufacturing firms should work very hard to improve the leverage of their quoted Manufacturing firms in order to increase the returns on equity, return on assets and investment. They can do that by ensuring that capital structure is optimal.

TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION

CHAPTER TWO
LITERATURE REVIEW

CHAPTER THREE
RESEARCH METHODOLOGY

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

CHAPTER FIVE
SUMMARY CONCLUSION AND RECOMMENDATION

CHAPTER ONE
INTRODUCTION

1.1   BACKGROUND TO THE STUDY

A firm's leverage refers to the mix of its financial liabilities. As financial capital is an uncertain but critical resource for all firms, suppliers of finance are able to exert control over firms. Debt and equity are the two major classes of liabilities, with debt holders and equity holders representing the two types of investors in the firm. Each of these is associated with different levels of risk, benefits, and control. While debt holders exert lower control, they earn a fixed rate of return and are protected by contractual obligations with respect to their investment. Equity holders are the residual claimants, bearing most of the risk, and, correspondingly, have greater control over decisions. Questions related to the choice of an appropriate financing means (debt versus equity) have increasingly gained importance in management research. Traditionally examined in the discipline of finance, these issues have gained relevance in the past few years, with researchers examining linkages to strategy and strategic outcomes.

The financial management functions of a firm - including its capital structure decision - deals with the management of the sources and uses of finances. Firms enter into transactions with suppliers of finance (be they debt holders or equity holders) when raising capital for assets. The right to partake of the cash flows generated from the assets lies with these suppliers. The debt-to-equity ratio of a firm determines how these

cash flows will be shared between debt holders and equity holders. In other words, if firms are set up to maximize equity holder's wealth, then the proportion of cash flows disbursed to debt holders becomes important. The different types of financing, however, are also associated with different levels of costs. An examination of the net benefit of a firm's assets should incorporate these cost differences along with the value of such assets.

Theory of capital structure is an important theory in finance. It addresses sources of finance available to business organizations wishing to raise funds to finance their operations. These include equity sales, retained earnings, bonds, bank loans, accounts payable and line of credit (McMenamin, 1999 and Ross, et al 2005) and possibly few other interest bearing debts. The capital structure theory originated from the famous work of Modigliani and Miller (M&M) (1958). They argued that, under certain conditions, the choice between debt and equity does not affect a firm value and hence, the capital structure decision is irrelevant, but in a world with tax-deductible interest payment, firm value and capital structure are positively related. M&M (1958) pointed out the direction that capital structure must take by showing under what conditions the capital structure is irrelevant. Titman (2001) lists some fundamental conditions that make the M&M proposition hold as: no (distortionary) taxes, no transaction cost, no bankruptcy cost, perfect contracting assumptions and complete and perfect market assumption. The M&M publication became a subject of considerable debate both

theoretically and empirical research. Some academicians received Modigliani and Miller work as been controversial and state that, in real world situation, the main assumptions never hold and hence, 'capital structure irrelevance' is nothing but a fiction. Moreover, they stated that in a 'non-perfect' world, there are factors influencing capital structure decision of a firm.

The agency cost theory is premised on the idea that the interests of the company's managers and its shareholders are not perfectly aligned. In their seminal paper Jensen and Meckling (1976) emphasized the importance of the agency costs of equity in corporate finance arising from the separation of ownership and control of firms whereby managers tend to maximize their own utility rather than the value of the firm. Agency costs can also exist from conflicts between debt and equity investors. These conflicts arise when there is a risk of default. The risk of default may create what Myers (1977) referred to as an "underinvestment" or "debt overhang" problem. In this case, debt will have a negative effect on the value of the firm. But firm performance may also affect the choice of capital structure. Berger and Bonaccorsi di Patti (2006) stipulate that more efficient firms are more likely to earn a higher return for a given capital structure, and that higher returns can act as a buffer against portfolio risk so that more efficient firms are in a better position to substitute equity for debt in their capital structure.

Since the publication of M&M's irrelevance propositions raise the issues on the contrary to norms in respect of the capital structure, hundreds of Scholars have contributed in the discussion to establish whether their theory is obtainable, thereby resolving basic financing decision problems regarding optimal capital structure for individual firm, the effect of an appropriate financing means or mix on firm performance and what condition is the choice of capital structure relevant once one or more of the key conditions are relaxed.

Miller (1997) added personal taxes to his analysis and demonstrated that optimal debt usage occurs on a macro-level but does not exist at the firm level and that interest deductibility at firm level is offset at the investor level. Other researchers have added imperfections such as bankruptcy cost, agency costs and gains from leverage-induced tax shields to M&M analysis and have maintained that an optimal capital structure may exist but yet, this academic literature has not been very helpful to provide clear guidance on practical issues. Most important, with only few exceptions, most existing empirical evidence from capital structure studies to date, are based on data from developed countries with only few studies proving evidence from developing countries. Though, debt ratios in developing countries seem to be affected in the same way and by the same types of variables that are significant in developed countries. However, there are systematic differences in the way these ratios are affected by country factors, such as GDP growth rates, inflation rates, and development of capital markets.

The manufacturing sector consists of establishments that use mechanical or chemical processes to transform material or substances into new products. An establishment is usually at a single physical location and is often called a plant, factory, or mill. It ordinarily uses power-driven machines and equipment for handling materials. Its products may be final products that consumers will purchase, such as an automobile or a chair, or they may be goods for use by other manufacturers, such as parts for automobile engines or rolls of upholstery fabric. A manufacturing establishment may also assemble parts or perform blending operations. Manufacturers are in the business of producing physical units of output for consumption by end users or other manufacturers. One goal of production is to consume as few inputs as possible to produce a quality output.

Capital structure is closely linked with corporate performance (Tian and Zeitun, 2007). Corporate performance can be measured by variables which involve productivity, profitability, growth or, even, customers' satisfaction. These measures are related among each other. Financial measurement is one of the tools which indicate the financial strengths, weaknesses, opportunities and threats. Those measurements are return on investment (ROI), residual income (RI), earning per share (EPS), dividend yield, return on assets (ROA),, growth in sales, return on equity (ROE),etc (Barbosa and Louri, 2005). For the purpose of this study, performance is measured by three proxies

namely; return on equity (ROE), return on assets (ROA) and return on investment (ROI).

It is however important to note that, in evaluating the performance of a firm, the personal wealth of a firm may influence the level of risk a company investor and managers may be willing to assume as well as determine the resources available to support the business. As a result of ownership and wealth incentive, it is important to investors and others to understand its effects on firm performance as they evaluate a firm because capital structure decision on financing the assets (such as personnel, machinery and buildings) of an organization by debt or by equity will leave relationship with the final result for any given period since capital structure influence the returns and risks of shareholders and this consequently affects the market value of the shares. This study attempts to reduce the gap by analyzing a capital structure question from a Nigerian business environment.

1.2 STATEMENT OF THE PROBLEM

In reality, optimal capital structure of a firm is difficult to determine. Financial managers have difficulty in determining the optimal capital structure. A firm has to issue various securities in a countless mixture to come across particular combinations that can maximize its overall value which means optimal capital structure. Optimal capital structure means with a minimum weighted-average cost of capital, the value of a firm is maximize. If capital structure is considered irrelevant to the value of a firm in a

perfect market, then imperfections that exist such as absence of corporate tax, bankruptcy cost in reality may cause its relevancy.

The standard of increasing capital in Nigeria became higher hard to achieve due to the associated risk of raising capital. Although capital structure and the impact on the value and performance had been studied for many years, researchers still cannot agree on the extent of the impact. In Nigeria, investors and stakeholders do not look in detail the effect of capital structure in measuring their firms' performance as they may assume that attributions of capital structure are not related to their firms' performance and value. Indeed, a well attribution of capital structure will lead to the success of firms.

Modern financial theory and strategic management which provide basis of associating leverage and firm performance are based on very different paradigms, resulting in opposing conclusions. Therefore, there is need for more integrative research to resolve the controversies. Strategic management scholars exhibit disparate opinions regarding the possibility of such integration. Oviatt (1984) suggested that a theoretical integration between the two disciplines is indeed possible, and that transaction cost economics and agency theory provide possible avenues. In contrast, Bromiley (1990) believed that the scope for integration is limited, if at all possible. According to him, strategy researchers should neither import empirical results from finance, nor should they work towards integration of strategic and financial research. Therefore, while

strategy should expand its domain to study areas traditionally considered in finance, researchers should be careful to maintain a strategic perspective.

Some management researchers have viewed capital structure decisions as arising from the preferences of various stakeholders such as managers, board of directors, and institutional investors. Other researchers have viewed capital structure as an antecedent to firm strategy leading to performance evaluation, such as diversification into new businesses. While these studies have definitely contributed to some understanding of the linkages between firm performance and capital structure, they have largely ignored some basic issues confronting researchers and managers alike, namely: Does it matter how firms finance their assets? and do different modes of financing make a difference? While anecdotal evidence suggests that the amount and type of financing should be closely tied to a firm's performance and few researchers have looked at the firm performance/financing interaction.

The choice of an appropriate financing mix constitutes a critical decision for the survival and continuous growth of any business organization not only because of the need to maximize returns to the various interest holders, but also because of the impact such informed decision has on the performance of an organization in a competitive environment. The survival and growth of a firm need resources but financing these resources has limitations. Therefore, applying these limit resources should be in the way

that creates an appropriate share of value for providers and users of resources because without capital the firm would be unable to run, grow and expand their business.

However, other studies present different opinion about what type of fund and the optimum capital structure that will improve a firm performance. Acemoglue (1998) and Brounen and Eitchholtz (2001), Landier, (2002) considered debt financing as a more appropriate form of financing the operation of high risk firms because of the advantage of tax shield available on interest payment, while Myers and Mc Connell (2001) sees equity financing as more appropriate means of financing high risk firms with a lower success probability and higher cash flow.

Other researchers such as Berkovitch and Israel (1996) and Habib and Johnsen, (2000), see the use of both debt and equity as a more appropriate means of financing a firms operation. Based on these contending views and the resultant conspicuous gap in empirical research on capital structure of manufacturing firms in Nigeria and the appropriate financing means of firm's operations, corporate managers are faced with a problem of which means of finance and at what level in terms of magnitude will bring about the efficient performance of a firm. Consequently, the problem of this study is to assess the effect of capital structure decision on the performance of Nigerian manufacturing firms using some selected quoted firms.

1.3   OBJECTIVES OF THE STUDY

The main objective of this study is to examine the effect of capital structure on the performance of quoted Nigerian manufacturing firms. Specifically, it seeks to:

i.   Determine the impact of leverage on the return on equity of quoted manufacturing firms in Nigeria.

ii.   Find out the effect of leverage on the return on assets of quoted manufacturing firms in Nigeria.

iii. Evaluate the contribution of leverage to return on investment of quoted manufacturing firms in Nigeria.

1.4   STATEMENTS OF HYPOTHESES

In line with the objective of the study, the following hypotheses have been formulated in null form:

HO_1 Leverage has no significant impact on the return on equity of quoted manufacturing   firms in Nigeria.

HO_2 Leverage has no significant impact on the return on assets of quoted manufacturing   firms in Nigeria.

HO_3 Leverage has no significant impact on the return on investment of quoted manufacturing firms in Nigeria.

1.5 SCOPE OF THE STUDY

This study was undertaken to critically evaluate the effect of capital structure decision on the performance of quoted Manufacturing firms in Nigeria and it covers a period of ten years, from 2000-2009. This period actually witnessed a boom of financing activities by Nigerian Manufacturing firms prior to the global financial crunch most recently. The naira volume of financing activities increased from 25.2% in 2005 to over 25.31% in 2009 as provided by the Central Bank of Nigeria (CBN) Credit Policy guidelines of 2000 to 2009 budget. The term Leverage will also be used in this study as the operational definition of capital structure as it affects the three dependent variables (i.e Return on Equity, Return on Assets and Return on Investment) which has been chosen as our performance proxies because it is a long-term indicator of performance measurement which shows how our variables of interest is been influenced over a period of time.

1.6   SIGNIFICANCE OF THE STUDY

The choice of appropriate capital structure is a critical decision for corporate financiers because of the likely impact of such financing decision in maximizing the wealth of its shareholders. The study will be of significant benefit to a number of individuals. These include the investors to recognize the link between capital structure and financial performance and choosing appropriate measures to evaluate and analyze

the companies' financial status while committing their hard-earned funds for an expected return. Industrialist and non-industrialist in identifying the appropriate leverage ratio for firms within the industry as leverage ratio varies across the industry. This study will also be relevant to industrialist in identifying the problem associated with either debt financing or equity financing and identifying the best financing mix which will be more effective at encouraging an efficient operation of the firms.

This research will make some significant contribution to the existing body of finance in the area of corporate financing and consequently accounting knowledge in Nigeria. Considering that capital structure decision of Nigerian manufacturing firms still remains an unexploited area, special attention to the role of risk for the choice of any financing means or mix will be addressed.

It is the hope that the result of this study will be beneficial to both internal and external parties (i.e managers in maximizing investors return, owners in making an informed decision, creditors in ascertaining credit worthiness of a firm, Government in making favourable financing policies etc) to improve on the GDP contribution by the manufacturing sector and also improve on employment rate once the sector is viable since the stake holders are interested in knowing the impact of such decisions on an organization performance.

Also, the government and its agencies will somehow benefit from this study because the study will highlight the need from its findings if necessary for the government to

formulate more favorable financial and economic guidelines as the sector demands and this will sustain the operations of Nigerian Manufacturing firms, especially the potential firms yet to be quoted in the stock market and resultantly contributing to GDP of the nation which have been on the decline hitherto.

This study will also be of great significance to Manufacturers Association of Nigerian because it brings out the best financing means or mix which improves a firm's value and this will go a long way in helping them attain their target and set goals.

Students and researchers who will want to develop a future research on this subject will also benefit from this study and it will contribute in filling the gap of existing body of knowledge in accounting, finance and economics regarding capital structure decision which have been a long debate .

CHAPTER TWO
LITERATURE REVIEW

2.1 INTRODUCTION

Investors and potential investors will be obliged to invest their hard earned savings in a company that promised to make a return that will change their wealth position at a particular point in time. However, as sound as this objective is, it will be illusive if the hard earned resources are not combined for optimum utilization. The essence of capital structure decision is to ensure the right combination of financing resources that will yield maximum return without necessarily hampering the interest of stakeholders.

This chapter takes a review of relevant and related literatures to the study. The main issues discussed include: foundation of capital structure decision, optimization of capital structure, capital structure and firm performance, inflation and capital structure, determinants of corporate capital structure, capital structure and cost of capital, measures of leverage, theories of capital structure as well as the theoretical frame work adopted for this study.

2.2 AN OVERVIEW OF THE NIGERIAN ECONOMY AND MANUFACTURING SECTOR

The manufacturing sector in any economy is reputed to be the engine of growth and the ultimate pillar for sustainable growth and development. The success of any

economy is usually measured by its productive strength and its ability to compete favourably with other economies (Borodo,2010). When the manufacturing base of a country is strong, such an economy is better equipped to create wealth, thus boosting its Gross National Product and a weak manufacturing sector spells doom for any country (Ekwere,2010).

However, the state of the manufacturing sector in Nigeria has been a worrisome issue for two decades and different policies by past and present political dispensation has been structured to alleviate the funding problems of the industry Adebiyi, 2004 and Olorunisola, 2001 enumerates several development policies taking by the government stated thus: investment company of Nigeria (ICON) in 1959, Nigerian Industrial Development Bank (NIDB) established in January 1964, The Nigerian Bank for Commerce and Industry (NBCI) was established in 1973, National Economic Reconstruction Fund (NERFUND) through promulgation of Decree No 2 of 9 January 1991, The Small & Medium Enterprise Equity Investment Scheme (SMEEIS), The Bank of Industry (BoI) established in 2001. All the above policies were to support different types of businesses with primary aim of developing the medium and large-scale manufacturing enterprises.

The manufacturing sector in any economy is seen as the catalyst for the transformation of the economy to a dynamic, sustained and diverse economy, as evident from the experiences of developed countries such as United State of America,

United Kingdom and some emerging nations like China, Japan, India and possibly few others whose manufacturing sector have played a critical role in the structural transformation of the economy from a subsistence, low production and low income state to one that is dynamic, sustained and diverse economy (Borodo,2010).

Nigeria's laudable medium term strategy document (National Economic and Empowerment Strategy – NEEDS I) affirmed that the manufacturing sector has enormous potentials for employment generation, wealth creation as well as poverty alleviation. These indicators are very significant in measuring the performance of the manufacturing sector. Thus, a critical review of these indicators showed that the Nigerian manufacturing sector is in a state of comatose as its capability to generate employment, create wealth, reduce poverty and contribute to GDP has been declining over the years (Borodo,2010).

For instance, employment generation and wealth creation by the sector over the past few years has declined sharply from 2,841,083 employees in 2002 to 1,026,305 employees in 2008. Wealth can only be created when the prospective investors find the business environment conducive and profitable to do business. In Nigeria, the operating environment is very harsh with un-conducive policy for borrowing, erratic power supply to insecurity of lives and property as is presently seen in the Niger Delta and the Northern part of the country.

The poverty level in Nigeria has been on the increase in recent times due to deteriorating quality of work life especially in the area of reduction of job opportunities, high costs of living, poor infrastructure and bad living conditions. According to UNDP report on Nigeria in 2007, the level of poverty increased from 46% in 1992 to 70.9% in 2006. Manufacturing contribution to GDP after independence that was 8.1% in 1970 fell to 4.13% in 2008. For capacity utilization, the state of the manufacturing sector can be appreciated by a scrutiny of the capacity utilization that has been on the decline from 70% in 1975 to 48% in 2008 among other failure.

According to Ajayi (2010) the failure in other sectors of Nigeria's economy has been likened to Dutch disease since the advent of oil syndrome which shifted attention from other sectors of the economy to oil sector. Dutch disease originated in The Netherlands during the 1960s when the high revenue generated by its natural gas discovery led to a decline in the competitiveness of its other non-booming tradable sectors. Despite the revenue windfall the new discovery brought, The Netherlands experienced a drastic decline in economic growth. It is not surprising to find a private company like the United Nigerian Textiles PLC (UNTL) collapsed; neither is the textile industry, the only distressed sector in Nigeria. Only a few firms are still active. The closure of the United Nigerian Textiles PLC (UNTL), one of the Nigeria's leading textile firms, again opened another unpleasant chapter in the Nigeria's economic history.

2.3   INDUSTRIAL FINANCING IN NIGERIA

According to Adebiyi, M.A and Babatope, B.O.(2004), a well-functioning financial markets are an important ingredient for promoting economic growth. Developed financial markets allow access of firms to new markets, and help to promote greater competition, innovation and productivity in the economy. Even when faced with profitable investment opportunities, many firms lack the resources to exploit these. With financial markets unwilling to lend, investment decisions of firms become more dependent on internally generated cash flow or resources from family, friends and the informal sector. The costs of an inadequate financial infrastructure are demonstrably higher for small and medium-sized firms, because these firms are not well-connected to lenders and often lack the necessary credit history and collateral required for accessing bank finance. Cross-country evidence from investment surveys suggests that smaller firms are 50 per cent more likely to view access to credit as a severe constraint (WDR 2005). Yet it is precisely these smaller and less privileged firms that are especially important for creating investment and job opportunities for the poor. A financial system that alleviates credit constraints of smaller firms is thus essential not just for promoting growth, but also for poverty reduction. Like other low-income developing countries, weak financial markets are an important constraint for the average Nigerian manufacturer.

The role of manufacturing in any economy cannot be overemphasized. However, this role cannot be effectively carried out without capital. Penrose (1963) in explaining

the growth of small firm raised the issues of capital and entrepreneurial ability. In his own view, the ability of a small firm to grow by raising capital depends on its entrepreneurial ability. He has this to say: "many small firms without adequate initial financial resources do succeed, do raise capital, and do grow into large firms. And they do this, for the most part, by virtue of a special entrepreneurial ability'' The type of entrepreneurial service needed to raise capital, according to him, may not be closely related to the type of services needed to run a firm efficiently, for successful raising of capital depend on an entrepreneur's ability to create confidence. According to him, raising capital is embedded in entrepreneurial ability. If a firm has entrepreneurial ability to create confidence on the part of financial institutions, it will not be difficult to raise capital. However, this is not the case with most manufacturing firms in Nigeria where potential lenders have little or no knowledge about the managerial capabilities such enterprises. Peterson and Rajan (1992) observe that small enterprises (in Nigeria) are most likely to face credit rationing because most potential lenders have little information on the managerial capabilities or investment opportunities of such firms and are unlikely to be able to screen out poor credit risks, or to have control over borrowers' investment. McKinnon (1973) and Shaw (1973) emphasized the importance of internal and external finances in the development of manufacturing sub-sector in developing countries, including Nigeria. While McKinnon emphasizes the significance of internal finance, where investors have to accumulate savings before obtaining

lumpier capital goods, Shaw stresses the importance of external finance and the development of financial institutions in capital accumulation. In Nigeria, accumulation of savings for investment is hindered by poverty. Eyraud (2002) opines that, Sub-Saharan Africa houses 290 million people in dire poverty and many of them are surviving far below the poverty line of US$ 1 a day.

However, in respect to external finance in Nigeria, harsh environment hinders financial institutions in developing manufacturing sub-sector. Commercial banks' ability to pool risks across many investment projects promotes growth by promoting higher and safer returns to individual investors. If the risk from sectoral shocks is efficiently shared, portfolio diversification may also encourage specialization, and thus productivity growth (Saint-Paul, 1992). Furthermore, the presence of banks or insurance companies reduces the need to hold savings in liquid and thus secures additional funds for investment in productive capital (Bencivenga and Smith 1991; Levine 1991). These roles are not fully exploited in Nigeria by financial institution due to underdevelopment of money and capital markets, including harsh environment in which these institutions operate.

Schatz (1964) opines the importance of capital in different perspective. He raised the issue of capital shortage in the finance of manufacturing sub-sector in Nigeria. Most of the Nigerian businessmen believe that inadequate capital is their main business handicap. Schatz(1964) refuted this idea and reveals that what really existed in Nigeria

was the shortage of viable projects and not that of capital. He provided empirical evidence using loans operations of the Federal Loans Board (FLB), which gave loans only to firms that had been well established. He introduces the concept of effective demand (for capital) where he mentioned that 'those with projects which the potential lenders adjudged unworthy have a desire for capital but not effective demand for capital. Analysis shows that the large false demand for capital creates the illusion that there is a shortage of capital. But the record indicates that true situation is the converse of capital shortage. Instead of a large number of viable projects vainly seeking capital, the situation has been one of capital vainly seeking viable private projects.

Diaku (1972) on the other hand could not reason with Schatz in this direction. He pointed out that the problem facing manufacturing industries in Nigeria is that of shortage of capital and not "capital vainly seeking viable private projects" as demonstrated by Schatz. Diaku (1972) gave four assumptions under which Schatz's thesis could hold and also opine that all the assumptions could not be upheld. He developed another concept of effective demand and in the conclusion of his analysis he said: "we must discard the thesis (Schatz' thesis)… as providing no satisfactory operational foundation for either evaluating the capital situation in Nigeria or in any other developing country. At best it is an appealing but misleading empirical hypothesis which, by the logic of the author's methodology, is incapable of proof." Diaku (1972), in explaining alternative sources of capital surplus illusion, showed that there was an

error in fact and logic in Schatz's thesis, and that he placed more emphasis on effect rather than causation. For example, Diaku said, "with regards to viable projects, Schatz argues: 'the shortage could be caused by a lack of entrepreneurial capacity, using this term to refer to experience, training, knowledge and everything else that goes to make up the ability of the business man himself '. Diaku (1972) explained that the significant shortages in the Nigerian private industrial sectors are entrepreneurial training and knowledge, managerial skill and infrastructure and that once these shortages are removed most viable projects will be revealed. He, therefore, concluded that it was not viable project per se that are in short supply in Nigeria, but the factors preventing the detection of viable projects, and these factors were in themselves broader aspects of capital shortage.

2.4   CONCEPT OF CAPITAL STRUCTURE

A firm's capital structure refers to the mix of its financial liabilities. As financial capital is an uncertain but critical resource for all firms, suppliers of finance are able to exert control over firms. There are two different ways of financing the assets of an organization; through internal equity or external debt. Capital structure refers to the way a corporation finances its assets through some combination of equity and debt (Tsai *et al*,2010). However, there are several kinds of equity and debt according to Mc Menamin, (1999) and Ross; et al,(2005). These are common stock, preferred stock and retained earnings (untaxed reserves) as well as bank loans, bonds, accounts payable and

line of credit. Capital structure according to Song (2005) refers to the mix of different types of securities (long-term debt, common stock) which are issued by a company to finance its assets. Chou (2007) sees capital structure as a mixture of debt and equity financing of a firm. Capital structure according to Wikipedia (2010), refers to the way a corporation finances itself through some combination of equity, debt or hybrid securities. From all the definitions above, it is eminent that capital structure in summary refers to the structure of a firm's liability. Hence, the capital structure theory is highly relevant to the firm's safety and growth, as well as the debt-holders' safeguard for a sustainable economy. How to plan financing decision using a particular means or mix of funding to maintain a proper capital structure is an important issue of concern demanding urgent for financing managers if their sectors is ever to play a major role in economic development.

Leverage is defined as the sensitivity of the value of equity ownership with respect to changes in the underlying value of the firm. Empirically, leverage ratios are frequently independent variables (sometimes as part of a hypothesis, sometimes as a control). Leverage ratios are also the dependent variable in the empirical capital structure literature. This literature tries to explain variations in corporate leverage, both in the cross section of capital structure (i.e. why some firms have high leverage) and in the time series (how capital structures evolve). Capital structure refers to the firm's financial framework which consists of the debt and equity used to finance the firm.

Capital structure is one of the popular topics among the scholars in finance field. The ability of companies to carry out their stakeholders' needs is tightly related to capital structure. Therefore, this derivation is an important fact that we cannot omit. Capital structure in financial term means the way a firm finances their assets through the combination of equity, debt, or hybrid securities (Saad, 2010). In short, capital structure is a mixture of a company's debts (long-term and short-term), common equity and preferred equity. Capital structure is essential on how a firm finances its overall operations and growth by using different sources of funds. Modigliani-Miller (MM) theorem is the broadly accepted capital structure theory because is it the origin theory of capital structure theory which had been used by many researchers. According to MM Theorem, these capital structure theories operate under perfect market. Various assumptions of perfect market such as no taxes, rational investors, perfect competition, absence of bankruptcy costs and efficient market. MM Theorem states that capital structure or finances of a firm is not related to its value in perfect market.

For this purpose, capital structure can simply be defined as a firms' financial framework, which comprise of a firm retain earnings, debt financing and equity financing in order to maintain the business entity in financing its assets.

2.5 FACTORS INFLUENCING THE CHOICE OF CAPITAL STRUCTURE

There are several other factors influencing companies' choice of an appropriate capital structure. Some companies are not able to receive bank loans (Kamsvag, 2001), some have enough retained earnings to undertake their desired investment without taking any loans (Anderson,Wahlberg & Ostlund, 2006), and some does not want to undertake any debt by principle(Anderson & Williamsson, 2001). Petersen and Rajan (1994) argue that there are more relevant and suitable measures to use when analyzing the capital structure of an organization than those presented by Miller and Modigliani (1958). Business size, age and cash flow is according to Petersen and Rajan (1994) important factors.

i.   The larger the company is, normally the debts are too.

ii.   The age of a company affects the capital structure. As the company matures debt decreases.

iii. Young companies are more or less forced to finance through bank loans while older have had possibilities to build capital from previous revenues.

i.   A company with a solid cash flow has fewer problems to pay interest and to amortize than a company with a volatile cash flow, due to these reasons they can handle a larger amount of debts.

Other factors influencing the choice of an appropriate capital structure are:

2.5.1   **Business risk.** This risk is the first of two determinants of the costs of financial distress according to Myers (1984). It is a risk associated with the nature of the industry the business operates and if the business risk is higher the optimal capital structure is required. The variability of cash flow according to Ryen *et al* (1997) is at the heart of a business risk. The greater the fluctuations in a company's cash flows, the greater the chance it will be unable to meet its obligations in any given period. Firms with steadier cash flow will be able to support higher debt levels than riskier firms, all other factors being equal.

2.5.2   **Tax position.** Debt capital is regarded as cheaper because interest payable is deductible for tax purposes. Advantage not much for businesses with unrelieved tax losses, depreciation tax shield as they already have an existing lower tax burden.

2.5.3   **Financial Flexibility.** This depends on how easy a business can arrange finance on reasonable terms under adverse conditions. Flexibility in raising finance will be influenced by the economic environment (availability of savers and interest rates) and the financial position of the business.

2.5.4   **Managerial Style.** How much to borrow also depend on managers approach to finance risk. Conservative managers will usual try to keep the debt equity ratio low.

2.6   POTENTIAL DETERMINANTS OF CAPITAL STRUCTURE

Both theoretical and empirical capital structure studies have generated many results that attempt to explain the determinants of capital structure. As a result of these, some broad categories of capital structure determinants have emerged. Titman and wessels (1988), Harris and Raviv (1991) however point out that the choice of suitable explanatory variables is potentially contentious. According to Harris and Raviv (1991), the consensus is that leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability and uniqueness of the product.

In the empirical analysis by Titman and wessels (1988), they focused on six of these variables: tangibility of assets (the ratio of fixed to total assets), firm size, the market-to-book ratio (as a proxy for investment opportunities), profitability, volatility, uniqueness of the product and non-debt tax shields.

2.6.1 TANGIBILITY OF ASSETS: Previous empirical studies by Titman and Wessels (1988), Rajan and Zingales (1995) and Fama and French (2000) argue that the ratio of fixed to total assets (tangibility) should be an important factor for leverage. The tangibility of assets represents the effect of the collateral value of assets of the firm's gearing level. However, the direction of influence is not a-priori clear.

Galai and Masulis (1976), Jensen and Meckling (1976) and Myers (1977) argue that stockholders of levered firms are prone to overinvest, which gives rise to the classical shareholder-bondholder conflict. However, if debt can be secured against assets, the borrower is restricted to using debt funds for specific projects. Creditors have an improved guarantee of repayment, and the recovery rate is higher, i.e., assets retain more value in liquidation. Without collateralized assets, such a guarantee does not exist, i.e., the debt capacity should increase with the proportion of tangible assets on the balance sheet. Hence, the tradeoff theory predicts a positive relationship between measures of leverage and the proportion of tangible assets. In contrast, Grossman and Hart (1982) argue that the agency costs of managers consuming more than the optimal level of perquisites is higher for firms with lower levels of assets that can be used as collateral. Managers of highly levered firms will be less able to consume excessive perquisites, since bondholders more closely monitor such firms. The monitoring costs of this agency relationship are higher for firms with less collateralizable assets. Therefore, firms with less collateralizable assets might voluntarily choose higher debt levels to limit consumption of perquisites. This agency model predicts a negative relationship between tangibility of assets and leverage. We use the ratio of fixed assets to total assets in our empirical tests. The more direct approach using intangible assets in the nominator cannot be applied due to a lack of data.

2.6.2 SIZE: The effect of size on leverage is ambiguous. Warner (1977) and Ang, Chua and McConnel (1982) document that bankruptcy costs are relatively higher for smaller firms. In a similar vein, Titman and Wessels, Harris and Raviv (1991), (1988) argue that larger firms tend to be more diversified and fail less often. Accordingly, the **trade-off theory** predicts an inverse relationship between size and the probability of bankruptcy that is a positive relationship between size and leverage. If diversification goes along with more stable cash flows, this prediction is also consistent with the free cash flow theory by Jensen (1986) and Easterbrook (1986). This notion implies that size has a positive impact on the supply of debt. On the other hand, size can be regarded as a proxy for information asymmetry between firm insiders and the capital markets. Large firms are more closely observed by analysts and should therefore be more capable of issuing informationally more sensitive equity, and have lower debt. Accordingly, the **pecking order theory** of the capital structure predicts a negative relationship between leverage and size, with larger firms exhibiting increasing preference for equity relative to debt. Following Titman and Wessels (1988), our measure of size is the natural logarithm of net sales. The logarithmic transformation accounts for the conjecture that small firms are particularly affected by a size effect. Alternatively, one could use the natural logarithm of total assets. However, we think that net sales is a better proxy for size, because many firms attempt to keep their reported size of asset as small as possible, e.g., by using lease contracts.

2.6.3 GROWTH OPPORTUNITIES: Galai and Masulis (1976), Jensen and Meckling (1976) and Myers (1977) argue that when a firm issues debt, managers have an incentive to engage in asset substitution and transfer wealth away from bondholders to shareholders. It is generally acknowledged that the associated agency costs are higher for firms with substantial growth opportunities. Thus, the trade-off model predicts that firms with more investment opportunities have less leverage because they have stronger incentives to avoid underinvestment and asset substitution that can arise from stockholder-bondholder agency conflicts. This prediction is strengthened by Jensen's (1986) free cash flow theory, which predicts that firms with more investment opportunities have less need for the disciplining effect of debt payments to control free cash flows. Fama and French (2000) explain how the predictions for book leverage carry over to market leverage. The trade-off theory predicts a negative relationship between leverage and investment opportunities. Since the market value grows at least in proportion with investment outlays, the relation between growth opportunities and market leverage is also negative. Previous empirical results in this area are mixed. For example, Titman and Wessels (1988) find a negative relationship between leverage and investment opportunity, while Rajan and Zingales (1995) Fama and French (2000), report a positive relationship between leverage and growth. In fact, the simple version of the pecking order theory supports the latter result. Debt typically grows when investment exceeds retained earnings and falls when investment is less than retained

earnings. Thus, given profitability, book leverage is predicted to be higher for firms with more investment opportunities.

However, in a more complex view of the model, firms are concerned with the future as well as current financing costs. Balancing current and future costs, it is possible that firms with large expected growth opportunities maintain low-risk debt capacity to avoid financing future investments with new equity offerings, or foregoing the investments. Therefore, the more complex version of the pecking order theory predicts that firms with larger expected investments have less current leverage. Our measure of growth opportunities is the ratio of book-to-market equity. Simple cash flow valuation models suggest that this is a forward looking measure. Another possibility would be to use research and development expenditures. Titman and Wessels (1988) as another example used past growth rate of total assets. However, we think this measure is not appropriate because historical growth is not necessarily linked to future growth (Chan *et al*, 2003).

2.6.4 PROFITABILITY: In the trade-off theory, agency costs, taxes, and bankruptcy costs push more profitable firms toward higher book leverage. First, expected bankruptcy costs decline when profitability increases. Second, the deductability of corporate interest payments induces more profitable firms to finance with debt. Finally, in the agency models of Jensen and Meckling (1976), Easterbrook (1984) and Jensen (1986) higher leverage helps to control agency problems by forcing managers to pay out more of the firm's excess cash. The strong commitment to pay out a larger fraction of

their pre-interest earnings to debt payments suggests a positive relationship between book leverage and profitability. This notion is also consistent with the signaling hypothesis by Ross (1977), where higher levels of debt can be used by managers to signal an optimistic future for the firm.

In sharp contrast, in the pecking order model, higher earnings should result in less book leverage. Firms prefer raising capital, first from retained earnings, second from debt, and third from issuing new equity. This behavior is due to the costs associated with new equity issues in the presence of information asymmetries. Debt typically grows when investment exceeds retained earnings and fall when investment is less than retained earnings. Accordingly, the pecking order model predicts a negative relationship between book leverage and profitability. An important question is whether these predictions for book leverage carry over to market leverage. As put forth above, the trade-off theory predicts that leverage increases with profitability. Since the market value also increases with profitability, this positive relation does not necessarily apply for market leverage.

In contrast, the pecking order theory predicts that firms with a lot of profits and few investments have little debt. Since the market value increases with profitability, the negative relationship between book leverage and profitability also holds for market leverage. Again, the empirical evidence on the issue is mixed. For example, Rajan and Zingales (1995) report a negative relationship between leverage and profitability

(supporting the pecking order theory), while Jensen, Solberg and Zorn (1992) find a positive one (supporting the trade-off theory). Following Titman and Wessels (1988), we use two different measures of profitability. Our first measure of profitability is the ratio of operating income over total assets (ROA), the second one is the ratio of operating income over sales (GMN). We refer to the former definition as "return on assets", and to the latter as "gross margin".

2.6.5 VOLATILITY: The importance of the Myers (1977) type underinvestment problem increases with the volatility of the firm's cash flow. Two issues are particularly noteworthy. First, DeAngelo and Masulis (1980) argue that for firms which have variability in their earnings, investors will have little ability to accurately forecast future earnings based on publicly available information. The market will see the firm as a "lemon" and demand a premium to provide debt. This drives up the cost of debt. Second, to lower the chance of issuing new risky equity or being unable to realize profitable investments when cash flows are low, firms with more volatile cash flows tend to keep low leverage. Accordingly, the pecking order model predicts a negative relationship between leverage and the volatility of the firm's cash flows.

The trade-off model allows the same prediction, but the reasoning is slightly different. More volatile cash flows increase the probability of default, implying a negative relationship between leverage and volatility of cash flows. Following Bradley, Jarrell and Kim (1984), we measure variability as the standard deviation of the first

difference in annual earnings, scaled by the average value of the firm's total assets over time (VOLA), Fama and French (2000),

2.6.6 NON-DEBT TAX SHIELD:

2.6.6 NON-DEBT TAX SHIELD: Firms will exploit the tax deductibility of interest to reduce their tax bill. Therefore, firms with other tax shields, such as depreciation deductions, will have less need to exploit the debt tax shield. Ross (1985) argues that if a firm in this position issues excessive debt, it may become "tax-exhausted" in the sense that it is unable to use all its potential tax shields. In other words, debt is "crowded out" and the incentive to use debt financing diminishes as non-debt tax shields increase. Accordingly, in the framework of the trade-off theory, one hypothesizes a negative relationship between leverage and non-debt tax shields. In contrast, Scott (1977) and Moore (1986) argue that firms with substantial non-debt tax shields should also have considerable collateral assets which can be used to secure debt. It has been argued above that secured debt is less risky than unsecured debt. Therefore, from a theoretical point of view, one could also argue for a positive relationship between leverage and non-debt shield.

In fact, the empirical evidence is mixed. For example, Shenoy and Koch (1996) find a negative relationship between leverage and non-debt tax shield, while Gardner and Trcinka (1992) find a positive one. They use total depreciation from the firm's profit and loss account divided by total assets as an empirical measure for non-debt tax shield. Alternatively, they also apply the ratio of depreciation over operating profit.

2.6.7 UNIQUENESS AND INDUSTRY CLASSIFICATION: In a theoretical model, Titman (1984) opines that a firm's capital structure should depend on the uniqueness of its product. If a firm offers unique products or services, its consumers may find it difficult to find alternatives in case of liquidation, and hence, the cost of bankruptcy increases. Accordingly, the tradeoff theory predicts a negative relationship between book leverage and uniqueness. They use data for research and development (R&D) expenditures as our measure of uniqueness. Specifically, since more detailed data is not available for Swiss firms as there area of study, they apply a dummy variable that is one if the firm reports research and development expenditures, and zero if not.

2.6.8 INCOME VARIABILITY: Income variability is a measure of business risk Since higher variability in earnings indicates that the probability of bankruptcy increases we can expect that firms with higher income variability have lower leverage. In measurement of income variability, the use of ratio of the standard deviation of EBIT over total assets will be adopted. In addition to the above determinants, Okoh and Ping (2000) also extended Goal of the firm, availability of internal funds (the rate of growth of earnings/the retention policy of managers), credit limit of a firm and rate of inflation to determinants of corporate capital structure.

2.7 CAPITAL STRUCTURE AND COST OF CAPITAL

The cost of capital according to Aghion (2006), is the rate of return that the enterprise must pay to satisfy the providers of the funds. It is the weighted sum of the

cost of equity and the cost of debt. For an investment to be worthwhile, the estimated return on capital must be greater than the cost of capital. Otherwise, the risk-adjusted return on capital must be higher than the cost of capital. The cost of equity is the return that ordinary stockholders expect to receive from their investment. The cost of loan stock is the rate which the company must provide its lenders as debt servicing. The weighted average cost of capital (WACC) of a firm, is the average of the cost of its equity, preferred stock and loan stocks.

The cost of debt is a composition of paid interest (interest rate) and cost of risk (that is risk of default on the debt). In practice, interest paid by a company always include the risk-free rate plus a risk component which itself incorporates a probable rate of default. From a firm's perspective, a higher cost of debt capital can increase its attractiveness to various stakeholders and greater external control by debt-holders. This may interfere with the firm's ability to navigate effectively within its competitive environment as it indicates that the firm engages in riskier business activities as it must respond to changing competitive pressures. Thus, the use of debt financing would be an impediment subjecting managers to both the discipline and constraints of the capital markets.

The computation of cost of equity is more challenging as equity does not pay a set return to its investors. Similarly to the cost of debt, the cost of equity is broadly defined as the risk-weighted projected return required by investors, where the return is

largely unknown. The cost of equity is therefore inferred by comparing the investments to other investments with similar risk profiles to determine the "market" cost of equity. The cost of capital is often used as the discount rate, the rate at which projected cash flow will be discounted to give a present value or net present value.

2.8 CONCEPT OF FIRM PERFORMANCE

Research on firm's performance emanates from organization theory and strategic management (Murphy et al., 1996). The notion of a firm performance is used to describe the performance of an entity that is an organization which has the legal status of a company. The concept of performance is a controversial issue in finance largely due to its multidimensional meanings as opined by Jegers (1987). In analyzing a firm performance, emphasis should be made in formulating an adequate description of the concept of a firm's performance which will uncover the different dimensions upon which firm's performance should be evaluated. Webster's (1990) defines performance as "what is accomplished" Venkatraman and Varadarajan (1986) defines performance as "the time test of any strategy". In analogy with these definitions of performance, the performance of a firm can be defined as the outcome of a firm's strategy or an assessment of how well a firm has succeeded in reaching its objectives. The definition of firm performance could vary from one and another. In some cases, financial performance measures such as percentage of sales resulting from new products, profitability, capital employed and return on assets (ROA) (Selvarajan *et al.*, 2007; Hsu

et al., 2007). Besides, return on investment (ROI), earnings per share (EPS) and net income after tax (NIAT) can also be used as measures of financial performance (Grossman, 2000). Interestingly, researchers also tend to benchmark managerial accounting indicators against the financial measures in six dimension; 'workers compensation' (workers' compensation expenses divided by sales); 'quality' (number of errors in production); 'shrinkage' (e.g. inventory loss, defects, sales return); 'productivity' (payroll expenses divided by output); 'operating expenses' (total operating expenses divided by sales) (Wright et al., 2005). On the other hand, firm performance can also be measured using 'perceived performance approach' (also referred to as subjective performance measure) where Likert-like scaling is used to measure firm performance from the top management perspectives (Selvarajan, 2007).

2.9 CAPITAL STRUCTURE AND FIRM PERFORMANCE

Capital structure and firm performance are important issues for both academics and practitioners. In practice, managers of corporate firm's who are able to identify the optimal capital structure are rewarded by minimising a firm's cost of finance thereby maximising the firm's revenue. If a firm's capital structure influences a firm's performance, then it is reasonable to expect that the firm's capital structure would affect the firm's health and its likelihood of default. From a creditor's point of view, it is possible that the debt to equity ratio aids in understanding banks' risk management

strategies and how banks determine the likelihood of default associated with financially distressed firms.

One of the main factors that could influence the firm's performance is capital structure. Since bankruptcy costs exist, deteriorating returns occur with further use of debt in order to get the benefits of tax deduction. Therefore, there is an appropriate capital structure beyond which increases in bankruptcy costs are higher than the marginal tax-sheltering benefits associated with the additional substitution of debt for equity. Firms are willing to maximise their performance, and minimise their financing cost, by maintaining the appropriate capital structure or the optimal capital structure. Harris and Raviv (1991) argue that capital structure is related to the trade-off between costs of liquidation and the gain from liquidation to both shareholders and managers. So firms may have more debt in their capital structure than is suitable as it gains benefits for both shareholders and managers. However, underestimating the bankruptcy costs of liquidation or reorganization, or the aligned interest of both managers and shareholders, may lead firm to have more debt in their capital structure than they should (Harris and Raviv, 1991). Krishnan and Moyer, (1997) found a negative and significant impact of total debt to total equity (TD/TE) on return on equity (ROE). Another study by Gleason, Mathur and Mathur, (2000) found that firms capital structure has a negative and significant impact on firms performance measures return on assets (ROA), growth in

sales (Gsales), and pre- tax income (Ptax). Therefore, high levels of debt in the capital structure would decrease the firm's performance.

However, not only does a firm's level of leverage affect corporate performance and failure but also its debt maturity structure (Barclay and Smith, 1995 and Ozkan, 2002). Schiantarelli and Sembenelli (1999) investigate the effects of firms' debt maturity structure on profitability for Italy and the United Kingdom. They found a positive relationship between initial debt maturity and medium term performance. A study by Barclay and Smith (1995) provides evidence that large firms and firms with low growth rates prefer to issue long-term debt. Another study by Stohs and Mauer (1996) suggest that larger and less risky firms usually make greater use of long-term debt. They also found that debt maturity is negatively related to corporate tax, the firm's risk and earnings surprises. In other words, the choice of debt structure could have an impact on both corporate performance and failure risk. Furthermore, there are other factors, besides capital structure, that may influence firm performance such as firm size, age, growth, risk, tax rate, factors specific to the sector of economic activity, and factors specific to macroeconomic environment of the country.

First, the measures of firm performance are usually ratios fashioned from financial statements or stock market prices, such as industry-adjusted operating margins or stock market returns. These measures do not net out the effects of differences in exogenous market factors that affect firm value which are beyond management's

control. Thus, the tests may be confounded by factors that are unrelated to agency costs. As well, some studies generally do not set a separate benchmark for each firm's performance that would be realized if agency costs were minimized. They address the measurement problem by using profit efficiency as their indicator of firm performance. Profit efficiency represents a refinement of the efficiency concept earlier developed. Profit efficiency evaluates how close a firm is to earning the profit that a best-practice firm would earn facing the same exogenous conditions. This has the benefit of controlling factors outside the control of management that are not part of agency costs. In contrast, comparisons of standard financial ratios, stock market returns, and similar measures typically do not control for these exogenous factors. Even when the measures used in the literature are industry adjusted, they may not account for important differences across firms within an industry – such as local market conditions – as we are able to do with profit efficiency. In addition, the performance of a best-practice firm under the same exogenous conditions is a reasonable benchmark for how the firm would be expected to perform if agency costs were minimized.

Second, the prior research generally does not take into account the possibility of reverse causation from performance to capital structure. If firm performance affects the choice of capital structure, then failure to take this reverse causality into account may result in simultaneous-equations bias. That is, regressions of firm performance on a measure of leverage may confound the effects of capital structure on performance with

the effects of performance on capital structure. We address this problem by allowing for reverse causality from performance to capital structure. We state below two hypotheses for why firm performance may affect the choice of capital structure, the efficiency-risk hypothesis and the franchise-value hypothesis.

2.9.1 MEASURES OF FIRM PERFORMANCE

As multiple concepts of firm performance exist depending on the level of aggregation and the difference in dimensionality, it should not be surprising that multiple measures of firm performance are found in empirical literature. The appropriate measures of performance depend on the performance concept selected. Performance measures are either financial or organisational. Financial performance such as profit maximisation, maximising profit on assets, and maximising shareholders' benefits are at the core of the firm's effectiveness (Chakravarthy, 1986).

Operational performance measures, such as growth in sales and growth in market share, provide a broad definition of performance as they focus on the factors that ultimately lead to financial performance (Hoffer and Sandberg, 1987). The usefulness of a measure of performance may be affected by the objective of a firm that could affect its choice of performance measure and the development of the stock and capital market. For example, if the stock market is not highly developed and active then the market performance measures will not provide a good result. The most commonly used performance proxies are return on assets (ROA), return on equity (ROE) and return on

investment (ROI). These accounting measures representing the financial ratios from balance sheet and income statements have been used by many researchers (for example Demsetz and Lehn, 1985, Gorton and Rosen, 1995, Mehran, 1995, and Ang, Cole and Line, 2000). These are also the measure of performance used in this study.

However, there are other measures of performance called market performance measures, such as price per share to the earnings per share (P/E) (Abdel Shahid, 2003), market value of equity to book value of equity (MBVR), and Tobin's Q. Tobin's Q mixes market value with accounting value and is used to measure the firm's value in many studies (e.g., Morck, Shleifer, and Vishny, 1988, McConnel and Serveas, 1990, and Zhou, 2001). The performance measure ROA is widely regarded as the most useful measure to test firm performance (Reese and Cool, 1978 and Long and Ravenscraft, 1984, Abdel Shahid, 2003, among others). Two accounting measures, ROA and ROE, are used as proxy measures for corporate performance, and three market performance measures, P/E, MBVR, and Tobin's Q. The stock market efficiency and other economic and political factors could affect a firm's performance and its reliability (Abdel Shahid, 2003).

As earlier mentioned, the measures of firm performance are usually ratios fashioned from financial statements or stock market prices, such as industry-adjusted operating margins or stock market returns. These measures do not net out the effects of

differences in exogenous market factors that affect firm value, but are beyond management's control. We address the measurement problem by using profit efficiency as our indicator of firm performance. Profit efficiency evaluates how close a firm is to earning the profit that a best-practice firm would earn facing the same exogenous conditions. In contrast, comparisons of standard financial ratios, stock market returns, and similar measures typically do not control for these exogenous factors. Even when the measures used in the literature are industry adjusted, they may not account for important differences across firms within an industry – such as local market conditions – as we are able to do with profit efficiency. In addition, the performance of a best-practice firm under the same exogenous conditions is a reasonable benchmark for how the firm would be expected to perform if agency costs were minimized.

Summarily, a firm's performance can be affected by the capital structure choice and by the structure of debt maturity. Debt maturity affects a firm's investment options. Also, the tax rate is expected to have an impact on a firm's performance. So, investigating the impact of capital structure variables on a firm's performance will provide evidence of the effect of capital structure on firm performance.

2.9.2 CAPITAL STRUCTURE AND FINANCIAL GEARING

Financial gearing according to Anderson (2000), is the mix of long-term corporate funding provided internally by shareholders and that contributed externally by lenders. Surprisingly, there is no clear-cut definition of leverage in the academic literature. The

specific choice depends on the objective of the analysis. A company is however said to be unlevered as long as it has no debt, while a firm with debt in its capital structure is said to be leveraged (Song,2005). The easy but high-risk increases in stock prices due to levering at banks in the United State has been blamed according to Robert (2009) for the unusually high rate of pay for top executives during the financial crisis of 2007-2010, since gain in stocks are often rewarded regardless of method.

The fact that an optimal capital structure has not been found is an indication of some flaws in the logic. An appreciation of the factors that influence a company's gearing and the effects of gearing on shareholders returns are vital to interpreting gearing ratios.

Rajan and Zingales (1995) apply four alternative definitions of leverage. Because we think their approach is the cleanest in the literature. The first and broadest definition 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 does not provide a good indication of whether the firm is at risk of default in the near future. In addition, since total liabilities also include items like accounts payable, which are used for transaction purposes rather than for financing, it is likely to overstate the amount of leverage. In addition, this measure of leverage is potentially affected by provisions and reserves, such as pension liabilities.

A second definition of leverage is **the ratio of debt (both short term and long term) to total assets**. This measure of leverage only covers debt in a narrower sense (i.e., interest-bearing debt) and excludes provisions.

However, it fails to incorporate the fact that there are some assets that are offset by specific non debt liabilities. For example, an increase in the gross amount of trade credit is reflected in a reduction in this measure of leverage. Because the level of accounts payable and accounts receivable may differ across industries, Rajan and Zingales (1995) suggest using a measure of leverage unaffected by the gross level of trade credit.

A third definition of leverage is **the ratio of total debt to net assets**, where net assets are total assets less accounts payable and other current liabilities.

This measure of leverage is unaffected by non-interest bearing debt and working capital management. However, it is influenced by factors that have nothing to do with financing. For example, assets held against pension liabilities may decrease this measure of leverage. In Switzerland this should not be important because pension liabilities need not be expensed in the balance sheet. In contrast to most other continental European countries, pension money is managed in separated entities. Our fourth and final definition of leverage is the **ratio of total debt to capital**, where capital is defined as total debt plus equity. This measure of leverage looks at the capital employed and thus best represents the effects of past financing decisions. It most

directly relates to the agency problems associated with debt, as suggested by Jensen and Meckling (1976) and Myers (1977).

2.10   TYPES OF LEVERAGE

There exist two major types of leverage i.e. Operating and Financial Leverage. The relationship of operating leverage and financial leverage with the variability of a firm's performance has been widely discussed in finance literature Akintoye, 2008 .

2.10.1 OPERATING LEVERAGE

Gaius(2007) Opines that operating leverage is created by fixed operating costs, such as general administrative overhead expenses, contractional employees' salaries and mortgage or lease payment, these tend to elevate business risk. The impact of operating leverage is evident, when a given percentage changes in net sales results in a greater percentage change in operating income (EBIT).

Operating leverage is simply the extent to which a firm uses fixed costs in producing its goods or offering its services. This also relates to the result of different combinations of fixed costs and variable costs. Specifically, the ratio of fixed and variable costs that a company uses determines the amount of operating leverage employed. A company with a greater ratio of fixed to variable costs is said to be using more operating leverage. If a company's variable costs are higher than its fixed costs, the company is said to be using less operating leverage. The way that a business makes

sales is also a factor in how much leverage it employs. A firm with few sales and high margins is said to be highly leveraged. On the other hand, a firm with a high volume of sales and lower margins is said to be less leveraged.

MEASURING DEGREE(S) OF LEVERAGE(S)

Akintoye, I.R. (2008) stated the measure of financial leverage as:

Degree of Operating Leverage (DOL)

Earlier on, we defined the degree of operating leverage (DOL) as the percentage change in EBIT relative to a given change in turnover, i.e:

DOL = % Change in BIT
           % Change in Turnover

DOL = % Δ EBIT/EBIT
           % Δ Turnover/ Turnover

The following equation is also used for calculating DOL:

DOL = Q(S – V)
           Q (S – V) – F

Where Q is the unit of output, S is the unit selling price, V is the unit variable cost, and F is the total fixed costs.

2.10.2 FINANCIAL LEVERAGE

Financial leverage measures a firm's exposure to financial risk. Financial leverage involves changes in shareholders' income in response to changes in operating profits, resulting from financing a company's assets with debt or preferred stock. This relates to fixed debt costs and it also increases a firm's financial risk. Financial leverage takes the

form of a loan or other borrowings (debt), the proceeds of which are (re)invested with the intent to earn a greater rate of return than the cost of interest. The total leverage of a firm is given by a firm's use of both fixed operating costs and debt costs. This implies that, a firm's total risk equals business risk plus financial risk Brealey and Myers (2003). Financial leverage can accelerate EPS under favourable economic conditions but depresses EPS when the goings is not good for the firm. The unfavourable effect of financial leverage on EPS is more severe with more debt in the capital structure when EBIT is negative. Similarly the firm's financial leverage can increase shareholders' return and as well could increase their risk.

According to Pandey (1999), the financial leverage employed by a company is intended to earn more on the fixed charges funds than their costs. The surplus (deficit) will increase (or decrease) the return on the owners equity, referred to as a double-edged sword, financial leverage provides the potentials of increasing the shareholders' wealth as well as creating the risks of loss to them. Therefore, the degree of financial leverage indicates the percentage change in EPS emanating from a unit percentage change in EBIT. In general, a firm's short term financing needs are influenced by current sales growth and how effectively and efficiently the firm manages its net working capital. Note that on-going short term financing needs may reflect a need for permanent long term financing, including an evaluation of the appropriate mix and the use of debt and equity, that is, the capital structure.

Mandelkar *et al* (1984) observe that, DOL and DFL combine to magnify a given percentage change in sales to a potentially much greater percentage in EBIT. In fact, operating and financial leverages together cause wide fluctuation in EPS for a given change in sales. If a company employs a high level of operating and financial leverage, even a small change in the level of sales, will have dramatic effect on EPS. A company with cyclical sales will have a fluctuating EPS, but the swings in EPS will be more pronounced if the company also uses a high amount of operating and financial leverage. Therefore, there is the need to combine degree of operating and financial leverages to see the effect of total leverage on EPS associated with a given change in turnover as a result of improved purchasing power enabled by capital structure.

DEGREE OF FINANCIAL LEVERAGE (DFL)

From the foregoing the financial leverage affects the EPS, when the economic conditions are good and the firm's EBIT is increasing, its EPS increases faster with more debt in the capital structure. DFL is defined as the percentage in EPS due to a given percentage change in EBIT.

$$DFL = \frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$$

$$DFL = \frac{\% \Delta \text{ EPS/EPS}}{\% \Delta \text{ EBIT/ EBIT}}$$

2.10.3 COMBINED/TOTAL LEVERAGE.

More so, the two types of leverage explored above can be combined into an overall measure of leverage called total leverage. Recall that operating leverage is concerned

with the relationship between sales and operating profits, and financial leverage is concerned with the relationship between profits and earnings per share. 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.

The degree of total leverage is defined as the percentage change in stockholder earnings for a given change in sales, and it can be calculated by multiplying a company's degree of operating leverage by its degree of financial leverage. Consequently, a company with little operating leverage can attain a high degree of total leverage by using a relatively high amount of debt.

A firm that operates with both high operating and financial leverage makes for a risky investment. A high operating leverage means that a firm is making few sales but with high margins. This can pose significant risks if a firm incorrectly forecasts future sales. If a future sales forecast is slightly higher than what actually occurs, this could lead to a huge difference between actual and budgeted cash flow, which will greatly affect a firm's future operating ability. The biggest risk that arises from high financial leverage occurs when a company's ROA does not exceed the interest on the loan, which greatly diminishes a company's return on equity and profitability.

DEGREE OF COMBINED LEVERAGE (DCL)
The degrees of operating and financial leverages can be combined to see the effect of total leverage on the wealth of shareholders as demonstrated by EPS associated with a

given change in turnover. The degree of combined leverage (DCL) is calculated, given by the following equation:

$$\frac{\% \text{ change in EBIT}}{\% \text{ change in Turnover}} \quad X \quad \frac{\% \text{change in EPS}}{\% \text{ change in EBIT}} = \frac{\% \Delta \text{ in EPS}}{\% \Delta \text{ in Turnover}}$$

Another way of expressing the degree of combined leverage is as follows:

$$DCL = \frac{Q(S-V)}{Q(S-V)-F} \quad X \quad \frac{Q(S-V)-F}{Q(S-V)-F-INT} = \frac{Q(S-V)}{Q(S-V)-f-INT}$$

Where Q(S-V) is contribution, and Q(S-V)-F-INT, is the profit after interest but before taxes.

Aima (2006), a Canadian Strategic Paper Series also highlighted other types of leverage as constructive and Instrument leverage explained thus;

Constructive Leverage: This is created by combining securities in a portfolio in a certain manner. How one constructs a portfolio will have a significant effect on overall portfolio risk, depending on the amount and type of diversification in the

portfolio and the type of hedging applied (e.g., offsetting some or all of the long positions with short positions).

Instrument Leverage: This reflects the intrinsic risk of the specific securities selected, as different instruments have different levels of internal leverage

(for example, ₦100,000 invested in equity options versus ₦100,000 invested in government bonds).

Fama and French (2000) argue that, most of the theoretical predictions apply to book leverage. Similarly, Thies and Klock (1992) suggest that book ratios better reflect management's target debt ratios. The market value of equity is dependent on a number of factors which are out of direct control for the firm.

Therefore, using market values may not reflect the underlying alterations within the firm. In fact, corporate treasurers often explicitly claim to use book ratios to avoid "distortions" in their financial planning caused by the volatility of market prices. A similar rational is often heard from rating agencies. From a more pragmatic point of view, the market value of debt is not readily available. However, Bowman (1980) documents a high correlation between market and book values of leverage. It should therefore come as no surprise that most previous literature relates to the book value of leverage. Nevertheless, we also look at quasi-market leverage, where the book value of equity is replaced by the market value of equity, but value debt at its book value.

A final adjustment accounts for cash balances. This seems particularly important, because many firms hold substantial cash and short-term investments. This needs not be inefficient, but may rather be interpreted as slack in the context of the Myers (1984), which can be used to invest in positive net present value projects that come along without approaching the capital market. Alternatively, the firm could use the funds and immediately repay debt or repurchase its own stock. As a firm outsider, it is hard to assess how much cash is needed to run a business. Following Rajan and Zingales

(1995), we thus interpret cash balances as excess liquidity and compute adjusted leverage ratios by subtracting cash and cash equivalents from both the numerator and the denominator of the ratios introduced above.

2.10.4   ADVANTAGES/ DISADVANTAGES OF GEARING

The advantages and disadvantages of gearing according to Anderson (2000) are:

2.10.4 (a)   The advantages of gearing include:

i. Gearing Effect- It is possible to greatly increase returns to shareholders through the use of loan capital resulting from the high financial risk placed on shareholders' investment.

ii. Tax Relief- Loan interest (unlike dividends) is an allowable expense for taxation purposes meaning that, companies only have to meet the net (after tax) cost of interest charges.

iii. Lower Required Return- Investors usually require a lower rate of return from loan capital due to lower risk attaching to debt. This is the product of lenders obtaining security on their loans and also the fact that in moment of liquidity, loan creditors are ahead of ordinary shareholders in the queue for payments.

iv. Assets Matching- Where a loan is employed to finance the purchase of a particular asset, the period of the loan may be matched against the expected life of the asset, enabling the asset to generate returns to service the interest payments.

v. No Dilution of Control- By issuing debt, each shareholder's proportionate share of the company remains intact.

2.10.4(b) The disadvantages of gearing include:

i. Financial Risk- Whilst all firms face business risk (general risk within their industry e.g all house builders suffer from bad weather, increase in the price of land/materials/labour, low consumer confidence, problem in obtaining land to build houses, etc) financial risk is a company-specific risk resulting from the way in which assets are financed. With debt-finance comes the dual obligation to pay interest charges at regular intervals and to make capital repayments at particular dates.

ii. Loan Covenants- This is designed to protect the lender's investment in the   business, these place restriction on the company's actions, present and   future.

iii. Shareholders Returns- Facing increased financial risk from a higher level of gearing, shareholders are likely to react by demanding higher returns from their investment. This may offset any cost savings gained by the company from the use of loan capital.

iv. Cash flow requirement- A negatively geared portfolio will require exogenous cash flow support.

2.10.4(c)   MEASURES OF FINANCIAL GEARING/LEVERAGE

As there is no clear cut concept of capital structure, so is the absence of consensus on measures of corporate capital structure in investment industry (Karavas *et al*, 2004). There are various measures of leverage, which can be classified as accounting

based measures, market-value measures and quasi-market value measures as supported by Loof, 2003. When choosing a measure of leverage, it is useful to keep in mind that the theoretical framework for the relationship between leverage and performance is based on market values of leverage. Since market values of leverage may be difficult to obtain, accounting based measures are often applied as proxies. Rajan & Zingales (1995) discuss various accounting based measures of leverage and their informational content. They also suggest that the choice of measure should be based on the objective of the analysis. For instance, the ratio of total liabilities to total assets can be considered as a proxy for what is left for shareholders after liquidation, but is not a good indication of the firm's risk of default in the near future. Also, since total liabilities include such balance sheet items as accounts payable, which are used for transactions purposes rather than for financing, it may overstate the amount of leverage. This measure can be improved by subtracting accounts payable and other liabilities from total assets. There is still one issue of concern since the measure contains liabilities that are not related to financing, e.g., pension liabilities, thereby underestimating the size of leverage. The ratio of total debt to capital, where capital is defined as total debt plus equity, is assumed to solve this problem and can be seen as the best accounting based proxy for leverage (Rajan, Zingales,1995). Aima (2006) opines that, leverage may be quoted as a ratio of assets to capital or equity, as a percentage (e.g., 400%), or as an incremental percentage (e.g., 300%). Note that a ratio of assets to capital of 1:1 or less, or a leverage

percentage of 100% or less, means that NO leverage is used. Therefore, any incremental percentage greater than 100% means that leverage is employed.

Aima (2006) also stated the measures of leverage as:

Measure 1:
Gross Market Exposure = (Long + Short) X 100%
Capital or Equity
May also be defined as:
Gross Leverage = (Longs + Shorts)
Net Asset Value
OR
Leverage = Ratio of "X" times Capital or Equity

Measure 2:
Net Market Exposure = (Longs - Shorts) X 100%
Capital or Equity
May also be defined as:
Net Leverage = (Longs - Shorts)
Net Asset Value
OR
Leverage = Ratio of "X" times Capital or Equity

Rajan and Zingales (1995) state the various measures of leverage and there pros and cons as:

1. Total Liabilities/Total assets

Though, not a good indication of whether the firm is at risk of default in the near future. May overstate leverage since total liabilities include items like accounts payable, untaxed reserves etc. However, as it does not include liabilities like untaxed reserves or account payable (for transaction purposes).

2. Total debt/Total Assets

This measure is affected by level of trade credit (i.e unpaid bills makes up bulk of accounts payable). However, it's not influenced by trade credit (Net Assets=Total assets-Accounts payable-other liabilities).

3. Total debt/ Net assets.

This measure is affected by factors that have nothing to do with financing e.g assets held against pension liabilities. This method is probably the best representation of past financing decisions.

Titman and Wessels (1988) in their study of capital structure choice discussed six measures of financial leverage: long-term, short-term and convertible debt divided by market and book values of equity respectively. It is though rather common that due to data limitations, empirical studies must use only leverage measures in terms of book value rather than market value of equity as presented in the study of Titman and Wessels. Though, some hints can be given based on the fact that when both booked and market value of equity are available, they are both used simultaneously based on simple reason that information signaled in book value and market value is informative in different aspects (Loof, 2003). In contrast, Titman and Wessels (1988) refers to an earlier study by Bowman (1980), which demonstrated that the cross sectional correlation between the book value and market value of debt is very large. Brealey and Myers (2003) argue that it should not matter much if only book values are used, since

the market value includes the value of intangible assets generated by for instance research and development, staff education, advertising etc. These kinds of assets cannot be sold with easiness and in fact, if the company goes down, the value of intangible assets disappear altogether. Hence, misspecification due to using of book value measures may be fairly small or even totally unessential. Irrespective of market or book value, we still face a problem of choosing an appropriate leverage measure. Rajan and Zingales (1995) in an important paper argued that the choice of the most relevant measure depends on the objective of the analysis. Though, they concluded that, "the effects of past financing decisions is probably best represented by the ratio of total debt over capital (defined as total debt plus equity)"

2.11   FOUNDATION OF CAPITAL STRUCTURE THEORIES

Determining a firm appropriate financing mix has been one of the most extensively researched areas in corporate finance. Since the most cited publication of Modigliani and Miller (1958:1963) on the irrelevance of capital structure in investment decisions, a rich theoretical framework has emerged in which debt or equity is used as a signaling mechanism or strategy tool in modeling firm's capital structure choices under different assumptions. Many theories (such as Trade off theory and asymmetric information) as discussed have also been structured and much remains to understand the link between theory and practice of capital structure (Bancel and Mittoo 2002). Though, the Modigliani and Miller theorem is generally viewed as a purely theoretical result

since it assumes away many important factors in the capital structure decision. The theorem states that, in a perfect market, the value of a firm is unaffected by how a firm is financed. This result then provides the base with which to examine real world reasons why capital structure is relevant. That is, a company's value is affected by the capital structure it employs.

The important question then facing companies in need of new finance is whether to raise debt or equity capital. This issue of finance has been identified as an immediate reason for a business failing to start or to progress. It is therefore imperative for Nigerian firms be able to finance their activities and grow over time if they are ever to play an increasing and predominant role in creating value added, providing employment as well as income in term of profit, dividends and wages to households, expanding the size of the directly productive sector in the economy, generating tax revenue for the government and facilitating poverty reduction through fiscal transfer and income from employment and firms ownership.

Therefore, in presenting the most important theories in this study, the optimal capital structure will also be presented to serve as a base, presenting how the capital structure ought to be according to pure financial issues in contrast to later presented theories explaining how in reality the capital of Nigerian quoted manufacturing firms are structured.

2.11.1 OPTIMAL CAPITAL STRUCTURE IN THE FINANCIAL THEORY

Gaius (2007) observes that the optimal capital structure is one, with an equity that minimizes the firm's cost of capital and maximizes its stock price. It is important to note here that a non-optimal capital structure may lead to higher financing projects that would have increased shareholders' wealth with an optimal financing by the firm. The effect of different capital structure and differing business risk are reflected in a firm's income statement. Operating leverage tends to magnify the effect of fluctuating sales and produce a percentage change in operating income (EBIT) larger than the changes in sales (Akintoye, 2007).

In practice, firms tend to use target capital structure a mix of debt, preferred stock and common equity with which the enterprise plans to raise needed funds. Since capital structure policy involves a strategic trade-off between risk and expected return, the optimal capital structure policy must seek a prudent and informed balance between risk and return. The firm must consider its business risk, tax positions, financial flexibility and managerial conservatism or aggressiveness. While these factors are crucial in determining the target capital structure, operating conditions may cause the actual capital structure to differ from the optimal capital structure. Therefore the target capital structure should be used as a guide towards an ideal capital structure that minimizes the WACC while maximizing the shareholders' wealth (Gaius, 2007).The problem of optimization of corporate capital structure is one of the central problems of corporate

finance and has important applications for practical decision making concerning financing of current operations and investment projects of corporations. The origin of financing decision problem as earlier stated was initialized by the seminal papers of Modigliani and Miller (1958, 1963), who studied the influence of tax advantage of debt financing on firms capital structure decisions. These papers as well as others such as that of Scott (1976), Kraus and Lichtenberger (1973), Baxter (1967), and Brennan and Schwartz (1978) have formed the common opinion that optimal proportion of stockholders own and borrowed capital must balance out positive properties of debt, following from the existence of tax shelter and its negative properties consisting in increase of bankruptcy risk as a share of debt capital increases. In consequent investigations in the middle of 1970th, other mechanisms were revealed that could influence the firm's equity to debt ratio. These mechanisms arise from managers equity holders and equity holders, debt holders conflicts of interests and information asymmetry of these parties and was first described in Jensen and Meckling (1976), Ross (1977), Leland and Pyle (1977). The mechanisms are discussed in literature mainly on a qualitative level as determinants of corporate capital structure.

After forty years of research of the problem, relevant literature includes hundred of titles containing many interesting and useful findings, though not in all its directions achievements are equally sound. Leland (1988) in his Presidential Address to the

participants of fifty eighth annual meeting of the American Finance Association cited that:

> *"Financial economics has a rich literature analyzing the capital Structure decision in qualitative terms. But it has provided relatively little specific guidance. In contrast with the precision offered by the Black and Scholes option pricing model and its extensions, the theory addressing capital structure remains distressingly imprecise. This has limited its application to corporate decision making".*

This opinion is authoritative, because the author himself developed one of few fruitful approaches in the area of quantitative assessments of optimal capital structure (Leland (1994, 1998), Leland and Toft (1996). According to the approach, the dynamics of corporate (share) value is represented as a diffusion process in continuous time. This allows derivation of the partial differential equations for a market value of a firm, market value of a corporate debt and various functions of a firm's value. The use of the diffusion model allows obtaining in some cases closed form decisions and tracing the dependence of the optimal capital structure on various parameters used in the model. This is the remarkable advantage of the approach, though the approach has some drawbacks. A good survey of the related studies one can find in Leland (1998). The most important in my opinion consists in fact that the obtained conclusions concerning optimal capital structure are insufficiently firm-specific meaning that, the diffusion approach like other tax-based approaches is based on the fact that, the amount of debt a firm can use is limited by the increasing probability of its bankruptcy.

Clearly, recommendations concerning the choice of an optimal capital structure must be highly specific for a firm, its business, its current financial position and parameters of debt (cost of service, maturity horizon etc). Scholars investigating the problem of bankruptcy prediction identify the set of fundamental factors that influence the possibility of corporate default: corporate profitability, current and cumulative (retained earnings position), operational activity, stability of earnings, liquidity, working capital position, interest coverage and size of a corporation . In Altman's studies of 1968 and 1977, various cash flow variables relative to total assets - in Aziz *et al*. (1988) model; market return variables - in Clark and Weinstein (1983) model. Altman (1982) identified also a set of macroeconomic parameters influencing the probability of corporate bankruptcy. Being tightly linked with the probability of corporate bankruptcy, optimal Debt / Equity ratio must depend on the same set of factors. There are too few possibilities to account for the factors in the diffusion model. Diffusion model determines optimal capital structure in dependence on the value of a corporation and its volatility only. The recommendations appear to be too common. The results are in some (unknown) way averaged with respect of other influencing factors. This paper proceeds with the study of the problem of optimization of corporate capital structure described in Philosophov (1999). The main idea of the approach consists in direct use of estimates of probabilities of a firm's bankruptcy in calculation of its future value. To determine optimal amount of debt, one must first assess probabilities of a

firm's bankruptcy at various moments in future (in dependence on the amount of debt, other indices of a firm's current financial position and macroeconomic factors) and then calculate how these probabilities influence the corporate (share) value. The above study was based on Altman's type prognosis to some degree adjusted to accounting for time remaining until the bankruptcy. The incentive for the new investigation appears due to the new issues in probabilistic bankruptcy prognosis presented in Philosophov (2002). The authors present qualitatively different approach to bankruptcy prognosis from that described in Altman (1980), though both studies are based of prognostic factors derived from accounting information (balance sheets and income statements).

The series of inducing factors for the preference of one form of financing to the other can briefly be described as:

Asset Type: A company with lots of tangible assets will have a greater indebtedness level than the one with many intangible assets.

Uncertainty of operation income: A company with uncertainty of its operational income will have less debt in its financing mix (capital structure).

Income Tax: The bigger the incomes tax of an organization, the greater its leverage level (due to income tax shield).

Flexibility Needs: The higher an organization needs for its future flexibility, the lesser its debt component in its capital structure.

Creditors difficulty in monitoring management's actions: The more difficult, the lesser its debt level.

2.12 THEORIES OF CAPITAL STRUCTURE

After the pioneering work of Modigliani and Miller (1958) on capital structure, some conflicting theories of optimal capital structure have been developed. They are namely: Static trade-off, Pecking order, and Agency cost theories, Modigliani and Miller theory.

2.12.1 THE STATIC TRADE-OFF THEORY

This theory of capital structure (also referred to as the tax based theory) states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant (e.g., Baxter, 1967 and Altman 1984, 2002). In view of this theory, issuing equity means moving away from the optimum and should therefore be considered bad news. According to Myers (1984), firms adopting this theory could be regarded as setting a target debt-to-value ratio with a gradual attempt to achieve it. Myers (1984), however, suggests that managers will be reluctant to issue equity if they feel it is undervalued in the market. The consequence is that investors perceive equity issues to only occur if equity is either fairly priced or overpriced. As a result investors tend to react negatively to an equity issue and management is reluctant

to issue equity. Um (2001) suggests that a high profit level gives rise to a higher debt capacity and accompanying tax shields. Hence, it is expected that a positive relationship should exist between profitability and financial leverage. Firms with high levels of tangible assets will be in a position to provide collateral for debts. If the company then defaults on the debt, the assets will be seized but the company may be in a position to avoid bankruptcy. It is expected, therefore, that companies with high levels of tangible assets are less likely to default and will take on relatively more debt resulting in a positive relationship between tangibility and financial leverage. While the majority of empirical studies in developed countries (Titman and Wessels, 1988; Rajan and Zingales, 1995, among others) find a positive relationship between tangibility and leverage, the empirical studies in developing countries find mixed relationship. For instance, whilst the work of Wiwattanakantang (1999) in Thailand, and work of Um (2001) in Korea report a positive relationship between tangibility and leverage, other studies such as Booth *et al*, (2001) in ten developing countries, and Huang and Song (2002) in China, find that tangibility is negatively related to leverage. It is argued, however, that this relation depends on the type of debt. Nuri (2000) argues that companies with a high fixed asset ratio tend to use more long-term debt. Bevan and Danbolt (2000 and 2002) also find a positive relationship between tangibility and long-term debt, whereas a negative relationship is observed for short-term debt and tangibility in the UK. Antoniou *et al*, (2002) argue that several studies find that the size

of a firm is a good explanatory variable for its leverage ratio. Bevan and Danbolt (2002) also argue that large firms tend to hold more debt, because they are regarded as being 'too big to fail' and therefore receive better access to the capital market. Hamaifer et al, (1994) argue that large firms are able to hold more debt rather than small firms, because large firms have higher debt capacity. Empirical studies find mixed evidence. Wiwattanakantang (1999), Booth *et al*, (2001), Pandey (2001), Al-Sakran (2001), and Huang and Song (2002) find a significant positive relationship between leverage ratios and size in developing countries. While Rajan and Zingales (1995) find a positive relationship between size and leverage in G-7 countries, Titman and Wessels (1988) report a positive correlation between the size of the firm and the total debt ratio and the long-term debt ratio. On the other hand, Bevan and Danbolt (2002) report that size is found to be negatively related to short-term debt and positively related to long-term debt. The trade-off theory of the capital structure suggests that a firm's target leverage is driven by three competing forces: (i) taxes, (ii) costs of financial distress (bankruptcy costs), and (iii) agency conflicts.

Taxes add debt to a firm's capital structure and lower its (corporate) tax liability and increase the after-tax cash flow available to the providers of capital.
Thus, there is a positive relationship between the (corporate) tax shield and the value of the firm. Bankruptcy costs when a firm raises excessive debt to finance its operations, it may default on this debt. However, it is not bankruptcy per se that is the problem. If the

bond payments are not met when they become due and the bond defaults, the firm is simply transferred to the bondholders. However, there are deadweight (opportunity) costs that arise in the case of corporate bankruptcy. They come in two forms, direct and indirect deadweight costs. Direct out-of-pocket expenses for the administration of the bankruptcy process (legal fees and management time) are relatively small compared to the market values of the firms. However, there are economies of scale with respect to direct bankruptcy costs. While they seem of less important for large firms, they can be substantial for small firms. Indirect bankruptcy costs can be significant for both large and small firms. Once the firm runs into financial distress, it is obvious that the firm's investment policy changes, which results in a reduction of firm value. Most obvious, the firm may decide on shortsighted cutbacks in research and development, maintenance, advertising, and educational expenditures that ultimately result in lower firm values. Besides, bankruptcy hampers conduct with customers. They are usually lost because of both fear of impaired service and loss of trust. To sum up, the trade-off theory of the capital structure posits that there is an optimal debt-equity ratio. Firms attempt to balance the tax benefits of higher leverage and the greater probability (and the possibly higher associated costs) of financial distress.

2.12.2 PECKING ORDER THEORY

Pecking order theory (also referred to as the information asymmetry theory) was proposed by Myers. Myers opine that firms prefer to finance new investment, first internally with retained earnings, then with debt, and finally with an issue of new equity. Myers argues that an optimal capital structure is difficult to define as equity appears at the top and the bottom of the 'pecking order'. Internal funds incur no flotation costs and require no disclosure of the firm's proprietary financial information that may include firm's potential investment opportunities and gains that are expected to accrue as a result of undertaking such investments.

The pecking order theory is about what firm's management prefer; a pecking order of alternative sources of finance that firm faces (Myers, 1984; Wramsby & Österlund, 2004). First, firms chose internal finance that is using profits from previous years. Second, if there is no internal finance available, will firms chose to lend money from credit institutions such as banks. Third, only as a last option will firms issue new shares. Basically, the pecking order theory says that management favours internal financing to external financing (Wramsby & Österlund, 2004).

Myers (1984) discusses in his article the capital structure puzzle why this pecking order is used by numerous firms, because it clearly goes against shareholder's interests in returns. In a managerial view it has been stated that "professional managers avoid relying on external finance because it would subject them to the discipline of the capital

market" (Myers, 1984). Another important issue is transaction costs; internal financing is cheaper than external funding since the later is associated with great costs (Wramsby & Österlund, 2004).

The pecking order theory tries to explain why most profitable firms use internal financing; the easy reason for this is that they do not need to make use of external funding. The other extreme, less profitable businesses do not possess enough internal capital and have to seek for external funding (Myers, 1984). Hutchinson (1995) points out that profit retention has an opportunity cost. The more business owners are willing to risk, the higher the possible profits.

The pecking order approach is relevant for small businesses since costs associated with external financing are higher for small firms than for large businesses (Chittendale *et al*.,1996). Sogrob-Mira (2005) argues that the pecking order theory could easily be applied on SMEs since managers usually are at the same time shareholders and they do not want to lose control of their businesses. The information costs associated with debt and equity issues has led Myers (1984) to argue that a firm's capital structure reflects the accumulation of past financial requirements. Bevan and Danbolt (2002) state that, the more profitable firms should hold less debt because high levels of profits provide a high level of internal funds. Consistent with the pecking order theory, work of Titman and Wessels (1988), Rajan and Zingales (1995), Antoniou *et al,* (2002) and Bevan and Danbolt (2002) in developed countries, Booth et al, (2001), Pandey (2001), Um (2001),

Wiwattanakantang (1999), Chen (2004) and Al-Sakran (2001) in developing countries all find a negative relationship between leverage ratios and profitability. Um (2001) argues that growing companies' funding pressure for investment opportunities is likely to exceed their retained earnings and, according to the 'pecking order' are likely to choose debt rather than equity. Thus, if the information asymmetry theory is pertinent in Libya, a positive relationship is expected between financial leverage and growth. Booth *et al*, (2001) argue that this relation is generally positive in all countries in their sample, except for South Korea and Pakistan. Pandey (2001) finds a positive relationship between growth and both long-term and short-term debt ratios in Malaysia. In contrast to the trade-off theory, there is no well-defined target leverage ratio in the pecking order theory. There are two kinds of equity, internal and external; one is at the top of the pecking order and one at the bottom. A firm's leverage ratio thus reflects its past cumulative requirement for external finance. The pecking order theory can explain why the most profitable firms tend to borrow less; they simply do not need external funds. Less profitable firms issue debt because they do not have sufficient internal funds and because debt has lower flotation and information cost compared to equity. Debt is the first source of external finance on the pecking order. Equity is issued only as a last resort, when the debt capacity is fully exhausted. Tax benefits of debt are a second-order effect. The debt ratio changes when there is an imbalance between internal funds and real investment opportunities.

2.12.3   THE AGENCY COST THEORY

This theory of capital structure states that an optimal capital structure will be determined by minimizing the costs arising from conflicts between the parties involved. Jensen and Meckling (1976) argue that agency costs play an important role in financing decisions due to the conflict that may exist between shareholders and debt holders. If companies are approaching financial distress, shareholders can encourage management to take decisions, which in effect, expropriate funds from debt holders to equity holders. Sophisticated debt holders will then require a higher return for their funds if there is potential for this transfer of wealth. Debt and the accompanying interest payments, however, may reduce the agency conflict between shareholders and managers. Debt holders have legal redress if management fails to make interest payments when they are due, hence managers concerned about potential loss of job, will be more likely to operate the firm as efficiently as possible in order to meet the interest payments, thus aligning their behaviour closer to shareholder wealth maximisation.

Jensen and Meckling (1976) see agency costs as the sum of the monitoring expenditures by the principal, bonding costs by the agent, and a residual loss. Jensen and Meckling (1976) argue that the use of secured debt might reduce the agency cost of debt. Um (2001), however, suggests that if a firm's level of tangible assets is low, the management for monitoring cost reasons may choose a high level of debt to mitigate equity agency costs. Therefore, a negative relationship between debt and tangibility is

consistent with an equity agency cost explanation (Um, 2001). Um also argues that firm size may proxy for the debt agency costs (monitoring cost) arising from conflicts between managers and investors. Um (2001) emphasizes that the monitoring cost is lower for large firms than for small firms. Therefore, larger firms will be induced to use more debt than smaller ones.

In much of the corporate finance literature it is assumed that agency costs are important determinants of firms' capital structure (see Harris and Raviv (1991)). Three forms of agency problems have received particular attraction thus, (i) risk shifting (or asset substitution), (ii) the underinvestment problem and (iii) the free cash flow hypothesis.

(i) RISK SHIFTING: The risk shifting or bondholder expropriation hypothesis asserts that stockholders have the incentive to exploit bondholders once the debt is issued. Managers, whose ultimate responsibility is to the stockholders, are likely to make investments that maximize stockholder wealth rather than total firm value. In particular, because equity can be viewed as a call option, managers tend to accept risky negative net present value (NPV) projects in which the value decrease consists of a decrease in the value of debt and a smaller increase in the value of equity. This is known as the overinvestment problem. It is well known from option pricing theory that the sensitivity of the value of an option with respect to volatility (i.e., the option Vega) is highest for at the- money option. This implies that the stockholder-bondholder expropriation conflict

is most pronounced for financially distressed firms. Therefore, the asset substitution conflict is often classified as indirect bankruptcy costs.

Obviously, the expropriation potential makes it difficult for firms to raise debt at fair prices. Ex ante bond investors get their fair compensation. Because they correctly anticipate stockholders' future behavior, they demand a premium payment they would not demand if the firm could plausibly commit not to expropriate bondholders. While bondholders are ex ante equally well off, stockholders face the opportunity costs of not being able to issue debt (with its other advantages, such as tax savings). This effect, also known as the asset substitution effect, is an agency cost of debt financing. Given that the expected cost of opportunistic behavior is incorporated into the price of debt, Jensen and Meckling (1976) posit that the firm trades off these agency costs of debt against the benefits of debt. The ex ante solution to the overinvestment problem is thus that the optimal capital structure is tilted towards equity.

(ii)   UNDERINVESTMENT PROBLEM: Refers to the tendency of managers to avoid safe positive net present value projects in which the value increase consists of an increase in the value of debt and a smaller decrease in the value of equity. Myers (1977) demonstrates that there is a rational basis for this shortsightedness when stockholders have no chance to receive any proceeds of a valuable project when the debt comes due. Hence, the firm will refuse to accept good investment opportunities ex post, reducing the firm value ex ante.

Brealey and Myers (2000) argue that the underinvestment problem theoretically affects all firms with leverage, but it is again most pronounced for highly leveraged firms in financial distress. The greater the probability of default, the more will bondholders gain from value increasing projects. In addition, companies whose value consists primarily of investment opportunities, or growth options, are most likely to suffer from the underinvestment problem. As with the asset substitution problem, the underinvestment problem tilts the capital structure towards equity. Mature firms with lots of reputation but few profitable investment opportunities, whose value comes mainly from assets in-place, find it optimal to choose safer projects. In contrast, young firms with many growth opportunities and little reputation may choose riskier projects. If they survive without default, they will eventually switch to the safe project. Due to their lower costs of debt, mature firm can thus run higher leverage ratios than firms whose value is derived primarily from growth opportunities.

(iii)   THE FREE CASH FLOW HYPOTHESIS: Easterbrook (1984) and Jensen (1986) argue that for companies that largely consist of assets-in-place and that produce stable operating cash flow, high leverage can add value by improving managers' financial discipline. Free cash flow is cash flow in excess of that required to fund all projects that have positive net present values. Firms with substantial free cash flow face conflicts of interest between stockholders and managers. The problem is how to motivate managers to distribute excess funds rather than investing it below the cost of

capital or wasting it on organizational inefficiencies. Even worse, managers can invest less effort in managing firm resources, but transfer firm resources to their personal benefits, for instance by consuming perquisites such as corporate planes and building "empires".

Instead of investing into low-return projects, managers of firms with stable free cash flows can pay out cash by increasing dividends or repurchasing stock. However, leverage is a more effective means for addressing the free cash flow problem. This is because contractually obliged payments of interest and principal are a more credible signal than discretionary dividend payments or share repurchases in giving back excess capital to investors. Bondholders can take the firm into bankruptcy court if managers do not maintain their promise to make the interest and principal payments. Accordingly, debt reduces the agency cost of free cash flows for mature companies by reducing the cash flow available for spending at the discretion of managers.

2.12.4 THE MILLER-MODIGLIANI THEORY

The original ideas presented by Modigliani and Miller (1958) are very theoretical and assumes conditions that do not fit with the real world e.g. all firms have a constant cash-flow, there exist no taxes and all investors and businesses can borrow and invest to the same risk-free rate (Wramsby & Österlund, 2004). However, Modigliani and Miller's famous theorem (M&M theorem) has made a great contribution to the field of

finance as several authors have further developed their original theory. This has resulted in several attempts to formulate why the proportion of debt financing is positively correlated with the return on equity (Pike & Neale, 1993). Today, this formula is better known as the leveraging effect (Johansson, Marton & Pautsch, 2004).

A firm that chooses to issue some debt by taking a loan, will increase its return on equity since the cost of lending money from a bank is cheaper than "lending" money from the shareholders (Pike & Neale, 1993). It is cheaper due to the fact that long-term debt normally has lower administrative/issuing costs, debt interests are normally tax deductible and the pre-tax interest rate on debt is invariably lower than the required return of shareholders since debt usually demands assets as securities (Pike & Neale, 1993). This implies that an increasing proportion of debt financing, to a lower interest rate than the required return of shareholders, will increase the return on equity and thereby the wealth of the shareholders.

An alternative way of looking at this phenomenon is to consider the weighted average cost of capital (WACC). In connection to the modified version of M&M proposition with corporate tax, one can derive that an increased proportion of debt financing, to a lower interest rate than the required return of shareholders, will either reduce the cost of capital or increase the return to shareholders (Pike & Neal, 1993). In the latter situation, the cost of capital remains constant as the benefits of using cheaper debt is exactly balanced by the increase in the cost of equity. This leaves a net tax

advantage with the conclusion that firms should use as much debt as possible (Chittendale, *et al*, 1996). However, the debt interest rate is only lower than the return on equity to a certain point since creditors demand premiums for the risk they take when lending money (Marks *et al.*, 2005).

In their path-breaking paper in 1958 Nobel laureates Merton Miller and Franco Modigliani (1958) provide the formal proof of their now-famous M&M irrelevance proposition. They demonstrate that there would be arbitrage opportunities in perfect capital markets if the value of a firm depended on how it is financed. They also argue that if investors and firms can borrow at the same rate, investors can neutralize any capital structure decisions the firm's management may take (home-made leverage). The underlying rationale for the M&M argument is that the value of the firm is determined solely by the left-hand side of the balance sheet, that is by what is usually referred to as the company's investment policy. The economic substance of the firm is unaffected whether the liability side of the firm's balance sheet is sliced into more or less debt. To increase the value of the firm, it must invest in additional projects with positive net-present values. While the M&M capital structure irrelevance theory clearly rests on unrealistic assumptions, it can serve as a starting point to search for the factors that influence corporate leverage policies.

2.13 THEORETICAL FRAMEWORK

Three theories of Capital Structure have been developed following the pioneering work of Modigliani and Miller (1958) about the existence of an optimal capital structure. These are: Static trade-off, Pecking order and Agency cost theories as discussed above. The two theories to be adopted in this study share the same opinion about the existence of optimal capital structure and it relationship with the value of a firm and this correlates with the problem of this study.

TRADITIONAL THEORY: According to this theory, the Weighted Average Cost of Capital (WACC) drops up to a point and then increases as the level of indebtedness rises. The optimum capital structure will be at the point of minimum WACC. Therefore, according to this theory, there is such thing as an optimal capital structure and a company can increase its value by using it wisely.

MODIGLIANI-MILLER THEORY (MM): In a subsequent paper, Modigliani and Miller (1963) eased the conditions in his earlier theory and showed that under capital market imperfection where interest expenses are tax deductible, firm value will increase with higher financial leverage. Models based on impact of tax, suggest that profitable companies should have more debts these firms have more need for tax management in corporation's profit. However, increasing debt results in an increased probability of bankruptcy. Hence, the optimal capital structure represents a level of leverage that balances bankruptcy costs and benefits of debt finance.

2.14 SUMMARY

This chapter critically reviewed related studies carried out in this field by past researchers on the relevance of capital structure resulting from the pioneering work of Modigliani and Miller, factors influencing the choice of capital structure, potential determinants of capital structure, capital structure and firm performance, foundation of capital structure theories, Industrial Financing in Nigeria among others as they relates to the performance of quoted manufacturing firms in Nigeria.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1   INTRODUCTION

The purpose of this chapter is to present the methodology adopted in the study. This is to enable good understanding of what methodology is all about. Jankowicz (1991), defines methodology in respect to research as 'the analysis of, and rational for, the particular method or methods used in general". Given the above definition, we can simply say methodology of the study is all about the procedures employed in carrying out the research.

It spells out the nature of the research design, population of the study, sampling techniques, methods of data collection and tools for analyzing the data.

3.2   RESEARCH DESIGN

The nature of problem and objective of any study usually determine the type of research design to be adopted by a researcher. Though, various types of research design exist which includes experimental design, historical design, survey design, case study design, ex-post design, correlation design among others. This study utilized the correlation design as it attempts to correlate the effect of leverage on the performance of quoted Manufacturing firms in Nigeria using the three widely used proxies (i.e Return on Equity, Return on Assets, and Return on Investment) for measuring firm

performance. It thus, attempts to establish the underlying facts about their relationship with capital structure.

3.3 SOURCES AND METHOD OF DATA COLLECTION

There are basically two sources of data collection i.e both primary and secondary sources of data collection. For the purpose of this study, only secondary method of data collection was utilized i.e textbooks, annual reports, Journals, other published materials, Nigerian Stock Exchange fact books and the annual financial statements of the sampled firms for the periods 2000 to 2009 bearing the flow of financial activities in the sector before the economic meltdown.

3.4 POPULATION AND SAMPLING TECHNIQUE

The population of this study consists of all Nigerian manufacturing companies that enjoy first-tier listing on the Nigerian Stock Exchange (NSE). As at December 28, 2009, a total of one hundred and eight manufacturing firms enjoy first tier listing on the Nigerian Stock Exchange. However, these one hundred and eight (108) firms form our population.

Table 3.1 shows the classification of the strata and the number of the firms in each strata as classified by the Nigeria Stock Exchange, 2009

Strata	Number of firms
Agriculture	8
Automobile	5
Breweries	7
Building materials	9
Chemical and paints	6

Computer & Office equipment	6
Conglomerate	8
Engineering Technology	4
Food/Beverage & Tobacco	17
Foot ware	2
Industrial/Domestic Product	12
Packaging	9
Textile	5
Total	108

Source: Compiled by the Researcher from NSE Fact Book, 2010

SAMPLE SELECTION

There are many types of sampling methods. These include among others random sampling, stratified sampling, systematic sampling, multi-stage sampling, cluster sampling and quota sampling. For the purpose of this study, stratified sampling technique is used considering the sectorial grouping of firms in the stock market. A stratified sampling method extends the ideas of simple random sample to ensure that a heterogeneous population has its defined strata taken account of in the sample. One advantage of this method is that the sample itself is free from bias. The selection of strata is subjective and it increases cost due to the extra time and labour necessary for the organization and implementation of the sample.

Slovin's sampling technique formula is used in determining sample size of this study as adopted by Ariola *et al* (2006).

Slovin's formula is written as:

$n = N / (1 + Ne^2)$

Where n = Number of samples

N = Total population
e = Error tolerance

Hence: n = $\dfrac{108}{1 + 108\,(0.15)^2}$

N = 31

To select sample size from each strata from the population size, we now determine our sample size through the use of proportional sampling techniques. As at the time of conducting this study, there were 108 quoted manufacturing companies.

Strata	Number of firms	Computation	Number of firms from each strata
Agriculture	8	8/108 x 31	2
Automobile	5	5/108 x 31	1
Breweries	7	7/108 x 31	2
Building materials	9	9/108 x 31	3
Chemical and paints	6	6/108 x 31	2
Computer & Office equipment	6	6/108 x 31	2
Conglomerate	8	8/108 x 31	2
Engineering Technology	4	4/108 x 31	1
Food/Beverage & Tobacco	17	17/108 x 31	5
Foot ware	2	2/108 x 31	1
Industrial/Domestic Product	12	12/108 x 31	3
Packaging	9	9/108 x 31	3
Textile	5	5/108 x 31	1
Total	108		28

Source: Compiled by the Researcher, 2010.

Finally, our eventual sample size of this study will be 28 manufacturing firms as against the 31 obtained earlier on. It is pertinent to state that all computation was done

on approximate to the nearest whole number. 28 out of 108 manufacturing firms were selected as our sample representative. This was done using random sampling techniques.

3.5   TECHNIQUE OF DATA ANALYSIS

The nature of the data collected determines the type of tool to be adopted for analysis. For the purpose of this study simple regression technique was used as a tool of analysis. This is for the reason that the study determines the effect of capital structure represented by leverage which is the independent variable on the firm's performance represented by ROE, ROA and ROI of quoted manufacturing firms in Nigeria. Thus, the study has one independent variable and three dependent variables.

3.6   MODELS SPECIFICATION

The models used in testing the hypotheses of the study are presented below:

$y_{1=} \alpha + \beta_1 LEV$

$y_{2=} \alpha + \beta_2 LEV$

$y_{3=} \alpha + \beta_3 LEV$

Where:

$y_{1=}$ RETURN ON EQUITY (ROE) as a dependent variable 1

$y_{2=}$ RETURN ON ASSETS (ROA) as a dependent variable 2

$y_{1=}$ RETURN ON INVESTMENT (ROI) as a dependent variable 3

α = Constant

$\beta_{1\text{-}}\,\beta_3$ = Coefficient of the independent variable

LEV= D/E (Ratio of Debt to equity as an independent variable)

3.7 VARIABLES MEASUREMENT

$$\text{ROE} = \frac{\text{Net Profit after Tax}}{\text{Average Share Holder Equity}}$$

This measure how much share holder earn for its investment. Ratio indicates how profitable a company is by comparing its net income to average shareholders' equity. The higher the percentage, the more efficient equity holders fund is been utilized.

$$\text{ROA} = \frac{\text{Net Profit after Tax}}{\text{Total Assets}}$$

This shows how profitable a company's assets are in generating revenue. It states how much of earnings is been derived from each naira of assets an organization control.

$$\text{ROI} = \frac{\text{Net Profit after Tax}}{\text{Total Tangible Assets}}$$

This is a performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments.

It shows the ratio of money realized/unrealized on an investment relative to the invested amount. If an investment does not have a positive ROI, or if there are other opportunities with higher ROI, then the investment should not be undertaken.

3.8 DECISION RULE

When the calculated significance value is less than 5% level of significance we reject the null hypothesis that Leverage has no significant effect on the Performance of Quoted Manufacturing Firms in Nigeria and when the calculated significance value is more than 5% level of significance, we accept the alternate hypothesis that leverage has a significant effect on the performance of Quoted Manufacturing Firms in Nigeria

3.9 JUSTIFICATION OF THE TECHNIQUE USED IN THIS STUDY

Stratified sampling technique was the method used in this study supplemented by proportional representative. The rationale for the choice of this sampling method is that the population of this study is segmented by classification in the Stock Market. We adopted the simple regression technique in analyzing our data consideration the correlation between the dependent and independent variables.

3.10 SUMMARY

This chapter discussed the research methodology used in the study. Correlational design was employed considering the relationship between the two observed variables. Secondary method of data collection was utilized to collect data in which stratified sampling technique was also employed to select the sample size considering the segmentation of the Stock Market by the Nigerian Stock Exchange Market. Simple

regression analysis was however used to analyze the data also considering the number

of the dependant and independent variable i.e one-to-one to be utilized.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

This chapter presents and discusses the data collected in the course of the research work. It covers the presentation and analysis of secondary data collected from the financial statements of the sampled quoted manufacturing firms. The hypotheses formulated are tested in this section in order to determine the relationship between dependent variables (Return on equity, Return on assets and Return on investment) and the independent variable (Leverage). The aim is to find out whether Leverage has an effect on return on equity, return on assets and return on investments of the selected quoted manufacturing firms.

Simple linear regression has been used to estimate the relation between the dependent variables (Return on equity, Return on assets and Return on investment) and the independent variable, which is represented by Leverage in Naira. The technique of t-test has also been used to estimate the regression coefficient of the variables.

The aggregate values of both dependent and independent variables for the selected quoted manufacturing firms and within the period of the study are presented in table 4.1 below:

Table 4.1 Aggregate Values of Dependent and Independent Variables

YEARS	INDEP/VARIABLE (X) Leverage(M) ₦	DEPENDENT VARIABLES		
		ROE(M) ₦=Y$_1$	ROA(M) ₦=Y$_2$	ROI(M) ₦=Y$_3$
2000	0.08	0.50	0.44	0.33
2001	0.20	0.32	0.30	0.40
2002	0.14	0.40	0.47	0.45
2003	0.04	0.51	0.20	0.25
2004	0.20	0.60	0.35	0.23
2005	0.05	0.35	0.20	0.40
2006	0.01	0.40	0.36	0.40
2007	0.23	0.35	0.40	0.43
2008	0.03	0.25	0.36	0.22
2009	0.04	0.40	0.30	0.35

Source: NSE fact Book 2010

LEV= Leverage, ROE = Return on Equity, ROA = Return on Asset, ROI = Return on Investment

4.1.2 Determinants of the Effect of Leverage on the Performance of Nigerian Quoted manufacturing firms.

The study uses three dependent variables for determining the aggregate effect of Leverage on the performance of Nigerian quoted manufacturing firms. These three explanatory variables are return on equity, return on assets and return on investment. The study hypothesizes significant effect between explanatory variables and Leverage in Naira.

The regression results are presented in Table 4.2 below. The full results are contained in Appendix D.

Table 4.2: Determinants of effect of Leverage on the performance of Nigerian quoted manufacturing firms

Sample Statistics	Dependent Variables		
	Y_1	Y_2	Y_2
Mean	0.4080	0.3380	0.3460
Standard Dev.	0.1029	0.0905	0.0853
Minimum	0.0859	0.0596	0.0712
Maximum	0.1216	0.1425	0.1274
R	0.77	0.63	0.52
R^2	0.67	0.53	0.63
F- values	23.131	34.018	44.541
Significant	0.006*	0.003*	0.001*
Durbin-Watson	2.694	2.753	2.631

Source: SPSS Printout of Simple Regression computed from table 4.1 above.

4.2 Effect of Leverage on Return on equity of Nigerian Quoted manufacturing firms.

A null hypothesis that Leverage has no significant effect on the return on equity of Nigerian quoted manufacturing firms was formulated to ascertain whether Leverage has effect on return on equity of Nigerian quoted manufacturing firms or not. The hypothesis is tested and the regression result in table 4.2 reveals a positive correlation of 77% percent between Leverage and return on equity. The correlation coefficient, r = 0.77 is positive and significant showing that between pair of Leverage and return on equity there is significant relationship. Also, it corroborates the result of the regression model that Leverage is playing a significant role in measuring return on equity and the positive nature of the correlation coefficient explains the model in the regression $y_1 = \partial + \beta$ LEV .The result of the model reveals that for every ₦ 1 naira increase in Leverage

brings about ₦23.131k increase in return on equity. While the coefficient of determination (R^2) shows that Leverage occupies 67% in determining the value of return on equity and other contributors covered the remaining 33%.

In addition, F-values in the regression results (see table 4.2) indicate that return on investment has the highest value of 44.541 compared to those of return on equity and return on assets. This shows that Leverage has greatest effect on the return on investment than return on equity and return on assets. This can also be confirmed by lowest mean and standard deviation values. The average value for return on equity in the table is 0.4080 which is higher than that of return on assets (0.3380) and return on investment (0.3460). This implies that return on equity receives the lowest effect among the other dependent variables. In addition, the variable with smaller standard deviation believed to have a greater effect from Leverage, Esan and Okafor (1995). While, return on investment happened to have the lowest standard deviation of 0.0853.

However, the calculated significant value of return on equity 0.006 is less than 5% level of significant ($P < 0.05$). This therefore produced the evidence of rejecting the null hypothesis one of the study that Leverage has no significant effect on return on equity of Nigerian quoted manufacturing firms.

4.3 Effect of Leverage on the return on assets of Nigerian Quoted manufacturing firms.

A null hypothesis that Leverage has no significant effect on the return on assets of Nigerian quoted manufacturing firms was formulated to ascertain whether Leverage has effect on return on assets of Nigerian quoted manufacturing firms or not. The hypothesis is tested and the regression result in table 4.2 reveals a positive correlation of 63% percent between Leverage and return on assets. The correlation coefficient, r = 0.63 is positive and significant showing that between pair of Leverage and return on assets there is significant relationship. Also, it corroborates the result of the regression model that Leverage is playing a significant role in measuring return on assets and the positive nature of the correlation coefficient explains the model in the regression $y_2 = \partial + \beta$ LEV .The result of the model reveals that for every ₦ 1 naira increase in Leverage brings about ₦34.018k increase in return on assets. While the coefficient of determination (R^2) shows that Leverage occupies 56% in determining the value of return on assets and other contributors covered the remaining 44%.

However, the calculated significant value of return on assets 0.003 is less than 5% level of significant ($P < 0.05$). This therefore produced the evidence of rejecting the null hypothesis two of the study that Leverage has no significant effect on return on assets of Nigerian quoted manufacturing firms.

4.4 Effect of Leverage on the Return on investment of Nigerian Quoted manufacturing firms.

A null hypothesis that Leverage has no significant effect on the return on investment of Nigerian quoted manufacturing firms was formulated to ascertain whether Leverage has effect on return on investment of Nigerian quoted manufacturing firms or not. The hypothesis is tested and the regression result in table 4.2 reveals a positive correlation of 52% percent between Leverage and return on investment. The correlation coefficient, r = 0.52 is positive and significant showing that between pair of Leverage and return on investment there is significant relationship. Also, it corroborates the result of the regression model that Leverage is playing a significant role in measuring return on investment and the positive nature of the correlation coefficient explains the model in the regression $y_3 = \partial + \beta$ LEV .The result of the model reveals that for every ₦ 1 naira increase in Leverage brings about ₦44.541k increase in return on investment. While the coefficient of determination (R^2) shows that Leverage occupies 63% in determining the value of return on investment and other contributors covered the remaining 37%.

However, the calculated significant value of return on investment 0.001 is less than 5% level of significant ($P < 0.05$). This therefore produced the evidence of rejecting the null hypothesis three of the study that Leverage has no significant effect on return on investment of Nigerian quoted manufacturing firms.

4.5　Discussion of Findings

Quoted manufacturing firms with good Leverage to reduce cost of capital and increase their turnover which ultimately improves their performance. The study rejected the null hypotheses that Leverage in Nigerian quoted manufacturing firms have no significant effect on the three explained variables: return on equity, return on assets and return on investment. The results reveal a positive relationship of 77%, 63% and 52% between the value of Leverage and return on equity, return on assets and return on investment of Nigerian quoted manufacturing firms respectively. The study shows that for every ₦ 1 naira increase as a result of Leverage, the volume of return on equity increases by ₦23, return on assets by ₦34 and investment by ₦45 in Nigerian Quoted manufacturing firms.

The result implies that the more quoted manufacturing firms mix their equity and debt properly, the more return to be generated on equity, assets and investments. The study reveals that the performance indicators of the sampled quoted manufacturing firms can be explained by the influence of Leverage In addition, Nigerian quoted manufacturing firms performed remarkably well within the period of the study. Leverage has significant effect on their performance.

The regression shows that firms that issued more common and preferred equity are the same firms that increased their leverage ratios. More importantly, the correlation between issuing activity and leverage changes is so modest that the two are almost

orthogonal. Consequently, the empirical literature on (equity) issuing activity and capital structure should be seen as distinct. A variable that explains equity-issuing activity does not necessarily explain capital structure changes, and vice versa. Measuring firm performance has been a major challenge for scholars and practitioners as well. Performance is a multidimensional construct (cf. Chakravathy, 1986), thus any single index may not be able to provide a comprehensive understanding of the performance relationship relative to the constructs of interests. Therefore it is important to look at multiple indicators. At the same time it is important to understand stable relations over time. Thus, instead of using a short-term indicator of performance it is desirable to study how our variables of interest will influence performance over a period of time. Given these considerations, we selected return on assets (ROA) and return on investments (ROI) as the performance measures, and averaged the data over a 5-year time period from 1989 to 1993. ROA is operationalized as income before extraordinary items, divided by total assets (which includes: current assets, net property, plant and equipment, and other noncurrent assets as identified by the firms). ROI is operationalized as income before extraordinary items, divided by total invested capital (which includes total long-term debt, preferred stock, minority interest, and total common equity).

The exclusion of the return on equity measure (ROE) is as important as the inclusion of ROA and ROI. While many argue that maximizing return on equity is an

important performance criterion, we must point out that the ROE ignores the impact of other forms of resource investment.

Further, the ROE measure would be confounded with our basic theoretical question of the performance impact of the capital structure decision in as much as a high ROE could indicate an overly leveraged firm, and low ROE could indicate a conservatively financed firm. We therefore concluded that ROA and ROI were return measures that captured a firm's contribution to the overall investment of resources and therefore were more appropriate measures of performance for this study.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1   SUMMARY

This study investigates the effect of Leverage on the performance of Nigerian quoted manufacturing firms. The problem of the study therefore emanated from at least two reasons: First, Leverage has become a global issue of business financing decision and Nigerian quoted manufacturing firms are not in exception.

Second, studies have been carried out on the effect of Leverage on manufacturing firms and small and medium scale enterprises outside Nigeria and to the best of our knowledge non in Nigerian context. This motivated us to find out what will be the position in the Nigerian quoted manufacturing firms.

In view of the above, the study hypothesized a significant relationship between Leverage and three performance indicators of Nigerian quoted manufacturing firms namely; return on equity, return on assets and return on investment.

The findings of the research are based on the result of the tested hypotheses. It is also based on the pooled cross-section of time series data collected for the period 2000 to 2009 from 28 samples of quoted manufacturing firms out of 108.   Simple   linear regression is used for testing hypotheses. The result of the study reveals that Leverage has a significant effect on the performance of quoted manufacturing firms in Nigeria.

5.2 Conclusions

In accordance with the research finding that Leverage explain the variables of quoted manufacturing firm's performance, the study concludes as follows.

Firstly, both empirical and statistical evidence on the effect of Leverage on the three performance indicators namely return on equity, return on assets and return on investment in the Nigerian quoted manufacturing firms have significant effect on the quoted manufacturing firms' performance.

Secondly, the study also concludes that Nigerian quoted manufacturing firms have performed remarkably well within the period of the study 2000-2009. This may be because of the technological advancements globally.

Finally, the study represents a pioneering attempt in assessing the effect of Leverage on the performance of Nigerian quoted manufacturing firms looking at performance from the perspective of return on equity, return on assets and return on investment.

5.3 Recommendations

In line with the findings of this study, which reveal that Leverage has significant effect on the performance of Nigerian quoted manufacturing firms and the conclusions drawn by the study, the following recommendations are offered:

1.   The management of Nigerian quoted manufacturing firms should work very hard to optimize the capital structure of their quoted manufacturing firms in order to increase

the returns on equity, assets and investment. They can do that through ensuring that their capital structure is optimal.

2   The Management of Nigerian quoted manufacturing firms should increase their commitments into capital structure in order to improve earnings from their business transaction.

3.   The Management of Nigerian quoted manufacturing firms must caution against the apparent benefits of greater leverage simply as a device for controlling managerial opportunistic behavior. First, debt and equity represent different constituencies with their own competing, and often mutually exclusive, goals. Second, as the level of debt increases, the capital structure can change from one of internal control to one of external control.

4. Investors and stakeholders of quoted Manufacturing firms in Nigeria should also consider the leverage level of any firm before committing their hard earned money as the strength of a firm financing mix determine the quantum of their returns.

POLICY IMPLEMENTATION

It is advised that the government should try to make consistent policies to provide the necessary funding assistance as demonstrated most recently by the provision of ₦200b loan facility to SME's in 2010 which could also be accessed by the manufacturing

sector to enable it perform its primary duty of wealth creation, employment generation and poverty alleviation.

5.4   AREA OF FURTHER RESEARCH

Researchers in the area of finance can carry out further studies on ''Effect of Leverage on the performance of Quoted Manufacturing Firms in Nigeria'' using other performance measure than ROE, ROA and ROI as their dependent variables to assist in providing a clear guidance to finance managers in Nigerian on the appropriate financing means/mix that could optimize the value of a firm as Most of the previous studies have been based on evidences from developed nations and other developing nations like India, Brazil, Mozambique etc.

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Regression

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/DESCRIPTIVES MEAN STDDEV CORR SIG N
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Leverage
/METHOD=ENTER ROE
/RESIDUALS DURBIN.
```

Descriptive Statistics

	Mean	Std. Deviation	N
Leverage	.1020	.08270	10
ROE	.4080	.10293	10

Correlations

		Leverage	ROE
Pearson Correlation	Leverage	1.000	.777
	ROE	.777	1.000
Sig. (1-tailed)	Leverage	.	.63
	ROE	.63	.
N	Leverage	10	10
	ROE	10	10

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.77[a]	.67	.52	.8701	.61	23.131	1	

a. Predictors: (Constant), ROE

b. Dependent Variable: Leverage

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	23.131	.006[a]
	Residual	.061	8	.008		
	Total	.062	9			

a. Predictors: (Constant), ROE

b. Dependent Variable: Leverage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.601	.118		2.510	.004
	ROE	.102	.282	.77	5.363	.006

a. Dependent Variable: Leverage

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.0859	.1216	.1020	.01051	10
Residual	.09118	.13392	.00000	.08203	10
Std. Predicted Value	1.535	1.865	.000	1.000	10
Std. Residual	1.048	1.539	.000	.943	10

a. Dependent Variable: Leverage

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Leverage
  /METHOD=ENTER ROA
  /RESIDUALS DURBIN.
```

Descriptive Statistics

	Mean	Std. Deviation	N
Leverage	.1020	.08270	10
ROA	.3380	.09053	10

Correlations

		Leverage	ROA
Pearson Correlation	Leverage	1.000	.630
	ROA	.630	1.000
Sig. (1-tailed)	Leverage	.	.711
	ROA	.711	.
N	Leverage	10	10
	ROA	10	10

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.63^a	.563	.520	.80262	.311	34.018	1	8

a. Predictors: (Constant), ROA

b. Dependent Variable: Leverage

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.007	1	.007	34.018	.003[a]
	Residual	.055	8	.007		
	Total	.062	9			

a. Predictors: (Constant), ROA

b. Dependent Variable:Leverage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.002	.106		4.016	.007
	ROA	.307	.304	.633	7.009	.003

a. Dependent Variable: Leverage

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.0596	.1425	.1020	.02779	10
Residual	.09875	.10966	.00000	.07790	10
Std. Predicted Value	1.524	1.458	.000	1.000	10
Std. Residual	1.195	1.327	.000	.943	10

a. Dependent Variable: Leverage

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Leverage
  /METHOD=ENTER ROI

  /RESIDUALS DURBIN.
```

Descriptive Statistics

	Mean	Std. Deviation	N
Leverage	.1020	.08270	10
ROI	.3460	.08527	10

Correlations

		Leverage	ROI
Pearson Correlation	Leverage	1.000	.522
	ROI	.522	1.000
Sig. (1-tailed)	Leverage	.	.412
	ROI	.412	.
N	Leverage	10	10
	ROI	10	10

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.52[a]	.630	.540	.08490	.630	44.541	1	8

a. Predictors: (Constant), ROI

b. Dependent Variable: Leverage

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.004	1	.004	44.541	.001[a]
	Residual	.058	8	.007		
	Total	.062	9			

a. Predictors: (Constant), ROI

b. Dependent Variable:Leverage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.018	.118		6.148	.006
	ROI	.244	.332	.252	8.736	.001

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.018	.118		6.148	.006
	ROI	.244	.332	.252	8.736	.001

a. Dependent Variable: Leverage

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.0712	.1274	.1020	.02082	10
Residual	-.10519	.12633	.00000	.08004	10
Std. Predicted Value	-1.478	1.220	.000	1.000	10
Std. Residual	-1.239	1.488	.000	.943	10

a. Dependent Variable: Leverage