TITLE PAGE

THE EFFECT OF CAPITAL STRUCTURE ON PERFORMANCE

A STUDY OF SELECTED FIRMS.

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CERTIFICATION

This thesis entitled "The effect of Capital Structure on performance eValuation of Firms: A study of selected Firms" meets the regulations governing the award of the degree of Master of Science in Accounting and Finance of Ahmadu Bello University, Zaria which has been read and approved for its contribution to knowledge and literary presentation.

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ABSTRACT

This thesis evaluates the impact of capital structure on performance evaluation of firms using selected quoted companies in Nigeria. A lot of literature has been written on this subject especially in advanced economies such as USA. The results of the empirical studies in advanced economies differ. Some from their findings reveal that except for tax advantage debt, financing does not have any advantage. While others from thesis contended, that debt has greater advantage that its tax advantages. The research conducted was to reveal the true situation in Nigeria, a model of developing economy.

Two groups are considered; the conglomerates and drinks groups and Building Materials group, using two stage least square regression, Model; values of firms being the dependent variable and computed earning , size, growth and debt serve as the instrumental variable. The regression co-efficient of the debt variable unlike the case of Miller and Modigliani was significantly greater than zero and thus it was subsequently introduced in the instrumental/independent variable. The regression coefficient for the debt variable . shows the value greater than zero. From this, it can be concluded that the advantage of debt is higher than the tax advantage. The coefficient of debt variable for the four years both the second stage estimate and direct estimate is higher than the

corporation income tax rate (1990-1992; 40% and 1994 35%) the result obtained gives more credence to the fact the debt has greater advantage than its tax advantage.

The research work reveals that shareholder wealth increases with debt through the ranges observed, though there are practical limitations to this. It was discovered that, in practice, that firms operate within a particular combination of debt'and equity they considered optimum. It is observed that apart from the capital structure, there are other quantitative and non-quantitative factors that influence the price of a firm share in the market; such as management epitude, economic situations, political instability etc.

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CHAPTER ONE

INTRODUCTION

1.1 OVERVIEW

The establishment of Registered Company with all their complexities has led to the separation of ownership from management. The managers are agents of the shareholders (owners) vested with management of the day to day activities of the business. Because of this separation, the Managers are involved in three cardinal decision viz., Investment, Financing and dividend decisions. It is vital to know that financing decision plays a pivotal role in the survival and growth of a business enterprise, hence considerable effort should be geared towards making an appropriate financing decision which will protect the shareholders' interest. It follows therefore that the managers must plan and take the financing decision of the firm in such a way as to maximize the shareholders' wealth.

It is an accepted axiom that the primary goal of business organization is to maximize the shareholders' wealth; i.e. the financial management theory is concerned with the rewards

available to ordinary shareholders. The greater the returns to shareholders, the more attractive it will be to invest in the company and hence the higher the valuation of the company in the view of the stock market. Thus, the discipline of the financial markets is implemented by formulating the firm's objectives in terms of shareholders interest. Thus, firms that perform better than others have higher stock prices and can raise additional funds under more favourable terms. Most of the finance literature has adopted the basic postulate of maximizing the price of the firms common stock (equity) over the long run. From this postulate, theories have been developed that receive considerable support from empirical test.

The financing decisions involve both the long term and short term sources of capital i.e. financial structure. The short term source of capital is dealt with under working capital management while in this study the focus is on the long term sources known as the capital structure of the firm. Capital structure decision is a significant managerial decision as it influences the shareholders return and risk. Consequently, the market value of the share is affected by the capital structure decision. As stated by Pandey (1986) the company will have to plan its capital structure initially at the time of its promotion and

subsequently, whenever funds have to be raised to finance investments, a capital structure decision is involved. The availability of profitable investment opportunities demand for raising funds and making an appropriate choice of fund either debt or equity. This decision will involve a close analysis of the existing capital structure and factors which will govern the decision at present, bearing in mind the shareholders and possibly the stakeholders' interest.

As maximization of the shareholders' wealth has been an accepted norm of primary objective of business and recently `satisficing', it follows that all financing and investment decisions must be made bearing that in mind. Some of the finance literature however have taken the maximization of shareholders' wealth as synonymous with maximizing the market (stock market) value of the company. The value of shares in the market is sometimes determined by the total return available to investors through dividend payments and capital appreciation: both are dependent upon current and future earnings of the company. This view was supported by Pandey (1986) when he stated that the value of a firm depends upon expected earnings stream and the rate used to discount this stream (the rate used to discount earnings stream is the firms' required rate of return or the cost of

capital). It can be deduced that the capital structure decision can affect the value of the firm either by changing the expected earnings or the cost of capital or both.

Valuation of a firm becomes an important issue to ensure that the providers of finance are adequately regarded. Quoted companies are always participants in the capital market especially as regards new issues of debts or equities, hence any quoted company that wishes to raise fund in the financial market must be aware of its own market valuation. Neglecting this important task can endanger the life of the company and threaten the employment of its employees in the long run and in advanced countries such as U.S.A., U.K., such a company may be threatened with a take-over bid. Other reasons for valuation include for merger, takeover, capital reconstruction and others.

As stated earlier the main objective of the firm is the maximization of the shareholders' wealth or the value of the firm, hence the management will always look for the financial mix that will enhance the accomplishment of this objective, along with the reduction in the cost of capital. This is the reason why management must give serious consideration to its capital structure and its gearing. Very complex issues are involved in planning an appropriate capital structure. Circumstances may

make it advantageous to increase the proportion of debt capital i.e. increasing the gearing as a result of its tax deductible advantage. There is an upper limit to debt finance however, for not only are there obvious dangers in the presence of large fixed interest charges against corporate income, but there are practical limits to the amount of funds which may be borrowed.

Thus, determination of the appropriate capital structure for the wealth maximizing firm is a central topic in the study of business finance and has spawned numerous articles and studies by academics and practitioners alike. An important segment of this body of literature has received a notable acclaim from theoreticians and has served to focus all thinking in this area. Despite all these theoretical and empirical study, to date the reported empirical evidence on the subject is so inconclusive that it offers little in terms of either resolving conflicting theoretical propositions or aiding the decision makers.

1.2 STATEMENT OF THE PROBLEM

One of the central issues in both the theory and practice of financial management is the problem of determining the optimal capital structure of the firm if it actually exist. Given capital market conditions and the array of investment opportunities, the question that follows "is there some optimal

composition of debt and equity at which the value of the firm will be maximized?" The question is put more distinctly by Ezra Solomon (1963) in the following words:

> Given that a firm has certain structure of assets, which offers net operating earnings of given size and quality and given a certain structure of rates in the capital markets, is there some specific degree of leverage at which the market value of the firms' securities will be higher (or the cost of the capital will be lower) than at other degree of leverage.

It is an accepted and obvious aspect of the problem that debt financing adds to the earnings stream as long as the explicit costs of financing are less than the returns from the capital invested. Low debt usage companies in advanced countries like U.S.A., U.K. are extremely attractive to leverage minded conglomerate managers. As debt becomes a proportionally larger, part of the capital structure, corporate management must evaluate its possible unfavourable effect. In short, today financial managers must determine that level of debt which will increase profitability to the firm's owner without unduely increasing the risk of insolvency.

Any change in the proportions of debt and equity will open up the possibility that the market will change its view of the financial risk of the company, which would lead to a revision of

the company's market value and consequently, its overall cost of capital. Whether the market value would indeed reverse its valuation of a company because of a change in the financing mix is a matter which has been much debated. If it would not,then the finance manager of a company would not seek an optimal mix of debt and equity, because all capital structures would, in a sense be optimal and there would be no differential effect between one structure and another. If such an effect is expected, then the finance manager is faced with the problem of seeking an optimal capital structure, or a set of optimal structure from possible capital structure which range from all equity to almost all debt.

The controversy over the optimal capital structure question focuses on the effect of the additional debt financing on the quality of the firm's earnings and thus, on the rate at which the earnings are capitalized. The question that follows is: Does the addition of a moderate amount of fixed commitment financing result in demand by shareholders for an increase in the risk premium component of equity yields sufficient to offset the incremental earnings derived from the new financing? If investors respond in this manner, the value of the firm remain unaffected by changes in the capital structure and it may be concluded that capital structure is of no consequence in a firms

attempt to achieve the objective of wealth maximization for its shareholders. If however, the increase in yield demanded by shareholders is either more or less than sufficient to offset the advantages of incremental earnings derived from additional debt financing, then capital structure will have an important effect on the value of the firm. In this latter case, financial decisions become important variables in pursuing the goal of maximization of shareholders' wealth.

The capital structure problem has been the subject of much controversy in recent years, but the opposing views remain unresolved. The normative solutions presented in the literature are strongly dependant upon underlying assumptions regarding the form of investors response and the degree of market perfection. Empirical studies of capital costs and leverage have, thus far, yielded unambiguous results because of biases in both measurement and concept.

A critical examination of some of the underlying assumptions regarding the form of investors response and the degree of market perfection within Nigeria context reveal the assumptions to be invalid and inappropriate. Hence, there is the need to examine the behavior of the market value of a firm when there are changes in the capital structure in view of the underdeveloped nature of

the Nigerian economy and also the imperfection and the underdevelopment in the capital market. Thus, this research paper attempts to bridge the gap in knowledge and offers an empirical approach to determining the relationships among risk, capital structure (and possibly cost of capital) and the value of a firm within Nigeria companies context given the under development and imperfection in the stock market.

1.3 OBJECTIVES OF THE STUDY

The main objective of this empirical analysis are two fold:-

The first, is to determine by regression analysis, the relationship between leverage and the value of firms within a sample of industrial firms and to interpret the observed relationship in the context of existing empirical findings and theories.

The second is to determine whether, and to what degree, differences in market valuation of shares may be explained by differences in capital structure among sample firms.

It is also intend to determine whether optimum capital structure exists in practice or not and also find out the reasons behind the financial manager's choice of a particular capital structure and at the end be able to recommend areas for further research.

1.4 SIGNIFICANCE OF THE STUDY

This research is expected to make some significant contributions to the existing body of knowledge in Nigeria. Considering the fact that Nigeria economy is undergoing serious flaws and lags, in the financial market, inadequacy of capital and inflation at a higher rate, then there is the need to consider how the capital structure can be determined to improve the market value of the firm. A literature search indicates that there is hardly any indigenous literature on this important issue and where they are available they are basically based on foreign data especially America and British industries which may not be relevant to Nigeria situation.

An important question facing companies in Nigeria and else where in need of new finance is whether to raise debt or equity. Inspite of the continuing theoretical debate on capital structure there is relatively little (if any) empirical evidence in Nigeria on how companies actually select between financing instrument at a given point in time. Hence, this study will provide solution/answer to that and also present the results of a study of the effect of capital structure on the valuation of a firm in a less developed and less efficient capital market as opposed to the various studies carried out in United States of America which is believed to be a highly developed economy with a highly

developed and highly rated efficient capital market. Hence the study will be of enormous benefit to academics.

The research will go along way to help financial managers and management personnels to plan the capital structure of their firms with the aim of maximizing the value of their firms and conséquently the shareholders' wealth. Also, from a regulatory point of view, it is useful to have some idea of how capital costs and value of a firm change as the degree of leverage is altered. Such information would enable regulators (management) to anticipate the effect of changes in leverage in their determination of required rate of return in order to maximize the market value of the firm.

The research is expected to add to the current level of knowledge and to provide empirically the factors considered in formulating financial decision and also the capital structure so as to provide a basis of comparison with the present state of knowledge as recorded in the finance literature which may support or invalidate the existing state and provide a forum for its revision as the case may be.

1.5 RESEARCH QUESTIONS

The major questions for this research study are:

1) There exists debate about the relevance of capital structure. One group is of the opinion that capital structure is irrelevance as it has no effect on the value of firms, the other group is of the opinion that capital structure is relevant as it can produce a positive or negative effect on the value of a firm. The questions that follow is what is the true relationship in Nigeria between the capital structure and market value of a firm?

2) A firm's main concern is finding the particular combination of debt and equity that would maximize it's overall market value.

There has been differing opinions as to whether there is indeed a particular combination of debt and equity that would maximize the overall market value. There have been differing opinion as to whether there is indeed a particular mix that has any great advantage over another.

The question then is, within Nigeria context does there exist a combination of debt and equity that maximizes the overall market value and if there exists, how is it determined in practice?

1.6 DELIMITATION/SCOPE OF THESTUDY

This study attempts to establish the relationship (if any) which exists between capital structure and the value of a firm (and possibly cost of capital) among Nigeria quoted companies and also to examine what financial managers consider in making a selection of a particular financial mix of debt and equity. The study is not intended to estimate the tax shield over time neither is it aimed at arriving at a general mathematical formula for determining the capital structure neglecting the factors considered necessary by experts.

It should be noted also that this study does not attempt to establish how the different cost components are determined, neither is it attempting to value Nigeria companies as done by the Nigerian Stock Exchange but rather employ the existing multiple regression analysis as developed and used already by finance experts, mathematicians and Economists in order to arrive at a dependable conclusion about the relationship (if any) between the capital structure and the value of firms. It does not intend to build another theory but rather to see the applicability of the existing theories within the Nigerian context using Nigerian companies data which can be a proof or support for the existing empirical findings in less developed market economies such as India and also to provide a basis of

comparison with the results obtained from developed market economy especially United State of America, in which a lot of theoretical and empirical work have been done.

1.7 DEFINITION OF TERMS

1. Gearing/Leverage: is a term used to describe the relationship between shareholders' capitalplus reserves and either prior charge capital or borrowing or both.
2. Operating Leverage: refers to the extent to which the firm costs are fixed. If a high percentage of a firm's costs are fixed and hence do not decline when demand falls, then the company is said to have a high degree ofoperating leverage.
3. Financial Leverage: is the magnification of returns to ordinary shareholders through the use of debt. It involves the use of funds obtained at a fixed cost in the hope ofincreasing the return to ordinary shareholders. Favourable or positive leverage is said to occur when the firm earns more on the operation with the funds than the fixed cost of their use.

4. Financial risk: is defined as the additional risk placed on a company's common stock holder as a result of financial leverage - (as a result of use of fixed income securities as debt and preference shares).

5. Business risk: is the risk that earnings will be volatile because of the risks inherent in the operations of the firm. It includes any volatility due to changes in the firm's markets, the industry and the economy at large.

6. Homogenous risk class: Firms would be considered to be a homogenous risk class if their expected earnings have identical risk characteristics and also where firms within the same industry are of the same size, with similar expected earnings and risks, it implies that they constitute a homogenous class.

7. Capitalization rates: for corporate equities are rates which equate expected future earnings for a specified period on the share to its present price. These rates are estimates of investor expectations not objectively determinable value. In other words,

they are rates of discount used to find out the present value of a series of future cash receipts.

8. Arbitrage: is an act of buying an asset (or a security) in one market and selling in another at a higher price. By this process under valued assets (or securities) are sold to bring equilibrium in different market. Arbitrager is one who engages in arbitrage.

9. Financial structure:This is the entire liability and share capital side of the Balance sheet. That is, it is equity plus reserves) and short term liabilities.

10 Capital structure: This refers to the composition of a company's capital and consists of ordinary share capital, preference share capital and debenture or long term debt capital.

11 Book value: This is the value of an asset as shown in the accounting books. The book value of a common stock is equal to the networth (paid up capital plus reserve and surplus) divided by the number of common stock outstanding.

12 Net book value: This is the unexpired cost of an asset carried in the accounting records, it is original

cost of the asset less depreciation charged to date.

13 Cost of capital: It is the rate of return required by the suppliers of finance. In other words, it is the minimum required rate of return that the funds used should produce to justify their use with the firm in the light of the wealth maximization principle.

14 Cost of debt: The minimum rate of return required by the suppliers of debt capital.

15 Cost of equity: The minimum rate of return required on the equity funds so that the market value of shares remains unchanged. This is also defined as the market rate of discount, that equates the present value of all expected future dividends per share with the current market price of the stock.

16 Bankruptcy costs: is the costs/loss associated with a situation whereby a firm assets is sold at less than its economic value when the firm is declared bankrupt.

17 Transaction costs: These are costs or brokerage involved when a stock holder sells a portion of his stock as a

result of his desire for current income. This fee varies inversely per naira of stock sold with the size of the sale.

18 Tax shield/Tax relief: The benefit that accrues when debt is employed in financing whereby the interest element is tax deductible as normal trading expenses thereby increasing the return to the ordinary shareholder.

19 Retained earnings: Is that portion of earnings not paid out as dividends. The figure that appears on the balance sheet is the sum of the retained earnings for some years for which the earnings has been retained.

20 Proforma financial statement:It is a projection which shows how financial statements will look under specified assumptions.

21 Insolvency: 'Technical insolvency' occurs when a company has sufficient asset to meet all it's financial obligations but not enough time to convert those assets into cash. 'Legal insolvency' is a condition of permanent cash shortage.

22 Senior securities: These are securities having claims on income and assets that rank higher than certain others.

23 Bankruptcy: A legal procedure for normally liquidating a business carried out under the jurisdiction of courts of law.

24 Stock Exchange/Stock Market: is a primary capital market in which companies and other institutions can raise funds by issuing shares or loan stock, but it is more important as a secondary market for buying and selling existing securities (i.e second hand securities).

25 Second-Tier Securities Market(SSM):This is a market where companies that are not big enough to obtain a full listing on the stock Exchange can raise new capital by issuing shares. SSM is also a market for 'second-hand' shares.

26 Quotation: Means dealing price in the market and in the case of securities previously unquoted, the council of the stock Exchange grants 'permission to deal' and 'Official quotation' when it approves an application for quotation.

27 Price/Earnings(P/E) ratio: is the relationship between the market price of a share in a company and the earnings attributable to that share i.e. the ratio of the current share price to current after tax earnings.

28 Market price: The price of a security quoted in the market.

29 Dividend yield: This is the ratio of the current dividend in monetary terms to the current share price, expressed as a percentage.

30 Earnings yield: This is the hypothetical return which an investor would secure by investing a certain amount in the company's share at their current price if all the company's latest annual profits were distributed.

31 Earnings per share (Eps):is the amount available for ordinary shareholders - that is the balance of profits derived from the net surplus shown after deducting all charges, including corporation tax and preference dividends divided by the number of issued ordinary shares.

32. Capital: Refers to money of wealth used in trade, in manufacture or in any business. This may be

generaled internally of externally, it may be owner's investmnet or borrowed fund.

33. Debentures: as a document issued by a company containing and ackowledgement of indebtedness.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 DESCRIPTION OF NATURE AND TYPES OF CAPITAL AND ITS STRUCTURE

Finance can be described as the life wire of a business organisation, it is the means of financing investment opportunities. Finance represents the source of funding for business organisation that can be internally or externally generated, which can also be owner's investment or borrowed fund.

There are various sources of finance available to a firm which includes ordinary share capital (common stock), preference (preference stock), share capital Debt capital and possibly short terms capital such as terms loans, commercial paper, trade credit etc. However, it is aimed at this juncture to consider the long term sources of capital which can be grouped into equity and debt capital.

DEBT CAPITAL: Debt capital can be subdivided into two namely Debenture/Loan capital and preference share capital.

Debenture/Loan Stock Capital:

Usually a debenture is abound, which is given to an individual or company in exchange for money lent, and a prospectus is usually supplied with the application form. The company agrees

to repay the principal to the lender by some future date. Interest is paid quarterly, semi-annually or annually in return for the use of the funds. The debenture holder is a creditor of the company and the interest has to be paid periodically before dividend is paid to any class of shareholders.

Debentures and loan stock can be secured or unsecured. When secured this is by means of a trust deed.

MORTGAGE DEBENTURE: This type of debenture is secured by means of a specific charge upon certain real assets of the company. A mortgage debenture is therefore secured by real property. If the company defaults in the payment of interest the debenture holders have the right to appoint a receiver to administer the assets until the interest has been paid or the default made good.

Debenture with a floating charge: These debentures are secured against all assets of the company other than those assets that have been charged in the form of mortgage debenture. Although the legal security of this debenture is less than in the case of mortgage debentures, the company does have greater flexibility in managing its assets.

Unsecured Debenture: These debentures have no security. The only security possessed by the debenture holders in this case is a

note of indebtedness issued by the company. Unsecured stocks usually carry a higher interest or coupon rate to attract investors.

Some businesses borrow on a long-term basis because it is one of the major forms of financing available to them to support investment in long term assets. Beyond the matter of availability, however. Long-term borrowing is used for other reasons. Long term debt contracts sometimes include "call provision" to make retirement of the debt possible if the need for the funds should cease to exist or if advantageous refunding opportunities should occur. Long term lenders to the business do not have voting rights. Long terms borrowing may be carried out at times when the stock market is depressed and management wishes to avoid the sharing of ownership interest with new stock holders at depressed stock prices.

Most important, however, in the matter of strategic management of long term borrowing is cost especially as it affects income taxes. The interest paid on debt capital is a financial (trading) expense for tax purpose in contrast with dividends on the equity capital for the firm. Beyond the tax advantage is the financial leverage that may be exerted on the earnings of the stockholders if the cost of long term borrowing

is less than the return on the borrowed fund. This relationship is sometimes referred to as trading on the equity.

While long term debt financing may be advantageous to the firm it should be recognised as a two edged weapon. Just as the return on capital invested by the common stock holder may be enhanced through the use of leverage financing, so too, their return may be severely depressed if the overall earnings on the company's assets fall below the cost of the long term debt financing. There is a limit to which debt financing should not be employed. By way of generalisation, financing with long term debt capital should be utilised to the fullest possible compatibles with the safety of the firm. The level of long term debt financing differs with the type of business. The danger associated with debt can be supported by the report of Daily Times (December 13, 1995) which states;

> Reeling under a heavy debt burden, Tate Industries Plc, maker of beverages, plastic containers and pipes is now mooting the idea of closing shop or selling off its assets. But the company's workers, now owed six months in salary arrears, it was learnt are sceptical about the sale of assets because,

> according to them, there are no assets to sell.
> Hardness hit by Tate's misfortune are creditor-bank, several of which are seeking legal redress, just as the company's fortunes have continued to dwindle at the Nigeria Stock Exchange where it's shares are more an offer than bid.

The above reported news of Daily Times shows that employing debt in the capital structure has a limit above which further usage of debt instruments will retard the performance of the business.

(ii) Preference Share Capital (Preferred Stock)

Preferred stock is a hybrid source of finance which has characteristics of both equity and debt. Like equity it is divided into shares with par value. Like debt it has a fixed income given in a stated percentage say 10% dividend per annum, fixed. Preference shares usually have priority over ordinary shares with respect to earnings and claims on assets in liquidation. Preference shares are sometimes cumulative; occasionally redeemable and some are irredeemable. They are typically none participating and may have contingent voting rights as a result of certain event. Business firms issue out preference shares because:

The obligation to pay a fixed rate of dividend on the security is not binding in the same way as it is with debentures. Dividend can only be paid if it is declared.

Preference shares enables a company to avoid dilution of equity capital which occurs when additional ordinary shares are issued. This is relevant in firms where the shareholders intend maintaining their proportion level of shareholdings or control which becomes impossible if new issues of ordinary shares are made to the public.

They also permit a company to avoid sharing control through participation in voting and also the fact that some are irredeemable making the fund to be more available than debenture which are mostly redeemable.

Despite the advantages of the use of preference shares, in Nigeria for instance, only few firms avail themselves of the opportunity. One of the problems is that dividends paid to preference shareholders are not tax deductible, consequently the true cost to a company of preference shares is far greater than the cost of debentures.

Ordinary share capital (common stock/Equity capital)

The third form of long term financing is that arising from the owner's investment in the business. For the sole proprietorship

and partnership, this may involve little more than the owner's capital to the firm along with appropriate profit or adjustment for losses. For the corporation, on the other hand, ownership interest is represented by the issuance of common stock.

Common stock represents the basic ownership in the business and has a residual claim on profits and residual value on liquidation after creditor's obligations have been met and the dividends on preferred stock have been paid. The common stock holders are the primary risk takers and owners of the firm. They have the ultimate control of the firm's affairs because they are primary risk takers. This control in practice is carried out through the voting rights attached to common stock. Holders of the debt securities issued by a firm bear only a part of the risk of the firm because the shareholders' fund provide a buffer for the debt securities.

The advantages accuring to issuing firms include:

There are no fixed charges attached to ordinary shares. Firms only pay dividend if dividend declaration is made.

Ordinary shares carry no fixed maturity. Within Nigerian context the shares once issued cannot be redeemed, hence the fund provided continued to be available in perpetuity.

They provide a cushion against losses for creditors. Additional issue of equity increases the equity base of the firm, which enhances the ability of the company to borrow in the future.

Disadvantages to the issuing firm include:-

The sales of ordinary shares extend voting rights and control to the additional shareholders that are bought into the company. This could result in dilution of control and conflict in decision making especially in a situation where the shares issued are of large proportion or about the size of the existing shares.

More ordinary share gives more people the right to share with the existing owners in the company's profits. This can adversely affect the earnings per share if the increase in return is not commensurate with the additional capital employed in generating the earnings.

The cost of underwriting and distributing new issues of shares are usually higher than those for underwriting and distributing preference shares or debentures.

It is expected that in determination of optimum capital structure that a certain proportion of equity is mixed with debt. However, if firms have more equity or less debt than is

called for the average cost of capital will be higher than necessary.

Dividends payable to ordinary share holders are not deductible as an expense for the purpose of corporation tax but debenture interest is deductible. This makes debenture to be more chepaer than equity.

Retailed earnings are classified as a part of common stock holder's ownership interest.

CAPITAL STRUCTURE

As discussed above there are various ways of raising funds by a firm to finance its investment. The firm's main concern is finding the particular combination of debt and equity that would maximize its overall market value. There have been differing opinion as to whether there is indeed a particular combination of debt and equity that would maximise a firm's overall market value. One thing that is certain is that a firm is faced with a decision about a particular mix of debt and equity; this involves capital structure decision.

Capital structure has been defined by various authors few of which are a s stated below. Mohammed and Moshin (1980) define capital structure as "the combination of various types of securities through which funds are raised" Weston and Brighman

(1979) define it as "permanent financing of the firm, represented by long term debt, preference shares and ordinary shares but excluding all short term credits". Pendey (1991) defines it as "the inter relationship between long term sources of financing represented by long term debt, preference share and net worth (ordinary share capital plus reserves and surplus)" while Archer, Choatte and Racette (cited by A.J. Lawal, 1989) defines it as "the mix of financial instruments used to finance the firm." Archer, Choatte and Racette's definition is simplified to include only long term interest bearing debt and common stock excluding short term liabilities. The determination of this mix according to them is what is referred to as capital structure decision.

From the foregoing, it can be concluded that capital structure consists of the permanent form of finance which includes ordinary shares, long term debt and preference shares. The capital requirements of a firm are view not only in terms of its amount, but also with reference to its composition, that is the kind of securities and the terms on which a particular kind of security is issued. This composition varies from firm to firm. However, for classification purposes the sources can be grouped into two equity capital and debt capital, which is

usually referred to as gearing (leverage). The higher the debt component in the capital structure the higher the gearing and the firm are said to be highly geared; while the lower the debt capital in the capital structure the lower the debt capital in the capital structure the lower the gearing and such a firm is referred to as being lowly geared. It follows that complete equity stream without debt capital in the capital structure may not maximise the market value of the firm. As far as companies are concerned, debt capital is a potentially attractive source of finance because interest charges are an allowable expense against companies tax. Hence, companies might wish to increase their gearing in order to improve their earnings per share by benefiting from available tax relief on debt capital.

2.2 *DETERMINING FACTORS OF CAPITAL STRUCTURE*

The problem of deciding whether it is wise and proper for a business corporation to finance long-term capital needs through debt and, if so, how far it is safe to go, is one which most managerial personnel have wrestled with at one time or another. For many companies the debt capacity decision is of critical importance because of its potential impact on margins of profitability and on solvency. For all companies, however large and financially sound they may be the deecision is one to be

approached with great care. The issue is that a business can exist without debt capital in its capital structure, while a firm cannot be debt finance all together but must have equity finance whose holders are the owners of the business. The problem to be grapple with is the best mix of debt and equity so as to maximise the market value of the firm, which directly affect the shareholders wealth.

Capital structure, debt policy in general and debt capacity in particular cannot be prescribed for the individual company by outsiders or by generalised standards. They can and should be determined by Management in terms of individual corporate circumstances and objectives and on the basis of other relevant factors. In other words, the decision as to the choice of a capital structure (a particular combination of debt and equity) should not be done in vacuum but rather done taking into consideration some relevant factors as prescribed by authors and researchers having in mind the maximisation of the market value of the firm.

The main factors that will influence the capital structure of a firm include:

(i) Leverage effects on earnings per share:

The effect that the leverage will produce on the earnings per share should be evaluated. If the project/investments to be financed with the use of debt is expected to yield a return greater the cost of debt, the earnings per share increase without increase in the ordinary shares. The earnings per share also increase when preference share capital is used to finance investment, but leverage impact is more pronounced in case of debt because of its tax-deductible advantage. It follows therefore those companies with high level of earning before interest and taxes (EBIT) can make profitable use of high level of leverage to increase return on the shareholders equity.

(2) Growth and stability of sales:

A high growth rate of sales will lead to rapid increase in earnings per share in a highly geared firm, which means high gearing is tempting to a growing firm. In the same vein good prospects for the company will lead to equity being attractive to investors and the high price of equity reduce the cost of its as a means of funding expansion. This serves to make high gearing a little less attractive. The firms with stable sales can employ a high degree of leverage, as they will not face difficulty in meeting their fixed commitments. The likely fluctuations in sales increase business risk. As a result, the

shareholders perceive a high degree of financial risk if debt is employed in the capital structure.

Business confidence and expectations of future sales and profits are crucial factors in the determination of how much debt capital investors are prepared to subscribe to. However, a company which is involved in cyclical business where sales and profits are subject to periodic ups and downs, should have a relatively low gearing. On the other hand a company where sales and profits are stable should be able to employ a larger amount of debt.

(3) Cost of Capital:

The cost of equity capital has been found to be higher than the cost of debt because of the risk borne by the common stock holder when a company that uses a combination of debt and equity is compared with one using only equity. The cost of each types of capital will therefore be important in determining how much a debt and how much of equity should be used. The cost of capital to the firm is the weighted average cost of capital which consists of debt and equity weighed by their proportions or market value (sometimes in book values) in the capital structure.

It follows therefore, that the impact of financing decision on the average cost of capital should be evaluated and the criterion should be to minimise the overall weighted average cost of capital or to minimise the value of the firm. A company cannot continually minimise its average cost of capital or maximise its market value by employing debt as observed by J. Freear (1985) when he stated that "Most companies operate at lower than 50% leverage suggest that managers are unconvinced by the advantages of additional debt." According to Pandey (1986) "in practice there is generally a range of debt equity within which the cost of capital is minimum or the value is maximum". He stated further, that the range can be found out empirically and the firm can operate safety within that range.

The implication of J. Freear (1985) statement is that a firm operates within some range of combination of debt and equity, which is not exceeded. This Pandey (1986) attributed to a particular range of combination of debt and equity where the cost of capital is minimum. To exceed this range implies that the average cost of capital will be high and the market value of the firm will not be maximised.

(4) Cash flow of the firm:

The firm must have ability to generate sufficient cash to settle the financial commitment in form of interest, preference dividend and their principal (if applicable) as and when due under any adverse condition. This necessitates a clear prediction and evaluation of the future cash flow of the firm whenever a decision as regard financing investments using debt is to be made. The cash flow ability of the firm is one of the most important factors to be considered especially within the Nigerian context. Over the years we have heard of the financial institution declaring a huge amount of profit with high earnings per share and assets per share, yet they were distressed, they were insolvent. Consideration should therefore be given to the cash flow ability of the firm that the paper profit which lack cash backing and can easily be manipulated top deceive the public. The lenders must evaluate the cash flow ability of the firm, in the same vein finance managers must ensure that they prepare a future cash flow ability before they delve into borrowing.

However, to be able to show the cash flow ability of the firm the finance managers must prepare performance statements including cash flow to predict the cash flow expected during a

period. This point was emphasised by Van Horne (1973) when he stated that:

The analysis of debt to equity ratio alone can be deceiving and an analysis of the magnitude and stability of the cash flows relative to fixed charges is extremely important in determining the appropriate capital structure of the firm. To the extent that creditors and investors' analyses a firm's cash flow ability to service debt and management risk preference correspond to those of investor's capital structure decisions made on this basis should tend to maximise share price.

The importance of cash flow ability of the company can be further buttressed by the True Blood Report of 1973 (Glautier and Under down 1986) when they call for inclusion in financial statements, statement of forecast flow to aid in decision making.

(5) Control:

In designing the capital structure, the desirability by the existing shareholders for maintaining control should be considered especially in a tightly held company, in such and instead fund can be raised through debt.

(6) Flexibility:

Pandey (1996) described flexibility as "The firm's ability to adapt its capital structure to the needs of the changing conditions". While Lawal A. J. (1989) describe it as "the desire to maintain adequate reserve borrowing capacity for periods that money may be tight in the economy or when there is urgent need for more fund". The capital structure of a firm is flexible if it has no difficulty in changing its sources of fund. The financial plan of the firm should be flexible enough to permit changes in the composition of the capital structure.

There are basically three long-term external sources of fund, these are ordinary shares, preference share and debentures/loan stock. As more debt is employed there is tendency for inflexibility in form of covenant with creditors as to maintain, when dividend is to be paid and others . That is why excessive debt should be avoided. Within Nigeria context, the issue of share seem to dominate and the shares cannot be repurchased by the companies themselves as is the practice in U.S.A. This gives American companies high level of flexibility whereby shares can be repurchased at any time and substituted with debt as the circumstance demands. As far as Nigeria companies are concerned the flexibility of their capital

structure depends on the debt capacity of the firms, the higher the unused debt capacity the higher its flexibility.

(9) Size of the company:

As a company grows and as the nature of its business changes, so are its capital needs. Technological advances and increased labour costs can change a labour intensive industry with little need for debt into a capital-intensive industry greatly dependent on debt financing. The size of the company will determine the needed fund and also the possibility of future expansion makes it important for the firm to plan an appropriate capital structure. It is worth noting that a small size company faces difficulties in raising fund through long term debt and thus have to rely on equity as source of finance. While in the case of large companies with large assets based for collateral security, can easily employ long term debt and this leads to greater flexibility.

Another rationale for the belief that the firm's size is influential with respect to capital structure lies in the evidence that larger firms may be more diversified, enjoy easier access to the capital markets, receive higher credit rating for their debt issues and pay lower interest rates on borrowed funds.

(3) Marketability or lender attitudes:

The readiness of investors to purchase the particular types of financial instruments must be considered. The finance managers must be well acquainted with opportunities that are opened in the capital markets. At one time equity may be well favoured while at the other time debt is well favoured, in such instances the finance manager must ensure that the appropriate security is issued to be able to raise the desired fund bearing in mind other relevant factors.

Marketability also has a direct bearing to the state of the shares market economy, in a depressed market economy, company should not issue ordinary shares but wait until the economy revives and during boom period in shares market, it may not be advisable to issue debenture. The leverage level of the firm also affects the marketability of debt instrument, a high levered firm should not issue debt but rather equity to ensure adequate marketability.

(4) Statutory provision on capital structure:

In Nigeria a firm thinking of raising funds that will eventually affects its capital structure has to consider the limitation, imposed by the company's articles of association, which is usually expressed as a multiple of shareholders funds. These

borrowing limits can not be altered except with the approval of the shareholders at a general meeting of the company.

(o) The tax policy of the government:

The financial policy of the companies is also affected by the tax policies of the government. Interest on debt capital is a deductible expense, while dividends are not. Hence, the higher a firm's corporate tax rate the greater the advantage of using debt. This fact was supported by G. Donaldson (1962) when he wrote that "the combination of moderate interest rates and high level of corporate income tax enable debt capital to produce significantly better earning per share than would a comparable amount of capital provided by an issue of either common or preferred stock"'

The level of debt capital (gearing) in the capital structure vary between one country and another, largely as a result of differing economic and social histories. For example in former West Germany and to some extent in Japan, the banks dominate the capital markets. They are the main providers of both equity and loan finance and they will usually have board representation in all companies in which they invest. It follows that they will be largely indifferent to the risk aspects of gearing when providing fresh capital to a particular company.

Instead, gearing levels will be determined by other factors such as legal requirement, taxation and liquidity.

2.3 FEATURES OF OPTIMUM/APPROPRIATES CAPITAL STRUCTURE

An optimum capital structure for any widely held company is one which maximises the long run value per share of the common stock on the market. This is not quite the same as asserting that the optimum capital structure is one that maximises profit or earnings per share. For both the earning per share of stock and the rate at which they are capitalised must be considered. The amount of financial risk that a firm caries helps set the capitalisation rate. If a firm's financial structure carries too much borrowers risk, the market may set a lower price for the shares that it would give for a similar shares with perhaps somewhat smaller earning but less financial risk.

In order to maximise the long run value of the common stock, the financial decision makers- the management will in general develop the financial framework which will cause the common shares to sell at the highest price on the present market.

The finance manager of a company should develop an appropriate capital structure suitable for his firm. This can be done when all those factors relevant to capital structure are taken into consideration. The capital structure should be planned taking into cognisance the shareholder's interest and as much as possible the stakeholders (that is employees, creditors, customers, government and society). The finance manager as much as possible should make use of debt to maximise the accruing benefit of tax shield, at t he same time the level of leverage must not be too high as to lead to insolvency. In essence, any developed capital structure should aim at maximising the long-term market price per share.

A survey of literature shows Pandey (1986) and Donaldson and Pfahl (1963) as authors that describes the features of a sound or appropriate capital structure. These feature include:

Profitability: The capital structure that is appropriate is the one that increases the profitability of the firm. The cost of leverage should not be so high as to lead to reduction in the profit of the firm.

Solvency: The chosen combination of debt and equity should not lead to insolvency. The firm must be able to maintain a good level of liquidity in order to be able to defray the interest on

debt. It is an established fact that excessive use of debt can lead to insolvency, refusal by lenders to borrow more fund which can eventually result in bankruptcy. Therefore an appropriate capital structure will be the one where debt does not threatens the solvency of the firm.

Flexibility: The appropriate capital structure should never lead to inflexibility but it must be flexible enough to permit the firm to change its capital structure to meet its changing conditions. In other word it must be easy for the firm to change its sources of finance at a lower cost and without unnecessary delay and also easy for them to raise additional fund to finance profitable investment opportunities.

Conservatism: In raising debt capital, the debt capital must be considered, it is not even important for the capacity to be reached if it will have an adverse effect on the firm. It follows that the appropriate capital structure is the one that is within the stipulated debt capacity in the Articles of Association of the firm. However, when a situation changes like in inflationary economy like Nigeria it is advisable that there should be changes to reflect economic reality.

Control: The appropriate capital structure as discussed earlier depends on the desires to retain control. In large corporations

whose stock is widely owned may choose additional sales of common stock because such sales will have little influence on the control of the company,. In contrast, the owners of small firms may prefer to avoid issuing common stock in order to be assured of continued control. The appropriate capital structure is the one that maintain the existing control by avoiding dilution which can have a negative effect on the management of the firm. The issue of control is to less developed economies like Nigeria, India but may not be applicable to developed market economy like USA where a company can repurchase its share, issue of control does not hold there.

2.4 *THEORIES OF CAPITAL STRUCTURE*

2.4.1 Assumptions of capital structure theories

According to Van horne (1974) the theories of capital structure are based on certain facilitating assumptions. These assumptions include:-

The company pays out all its earning as dividend, that is, it ignored the effect of dividend and retention policy;

The ratios of debt to equity (gearing) for a firm is changed by issuing debt to repurchase stock or issuing stock to pay off debt. There are no transactions cost for issues;

The earning of the company are expected to remain constant in perpetuity and all security holders share the same expectations about these future earnings;

Taxation for the time being is ignored. This assumption is removed later;

Business risk is also constant, regardless of how the company invest its funds.

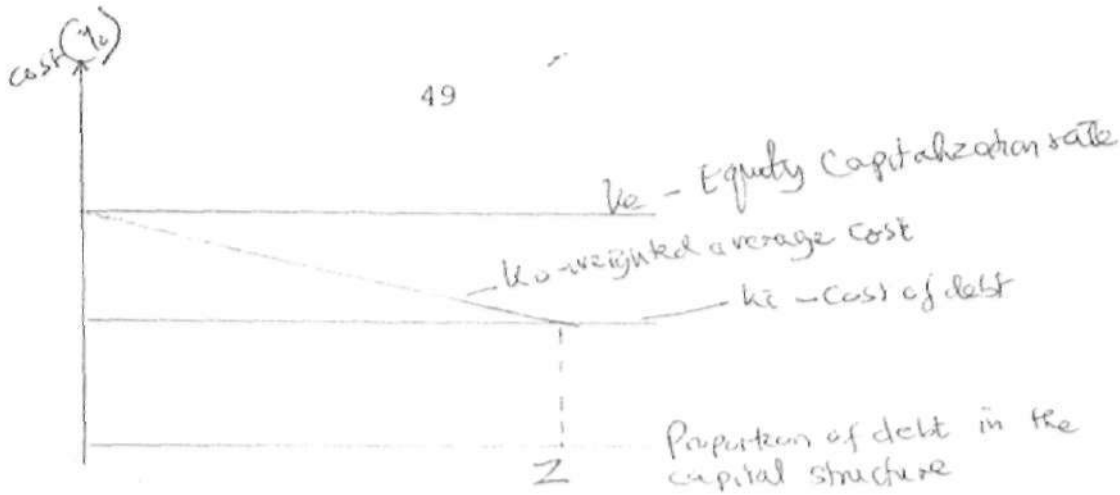
2.4.2 NET ICOME APPROACH

David Durand (1959) proposed two approaches to the valuation of earning of company: The Net Income (NI) approach and The Net Operating Income (NOI) approach. Under the Net Income approach, the company capitalizes net income instead of net operating income. By Net Income it means the earnings after deduction of interest. Net operating income will always be higher than Net Income, the difference is attributed to interest charges deducted from the former to give the latter.

Under Net income method, the total investment value does not remain constant but increases with the proportion of bonds in the capital structure. The advocates of Net Income method take a position that is somewhat straight forward. Those who subscribe to this method contend; first that conservative increases in bounded debt do not increase the risk borne by the

common stockholders. Secondly, that a package of securities containing a good proportions of bonds will justifiably command a higher market price than a package of common stock alone.

According to the Net Income approach, the firm is able to increase its total valuation and lower its cost of capital, as it increases the degree of leverage. As a result, the market price per share increases. The critical assumptions of the net income approach are that the cost of debt (ki) and more particularly Equity Capitalization Rate (ke) remain unchanged as the degree of leverage increases and also they assume that the firm does not become more risky in the minds of investors and creditors as the degree of leverage increases. As the proportion of cheaper debt funds in the capital structure is increased, the weighted average cost of capital (ko), decreases and approaches the cost of debt ki. The optimal capital structure would be the one at which the value of the firm is greatest and the cost of capital is lowest. At that structure, the market price per share of stock is maximized. The significance of this approach is that a firm can lower its cost of capital continuously and increase its valuation by the use of debt funds.



Graphically, the NI approach is illustrated in Fig.2.1. The degree of leverage is plotted along the horizontal axis, while the percentage rate for ke, ki and ko is on the vertical axis. The optimal capital structure is the one farthest to the right, at the point Z where ko approaches ki.

The difference between Net Income method and Net Operating Income Method is that the Net Income method results in a higher value for the common stock except for companies capitalized entirely with stock. For such companies the two methods give identical results provided the same capitalization rate is used.

2.4.3 NET OPERATING INCOME (NOI) APPROACH

The NOI approach capitalizes earnings before deduction of interest (Net Operating Income). This approach held to the fact that the total value of all bonds and stocks must always be the same regardless of the proportion of bonds and stocks: Proponents of NOI method argue that totality of risk incurred by all security holders of a given company cannot be altered by

merely changing the capitalization proportions. Such a change could only alter the proportion of the total risk borne by each class of security holders. This approach is based on the assumption that the overall capitalization rate of the firm ko, is constant for all degree of leverage. According to this approach, the real cost of debt and real cost of equity are the same ko. According to Van Horne (1994), under this approach, the cost of debt has two parts; the explicit cost or "hidden" cost, which is represented by the increase in the equity capitalization rate that accompanies an increase in the proportion of debt to equity. As the cost of capital of the firm cannot be altered through leverage, this approach implies that there is no one optimal capital structure.

With this approach, Net Operating Income is capitalized at an overall capitalization rate to obtain the total market value of the firm. The market value of the debt is deducted from the total market value to obtain the market value of the stock. In other words, the market capitalizes the value of the firm as a whole, as a result, the breakdown between equity and debt is unimportant. An increase in the use of supposedly cheaper debt funds is offset exactly by the increase in the equity capitalisation rate k_o^e .

capital structure do not affect the total market value of a company, nor, therefore its average cost of capital. The theory implies that the value of the firm is independent of its capital structure. This theory is based on the following assumptions;

Capital markets are perfect. Information is costless and readily available to all investors; there are no transaction costs; and all securities are infinitely divisible. Investors are assumed to be rational and to behave accordingly.

The average expected future operating earnings of a firm are represented by a subjective random variable. It is assumed that the expected values of the probability distribution of all investors are the same.

That firms can be divided into "equivalent return" classes such that the return on the shares issued by any firm in any given class is proportional to (and hence perfectly correlated with) the return on the shares issued by any other firm in the same class. This assumption implies that the various shares within the same class differ, at most by a "scale factor".

The absence of corporate income taxes. This assumption was removed in their correction that was made in 1963. They describe their theory in three propositions:-

The market value of any firm is independent of its capital structure and is given by capitalization its expected return at the rate appropriate to its class. This also implied that the average cost of capital to any firm is completely independent of its capital structure and is equal to the capitalization rate of a pure equity stream of its class.

It follows from this proposition that the total market value of a company is independent of its capital structure and is calculated by capitalizing the company's expected flow of earning from operations at an appropriate discount rate. This discount rate will depend upon the 'risk class' of the company, that is, the degree of business risk to which its activities are subject. Put in another way the market value of a firm depends only on its real earning power and on the market capitalization rate for pure equity stream of its class and not at all upon the particular mix of security types that characterize its financial structure is basically a reflection of the assumption of perfect capital market - an assumption implying, among other things, that for comparable collateral, the supply curve of borrowed funds for individuals is the same as that for corporations.

The expected yield of a share stock is equal to the appropriate capitalization rate for a pure equity stream in the class, plus

a premium related to financial risk equal to the debt to equity ratio times the spread between the pure equity-capitalization rates and cost of debt. Equivalently, the market price of any share of stock is given by capitalizing its expected return at the continuously variable rate. This implies that the apparent gain in term of the cost of capital coming from the ability of a fire to finance an investment with "cheap" debt capital is offset (and with rational behaviour in a perfect capital market exactly offset) by the correspondingly higher cost of equity capital. At a higher degree of leverage, the cost of debt capital rises. This is because the financial uncertainty of increasing leverage begins to be felt by the debt holders, who begin to require greater returns to compensate them for the increasing risks. M & M asserted that the increase in the cost of debt might be offset by as decline in the rate of increase in the cost of equity or even a down turn in the cost of equity capital would be brought about by equity holders in the levered company perceiving progressively less financial uncertainty as leverage becomes more and more extreme.

The cut off rate for investment purpose is completely independent of the way in which an investment is financed. This

implies a complete separation of the investment and financing decision of the firm.

In their original (1958) article, M & M excluded taxation from their analysis, and so did not allow for the potential tax-deductible benefit of debt interest. The tax deductibility of interest would have the effect of causing the overall cost of capital to decline as debt is added. In a subsequent article in 1963, M & M acknowledge that the introduction of tax effects in this way would imply that the average cost of capital is no longer completely independent of leverage, but declines with increases of leverage.

The basis of M & M thesis is an arbitrage process. M & M assume that individuals can borrow and lend at the same rate of interest as companies. They assert that with this assumption, the capital structure of a firm does not matter, because whatever the financing mix the market value of the firm will be the same. In essence, M & M hypothesis is crucially dependent upon the willingness and ability of some market participants to engage in arbitrage operations, by which means the equilibrium of the market will be maintained over time. Temporary dis-

equilibrium in the market means, specifically any display among the total market values of companies in the same 'risk class' or

equivalent return set are restored. For example, suppose that there are two companies in an 'equivalent return' set, company E is financed entirely by equity and company D has a capital structure which includes debt. If there is a dis-equilibrium so that D has a higher market value than E, market participants would take advantage of the difference by selling equity in D, borrowing money equate their personal leverage to the degree of corporate leverage in D, in the equity of which they had hitherto invested. Using these funds to buy in the unleveled and lower value company E, the pressure on the price of D's equity will force down its price until this is equal to the market value of all equity company E. This sector of the market is thereby returned to equilibrium and no further gains are possible.

THE WEAKNESS OF MODIGILIANI AND MILLER'S THEORY

Personal gearing does not carry the same risk as corporate gearing. The limited liability companies enjoy means that the investor is safer if his company borrows on his behalf that he is if he borrow on his own account.

Personal borrowing is not at the same risk of interest as corporate borrowing, In fixing interest rate, bankers have

regard to the credit worthiness of the customer and the absolute size of the loan amongst many other factors.

There is transaction costs in the arbitrage process. There are considerable costs involved in buying and selling investments and in the monitoring of their performance.

There are institutional factors against arbitrage process. Many institutional investors would be prohibited from borrowing to finance investment purchases. Similarly, small investors any find their banks unwilling to lend to them for this purpose.

Taxation exists and debt interest is a tax-deductible expense, whereas equity dividends are not.

M & M hypothesis has been severally criticized by other writers Durand (1959) opined that M & M committed an error in confusing "switching" with "arbitrage" and that true arbitrage when possible is a powerful equalizer, but is not ordinarily possible in corporate securities. By switching Durand means that M and M have endowed investors with unrestricted freedom to switch accounts whenever the market deviates from equilibrium. He stated further that arbitrage can be effective if only a few professional trader's are alert and aggressive switching on the other hand may require active co-operation of a large body of investors. Fred Weston (1963) observed that since personal

leverage, is not a perfect substitute for corporate leverage the arbitrage operations described by M & M are not possible, he went further to observe a problem of non-homogeneity in identification of the risk class. Robert Heinkel (1982) concluded in his paper by stating that in equilibrium, riskier, more valuable firms have larger amount of debt financing and that under imperfect information capital structure is relevant whereby refuting M & M theorems. Solomon (1963) on his own being one of the staunch traditionalist evaluated M & M hypothesis and concluded that in practice the average rate of interest paid on debt, rose as leverage increased. Thus, refuting M & M hypothesis that weighted average cost of capital (Ko) will not rise, no matter how far the use of leverage is employed.

However, some supported the M & M hypothesis that given their assumptions as stated earlier the choice among various financial instruments is inconsequential to the value of a firm one of which is Stigitz (1974) who shows that financial policies are irrelevant even with risky debt provided the investment opportunity remains unchanged by financial policy. Ben-Sharhar Haim (1968) concluded in his paper that in "a perfect market where the interest rate is constant any capital structure is efficient". Fama and Miller (1972) also argued that if the

capital market is perfect even if bankruptcy is possible firms cannot alter the total market value of their outstanding securities by issuing or retiring any type of security.

2.4.4 Traditional Approach

The traditional approach to valuation and leverage assumes that there is an optimal capital structure and that the firm can increase the total value of the first through the judicious use of leverage. The traditional approach clearly disagrees with the Net Operating Income approach, neither is it the Net Income approach in the pure form. It is a modified Net Income approach. It suggests that if a large corporation employs moderate amount of leverage, the interest on debt and the capitalization facto applied to the earning available for common stock do not rise to the same degree that risk premiums accompanying the leverage employed by individuals would increase. Thus increasing the proportion of debt employed to finance a firm would increase the expected market value of the firm to some critical proportion of leverage. Beyond that point, capitalization factors rise sufficiently to offset the added earning available to common stock, resulting in the decline market value of the firm.

The traditional view of capital structure decisions is that the substitution of debt for equity in the capital structure

eventually reduce the overall cost of capital to a minimum point or range beyond which it starts to rise again. Expressed in market value terms, the minimum point cost of capital is the maximum market value. The implication of their view is that the level of leverage is an important factor in determining the overall cost of capital and the total market value of a company. The optimal point or range of leveraged would tend to differ from company to company and industry to industry.

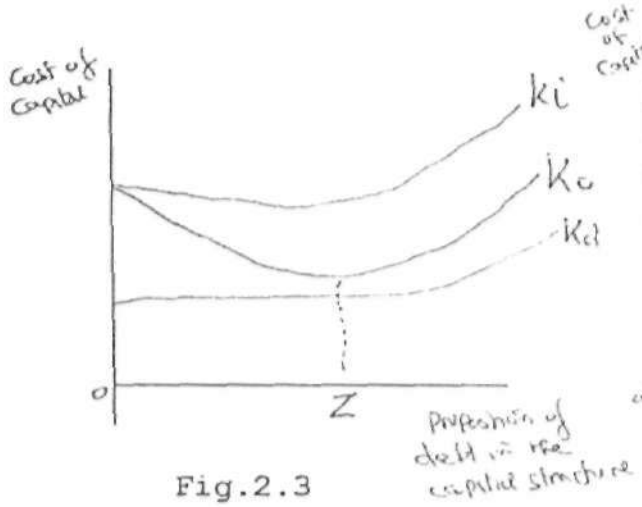


Fig.2.3

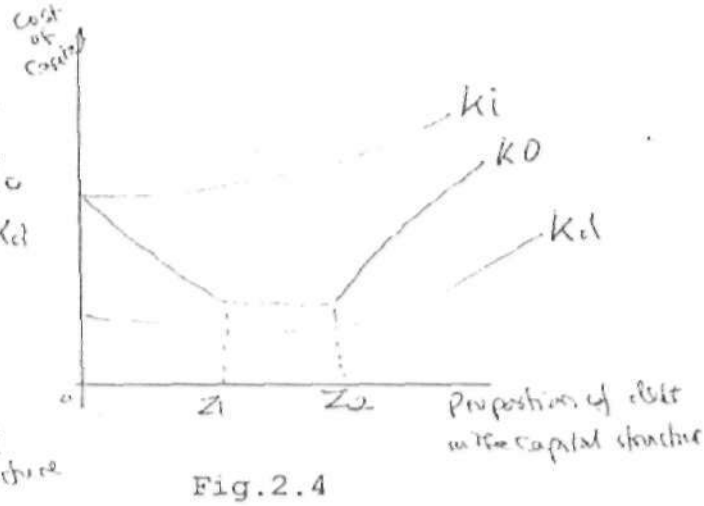


Fig.2.4

From fig.2.3, the optimal capital structure is indicated by point Z. As the proportion of debt finance increases, the equity shareholders require a large return to compensate them for their increased risk. Initially an increase in debt finance lowers the weighted average cost of capital, but after point Z, shareholders requirements increase to such a level that the weighted average cost of capital "Ko" rises again. At point Z1,

the proportion of debt becomes so high that lenders demand an increased rate of interest. In this case the total value of the firm can be reduced by an excessive use of debt capital.

Solomon (1963) saw the overall cost of capital curve as being flat bottomed and saucer shaped, with an optimal capital range Z1 to Z2 as depicted in fig.2.4. He held the view that the lowest average cost of capital (and the highest value of firms) is within a specific range but not specifically a single point. Within this range Z1 and Z2 any combination of debt and equity will be optimum.

Despite the variation among the traditionalist, they still stand on the same agreement of the existence of optimum capital structure contrary to the opinion of the proponents of the net operating income approach. The traditionalist view of optimum capital does not support the position of the Net Income approach entirely, although they fundamentally agree that the use of low-cost debt can change the market valuation of the firm. They argue that a firm can achieve greater earning per share and a higher valuation, but it will not be as high that suggested by proponents of Net Income approach. This stems from the fact that shareholders required rate of return, Ko, rises to offset some of the benefits accruing from the usage of low-cost debt.

The traditional approach is supported by scholars in their articles. Fred Weston ,(1963) supported the traditional position when he states that the traditional view rests upon the nature of corporation and investor behaviour. He asserts that the corporate institution is a device which shifts a portion of financial risk from owners to creditors whereby investors losses are limited to the amount actually invested in the enterprise, their gains are not so restricted. Personal leverage does not have the same limited-risk characteristics. Ezra Solomon (1963) supported the traditional approach when he observed that:

One kind of evidence in favour of the traditional position is that companies in the various industry groups appears to use leverage as if there is some optimum range appropriate to each group while significant inter company difference in debt ratio exists within each industry, the average usage of leverage by broad industrial groups tends to follow a consistent pattern over time.

Eli Schwarzt (1959) supports the existence of optimum capital structure when he states that:

> "Under the assumption that firms will attempt to maximize the long run market value of the ownership shares, there exists an optimum capital structure of each individual

> firm. This optimum capital structure varies for firm in different industries because the typical asset structures and the stability of earning which determine inherent risks vary for different types of production".

Though there exists three approaches to the effect of capital structure on the value of a firm and its cost of capital. These three approaches over the year have been grouped into two, the traditional approach M & M (Net Operating Income) approach. The traditionalist are of the opinion that the value of a firm and its cost of capital is not independent of its capital structure (theta is irrelevant of financial policy).

2.5 IMPLICATION OF THE CAPITAL STRUCTURE THEORIES ON FINANCING DECISIONS

The theories are about the behaviour of the total market value of the firm (or share prices) and the overall cost of capital and their components, in response to changes in the level of debt in the capital structure of the companies. Mangers will be concerned about the nature of this response to the extend that the overall cost of capital of the firm and hence its total market value, can be influenced by their decisions about the ways in which investment will be financed. From the theories both traditional view and M & M hypothesis adjusted for taxation, changing the capital structure of their company,

managers can increase its total value and reduce its average cost of capital, because more investment opportunities would have become worthwhile. That is, as the cost of capital is reduced then the required return will be commensurate enough as to accommodate more profitable investment opportunities. It is an established fact both from theoretical and empirical perspectives that shareholders can gain from the firm's judicious use of fixed financial commitment, it follows that the mix of firms' capital ought to be an important policy variable for a management pursuing the goal of shareholder wealth maximization.

The traditional view is that the use of lower - cost debt will initially cause the average cost of capital to fall until it reaches an optimal point or range. Thereafter, the increasing financial risk perceives by equity holder and market participants generally will cause the cost of equity capital to increase. The debt holders and market participants who perceive that the risk of default on the debt will fall and the cost of capital increase then reinforce the increase. The implication of the traditional approach on their finance managers is that they must establish the average cost of capital of their firms and their market values. They must be able to forecast the likely

effect of different financing methods on the overall cost of capital and the value of the firm after this proposed investment, for which the finance is needed, has been accepted. The determination of the cost of capital will help in establishing the cut off rate for investment opportunities in order to maintain the market value of the existence of optimum capital structure, it is important for the finance managers to know the cost of their capital and identify their position whether they are within the optimum range or what additional debt is required to reach the range.

On the other hand, the M & M hypothesis simplifies the finance manager's task with regard to managing his company's capital structure. Their 1958 hypothesis appears to indicate that the finance manager can legitimately use debt or equity to finance new investment or switch from, one to another, in the knowledge that his decision will have no impact on the average cost of capital and the value of his company. However, the tax deductibility of debt interest advantage will apparently mean that he should maximize the amount of debt in the capital, which will decrease with leverage as a result of the tax effect. The simplistic view of the role of finance manager has been cautioned by Modigiliani and Miller in their 1963 correction.

They concluded that the existence of a tax advantage for debt financing does not necessarily mean that corporations should at all times seek to use the maximum possible amount of debt in their capital structure. Hence, the implication on the finance manager is that of caution not to accept a simplistic role as put across in M & M 1958 article because: higher debt may lead to debt holders constraining his authority to raise a new debt finance or take on higher risk investments, in order to safe guard their own wealth. As a result of which the company's investment plans may be aborted, thus diminishing the quality and quantity of its expected operating earnings, lowering its total market value and increasing its average cost of capital. In the presence of market imperfection such as bankruptcy cost, differing costs of borrowing, institutional restrictions and imperfection in informing as witnessed in less developed market economies like Nigeria, the probability of corporate failure becomes more likely as high levels of leverage are reached. As long as there costs will begin to outweigh the beneficial tax effects of high leverage. Thus, the finance manager is expected to employ debt finance to the extent that it will not endanger the existence of the company itself.

2.6 EMPIRICAL FINDING ON CAPITAL STRUCTURE

A lot of empirical works has been done especially in advanced economies such as U.S.A., some of the result are in favour of M & M hypothesis while others are in support of the traditional position. M & M in their original (1958) article, used data produced by two studies on electric utility companies (43) and oil companies (42) as surrogates for 'equivalent return' sets. They found some, but not conclusively support for their contention that the overall cost of capital and value of a firm is independent of leverage and is constant. This finding, however, went against later (1963) amended hypothesis, which allowed for the tax deductibility of debt interest. In 1966 they developed a more complex multiple regression involving two-stage estimate in order to eliminate some bias in the estimates. The sample they use consists of 63 separate firms representing all of the (consolidated) systems classified as of 1950 as class A by the Federal power plus of smaller class B systems whose assets devoted to electricity were at least $15million in 1950. The cross-sectional study was carried out for 1954, 1956 and 1957, their conclusion was still in support of their hypothesis that the cost of capital and value of a firm is independent of the capital structure.

However, their hypothesis and their empirical based findings were strongly criticized, especially by Weston and Barges. Barges (1963) argued that the use of market values for debt confused 'business risk' and 'financial risk' and that this could introduce a bias in favour of their hypothesis. Barges suggested that it could also be seen as a consequence of a change in business risk, that is, in the risk complexion of the operating earning, with a resulting increase in the cost of equity capital and a decline in its market value. This, in turn, will affect the ratio of debt and equity market values even though there has been no change in the company's obligations to debt holders. Barges solution was to substitute book, values for the market values, he adjusted the book values and to remove any bias he tested his work against data from railway departmental store and cement companies. He concluded that the results of his study supported the traditional position and disapproved the M & M hypothesis. On the other hand, Gordon (1967) pointed out that electric utilities were subject to considerable government regulation, the existence of which might be expected to influence both the 'financial risk' and the 'Business risk' associated with those companies. Thus he criticized the work of M & M Weston (1963) sought to eliminate differences in expected

growth rates of companies as an influence on the average cost of capital and total market value. In his studies, Weston had to use the historical growth rates of earnings over the ten previous years as measures of future expected growth rates. These he used to remove growth form the date, so that any changes in the average cost of capital could not be ascribed to growth expectations. He found that the overall cost of capital fell as leverage increased and that the cost of equity capital did not increase with leverage. Thus his finding supported the traditional position.

Ronald Wippern (1966) carried out a research and his finding provides support for the intermediate or traditional view that shareholder wealth is enhanced by the firms judicious use of fixed commitment financing. He observed that the capital markets are not, according to the evidence derived in his study, sufficiently perfect to validate the Modigiliani-Miller arbitrage argument and in addition to tax effects, firms do gain by employing a mix of finance sources. According to his conclusion the evidence has not established the existence of an optimal mix. The observed relationships show only that, through the range of financial structures observed in this sample, shareholder wealth increases with leverage. Robichek, McDonald

and Higging (1967) applied M & M's model in the years 1954-64 to the same sample of 63 companies as used by M & M. They observed that the miss-specification of the growth variable combines with the effect of value of the unknown factors embodied in the regression constant emerge as the main causes of the inadequacy of the M & M model. They conclude that the deficiencies in the M & M's model are so fundamental in nature that none of the estimates of the cost of capital reported by M & M can be considered reliable estimates of the true cost of capital to electric utility firms.

Brigham and Gordon (1968) observes by using 69 electric utility companies from 1958 to 1962 that the rate of return investors require on a share increases with the Corp-[oration's leverage rate. But the increase is smaller than would be true if investors were indifferent between leverage on personal and corporate accounts and that the cost of capital depends on how the capital is financed and the value of corporation's stock depends on its financing policy. Edward Altman (1969) in his finding states that "corporation's bankruptcy potential is a prime example of a market imperfection of an economic reality, which may affect valuation properties both theoretically and empirically". He supported the traditional position. His

empirical results of the investigation show significant evidence that the equity share value of a firm can be expected to fall in bankruptcy.

Sarma and Rao (1969) employ the M & M's model to a non-regulated industry and test the M & M hypothesis on the influence of debt on the value of a firm. They took a sample of 30 engineering companies from Indian engineering industry and run the regression equations for three cross section years-1962, 1964 and 1965. Their regression results reveal that debt has non-tax advantages also and it shows evidence in support of the conclusion that investors prefer corporate to personal leverage and, therefore, the value of a firm rises to a leverage rate considered prudent. While Rao and Litzenberger (1971) carries out a comparative study of the effects of capital structure on the cost of capital in a less developed, inefficient capital market (India) and in a highly developed and efficient capital market (United States). The effect of leverage on the cost of capital is tested on a sample of 28 Indian utilities and on a sample of 77 American utilities. The results for the American utilities are consistent with the M & M thesis that after allowing for the tax advantage of debt financing the cost of capital is independent of capital structure. The results for the

Indian utilities are inconsistent with the M & M independence hypothesis and support the more traditional approach to valuation that moderate amounts of debt will lower the firm's cost of capital. They concluded by stating that (1972):

> "The Modigiliani-Miller thesis that, after allowing for the tax advantage of debt, the firm's cost of the capital is independent of capital structure does not appear to be applicable in the case of a developing economy. In a developing economy, where the capital market is not well organized and market imperfection are far greater than in a developed country, the more traditional approach to valuation appears to be applicable. While theories of valuation in a perfect market may be reasonable approximations of reality for highly developed and efficient capital markets, they do not appear to the relatively less efficient capital markets of developing countries".

Schwartz and Aronson (1967) in their findings supported the existence of optimum financial structure when they took a sample of firm financial structure from 1928 to 1961 using about three random sample each consists of eight firms for each class. Ronald Masulis (1983) when he carries out a research on the impact of capital structure change on firm value, observed that stock prices and firm values are positively related to changes

in debt leverage. Senior security prices are variables. His evidence is consistent with model of optimal capital structure and with the hypothesis that debt level changes release information about changes in firm value.

From the empirical finding as discussed above, it can be deduced that there are some inconsistencies on their findings on the effect of capital structure on the value of a firm. While some in their findings concluded that except for tax advantage, the value of firm is independent of its capital structure, others were of the opinion that the value of firm in independent upon its capital structure. However, in all the empirical work only two comes from less developed market economy, one of which is the one carried out by Rao and Litzenberger (1971) which result indicate that after allowing for the tax advantage of the debt, the firm cost of capital is independent of its capital structure in developed and efficient capital market like that of U.S.A. But this does not hold in less developed economy and less efficient capital market like India where the cost of capital and the value of a firm depend on its capital structure. The second is the research conducted by Sarma and Rao (1969) which shows that the value of a firm rises up to a leverage range considered prudent by management of corporation. It is believed

that this study will reveal the situation in Nigeria, another less developed capital market.

2.7 CHAPTER SUMMARY

This chapter start with the discussion of what capital is all about, the types of long term capital sources available to firms and their mix often referred to as the capital structure of a firm. Factors to be considered in making capital structure decisions are discussed and these include leverage effect on earnings, Growth and stability of sales, cost of capital, cash flow ability of the firm among others. It was also discussed what authors considered as the features of an appropriate capital structure and these include profitability, solvency, flexibility, conservatism and control.

The three approaches to the theory of capital structure were considered and these included the net income approach, net operating income approach and the traditional approach. These can be grouped into two position, the traditional position which were of the opinion that successive additions of long term debt to the capital structure lowered the average cost of capital of the company until some optimum point or range is reached. Thereafter, further additions of debt served to increase the average cost of capital and lower the market value of the

company. The other position put forward by Modigiliani and Miller, was that what really mattered was the future earnings stream of the company and not how it was financed, because investors could arbitrage away any differences in values among otherwise identical companies, which arose from the capital structure difference.

The chapter also considered the cautions and sensitive role being performed by Financed Managers, never to consider financing decisions to be irrelevant because of the various factors that affect it and the inherent dangers associated with excessive debt such as risk of bankruptcy. They occupy a position of watching and planning the capital structure to maximize the shareholder's wealth. A lot of empirical work has been done on the effect of capital structure on the value of a firm and its cost of capital in developed and efficient capital market such as that of U.S.A. and little has been done in less developed market economy. The result obtained so far show some inconsistency in their finding which are somehow difficult to reconcile. Some of the empirical findings supported the traditional position that there exists an optimal capital structure where the value of the firm is maximized, while others supported the Modigiliani and Miller thesis that except for tax

advantage the cost of capital of firm and its market value is independent of its capital structure.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 *Sources and Methods of Data Collection*

A research of this type entails obtaining quantitative data from the source available to enable an analysis to be made on the relationship between capital structure and the value of a firm. The major source of data is the data obtained from the published financial statements of the companies under consideration over a considerable period. In order to discuss the practical issues on capital structure, personal interview were conducted. Those interviewed include stock-broking firms, Management consultants and finance Managers.

As regards the methods of data collection, there are various methods available for research of this type and these includes Historical research technique (field data from financial statements), Questionnaires and personal interview. However, in this study sources and methods of data collection include:-

(i) Field data from financial statements (Historical data).

The data used for the analysis were obtained primarily from the published annual reports and accounts of the individual

quoted companies. These are made up of the individual Balance Sheet and Income statements.

From these reports, it is possible for such information as the earning before and after tax, interest paid on Debenture and long-term loans (or the rate of interest to be applied to the Debenture/Loan stocks) and long-term liabilities, assets, Dividend Pay-out, Taxation and tax rate, ordinary shares among others to be obtained.

The stock Exchange Annual Reports and Accounts provide information about the listed Debenture stock on annual basis and also information as regard the new issues during the year corroborated by the information obtained from the Securities and Exchange Commission (SEC) Annual Report and Accounts. The price quotation at the beginning and at the end of financial year were obtained from Business Times, these were compared with those obtained from the Nigerian Stock Exchange and found to be reliable. The Central Bank of Nigeria Annual Reports and Statement of Accounts (Various Issues), also provided us with some of the data we used, such as the Central Bank of Nigeria (CBN) Minimum Rediscount Rate (MRR) which provided a basis for the computation of the interest on long term loans and Debenture stocks.

(ii) Data from interviews:-

Questions were prepared and interviews were conducted to determine the practicability of the factors considered in making a choice among the various long-term source of capital in determining the best capital structure. The question were structure, however, provision was made for flexibility.

3.2 Research Population and Sampling Method

This research is aimed at establishing the effect of the capital structure (if any) on the valuation of quoted companies in Nigeria. The quoted companies in Nigeria are of two categories namely; those quoted in the First-tier Securities Market (FSM) and those in the Second-tier Security Market (SSM). This division has a considerable effect on the choice of the sample. The second-tier security Market was introduced in 1985 to enable small and medium-scale companies which were unable to meet the stringent requirements for admission into the first-tier securities Market have their shares and stocks traded in the market. Over the years there has been a considerable increase in the number of firms admitted into the market.

Table 3.2.1

Second-Tier Securities Market: Number of Quoted Firms

1989-1195

YEAR	1989	1990	1991	1992	1993	1994	1995
Number of firms Quoted.	9	15	18	20	23	21	20

Source: Adapted from Nigerian Stock Exchange Annual Reports 1989-1995).

Table 3.1 attests to the increase in the number of firms quoted in the second-tier Securities Market. However, according to the Stock Exchange Annual Reports and Statement of Accounts for several years (1989-1994) only few of these companies listed in the Second-tier Securities Market ever issued Debenture stock or loan stock, the Securities and Exchange Commission Annual Reports and Statement of Account attest to this fact. The only formal debt in their capital structure are term loans and Bank overdraft which are outside the scope of this study. However, this study is concerned with long-term debt in the form of Debenture stocks, loan stocks and long term loans, but excludes leases because of their restrictive applicability. It follows therefore from this observation that the Second-tier Securities Market is not considered in this research.

The first-tier securities market has existed for a long period of time and has shown a considerable increase in its

admission of firms into the market as can be seen in Table 3.2 below:

Table 3.2.2

First-Tier Securities Market: Number of Quoted firms 1989-1995

YEAR	1989	1990	1991	1992	1993	1994	1995
Number of firms Quoted	100	116	124	133	151	156	163

Source: Extract from Nigerian Stock Exchange Annual Reports (1989-1994).

According to the report available, no single issue was made during the 1995 accounting year, this development some attributed to the low Central Bank of Nigeria Marginal Rediscount Rate (riskless rate in finance) which stood at 13.5 percent. While others attributed this to low commercial rates and high inflationary rate which firms intending issuing Debenture and loan stocks considered may be unattractive to corporate debentures and loan stocks' investors.

The study is aimed at examining the effect of capital structure on the value of firm. For firms operating the January-December accounting year, the period 1990-'94 is selected (excluding 1993) for study. Similarly for firms whose accounting year differs from the one stated above, the period 1989/90-1993/94 is selected. The accounting year 1993 was excluded from

the sample period because of the political and economic instability which affected corporate performance. The selected years are deemed as years free of major economic disturbance, any other disturbance may not affect the result significantly. From the reports of firms selected , the effect of the spilt over of 1993/''94 accounting year would not be significant enough to bias the estimates. The Debenture stocks and loan stocks existing at the beginning of the financial year 1990 or during the 1989/''90 accounting year forms the base years of study.

From the research conducted so far discussed earlier in chapter two, selection; were made from firms in the same industry. This is done to ensure that firms selected are operating within similar conditions but facing different financial risks as a result of leverage, this Miller and Modigliani (1958) called homogeneity. In the selection of the sample size regards have been made for some level of homogeneity. The Nigeria Stock Exchange (NSE) classification was adopted with slight modifications and two groups were considered to permit comparative analysis. The two groups are conglomerates and Drinks group and Building Materials group. The conglomerates consist of firms large in size, and in operation, involved in diversified operations such as manufacturing, servicing and

merchandising.Building materials group consists of firms manufacturing cement and paints. Some sectors were omitted because of other reasons, for example the banking sector was omitted because of the issue of prudential guidelines which is believed to have affected their profit and because of their peculiar nature. Other were excluded because of poor performance as a result of the economic misfortunes, some because of none availability of data.

The following categorization and selection was made based on the availability of data, homogeneity and other factors discussed above as shown in Table 3.2.3 below.

Table 3.2.3

Industry/Sector	Number in the Sample
(1) Conglomerates and drinks	7
(2) Building Materials	5
	12

Some of the firms that fell within these industrial groups were excluded because of some reasons even though their performance is impressive. For example cement company of Northern Nigeria Plc was not quoted long enough to enable 9 years growth rate of fixed assets and earnings to be determined. Nigerian cement Company Plc was quoted at the beginning of the

sample year but has since been delisted. SevenUp Bottling Plc, Niger Cem Plc, Nigerian Ropes Plc and Nigerian Wire Industries were too small in size to be included in the sample. Others like SCOA Plc, U.T.C. Plc and IPWA Plc were omitted from the sample because of losses incurred during the period. Notice that losses incured will deter forecasting of the future adjusted earnings and the result will be far from economic reasoning. Similarly, some firms were omitted because of their short period of quotation which results in none availability of data. Example of such companies are Berger paints Plc, Premier paints Plc to mention but two.

The years 1990-1994 (excluding 1993) and 1989/'90 - 1993 were selected in order to determine the stability of the signs and values of the coefficient among periods of differing economic and capital market conditions.

3.3 Data Analysis Techniques

According to Firth (1977), the commonest valuation models include:-

(1) Dividend Growth Rate Model

The model is applied with a view that since companies give their shareholders a return only in the form of a dividend, the price of a share will be a function of expected dividends. The

capital gains the shareholder expects as part of his return are a function of the expected growth in dividend over time which is reflected in a rise in share price over time.

The model involves estimating a growth rate (g) at which dividends are expected to grow to infinite (∞) and multiplying the dividend by this figure, thus:

$$V = \frac{D(1+g)}{(1+R)} + \frac{D(1+g)^2}{(1+R)^2} + \frac{D(1+g)^3}{(1+R)^3} + \frac{D(1+g)^{\infty}}{(1+R)^{\infty}} \quad \ldots\ldots(1)$$

$$\text{i.e. } V = \sum_{t=1}^{\infty} \frac{D(1+g)^t}{(1+r)^t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

where

V = Intrinsic value

D = Current dividend

t = Number of year

r = Discount rate

The intrinsic value is equal to the current dividend (D) growing at the rate 'g' and discounted by rate (r) over an infinite time period 't' thus:

$$V = \frac{D(1+9)}{r-g} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

For the formula to give a solution, the discount rate must be greater than the growth rate 9, otherwise the expression would give an negative answer. This would imply that the firm we are

evaluating would eventually control all industry and that investors would be prepared to pay an infinite amount for their shares. All that the model requires is a growth rate assumption and a discount rate. The growth rate may be estimated from past growth rate of dividend and earnings.

(2) Market Yields and Multipliers

This model involves evaluating a market yield which is appropriate to the security. This yield is derived from growth rate forecasts and from risk assumptions. The yield is then applied to current (or forecasted) earnings or dividends to obtain the estimated intrinsic value.

The two main statistics used are the dividend yield and the Price Earnings(P/E) ratio multiplier, the latter has been the most popular over the recent past.

$$\text{Dividend} = \frac{\text{Dividend per share}}{\text{Share price}} \quad \ldots\ldots\ldots (4)$$

The price - Earnings ratio is given by the expression

$$\text{PER} = \frac{\text{share price}}{\text{EPS}} \quad \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

Where PER = Price Earning Ratio

EPS = Earnings per share

The major difficulty for the analyst is to derive an appropriate price/Earnings ratio (or dividend Yield). In practice, the assessment of an appropriate PER is a subjective one based on an analyst's descriptive evaluation of various fundamental factors. The factors considered, however, typically include the past performance and future projections of earnings and dividend, historical share price and PER performance and their volatility, Managerial ability and yields from alternative forms of investment.

These models have been described as inappropriate by Wippern (1966) when he states that 'These measure employing the sum of dividend or earning yield and growth rates are, in many cases, heavily weighted by the growth factor, and the influence of relative investor appraisal, as revealed only in the yield component of this measure is significantly dampened and may escape detection". As he further observed, the most satisfactory indicator of relative investor response to financial structure is the earnings yield.

(3) Multiple Regression Model

This is a modeling approach where share prices are expressed as some function of various independent variables. These variables are usually those involving various fundamental factors

such as dividend, earnings and risk. The analyst identified the factors (known as independent variables) which influence the share price and then ascertain the relationship between the factors and the share price.

Typical influencing factors which are incorporated in regression models include historical earnings and dividend rates, forecast of future earnings and dividend growth rates, the past variability of earning and dividend rates and a measure of risk, perhaps, the past variability of the share price. The analyst will of course use his judgement in deciding whether any other variables could be included for example, in building models for explaining and predicting property share price, the analyst could include a variable relating to the rate of increase in the asset value per share. Other variables might include variability of earnings and dividends, size and qualitative factors such as Managerial ability. If the inclusion of the variable improves the predictive ability of the model then it should be incorporated. The analyst will also have to decide what variable to forecast (known as the dependent variable). This will normally be the dividend or earning yield or the price/Earnings ratio.

The model is quantified by regression analysis, which gives the weightings for the individual factors. The regression also gives various statistics telling the analyst of the reliability that can be placed on the individual factors and on the equation as a whole. Once a satisfactory model has been derived, the analyst will now try to see if he can use the model to predict share prices with a reasonable degree of accuracy, for example

$$PER = a + bZ + cY + dX + E \quad \ldots\ldots\ldots\ldots\ldots\ldots (6)$$

that is PER of the share is a function of Z,Y,X, while letters a,b,c, and d are known as the regression coefficient and these represent the weightings of the individual factors. The coefficient 'a' is a constant term, the 'E' term is the error term, that is variation in PER which has not been explained by the model.

However, the multiple regression model is based on certain simplified assumptions. These were described by Makridakis and Wheel Wright (1989), which include:

(i) That a linear relationship exists between dependant and each of the independent variables. This assumption states that the dependent variable is linearly related to each of the independent variables (Technically the assumption of linearity refers to linearity in the co-efficients).

(ii) The second basic assumption in regression analysis that of constant variance of the regression errors. This is often referred to by the technical name homoscedasticity. The assumption states that the forecast errors must be constant over the entire range of observations.

(iii) That the residual values are random or independent of one another: This means that each residual value is independent of the values coming before and after it. In technical terms when this assumption is not met, it is said that serial correlation (or auto-correlation) exists among successive residual values and to eliminate this an independent variable, may be added to capture some of the variation in the independent variables, alternatively a transformation of a existing variable can be devised that will eliminate autocorrelation.

(iv) The residual values if plotted should be approximately normally distributed.

The multiple regression model appears to be the most widely use. Many researchers such as Miller and Modigliani (1966), Wippern (1966), Rao and Litzenberger (1971), Sama and Rao (1969) and others have employed this model.

(4) Gordon's Model

This incorporated six variables, being dividends per share, expected growth in dividends, a measure of earnings stability, a measure of the firm's capital gearing or leverage, an index of operating asset liquidity and a measure of the firm's size.

This model can be presented in logarithmic forms, thus:

$$\ln p = \ln \frac{1}{\alpha_0} + \alpha_1 \ln D + \alpha_2 \ln(1+br) - \alpha_3 \ln(1+\frac{\delta}{w}) \ldots\ldots\ldots (7)$$
$$- \alpha_4 \ln(1+h) - \alpha_5 \ln \Pi - \alpha_6 \ln U \; \alpha_7 \ln S$$

where P = price, the dependent variable

D = Dividend

br = Growth rate is expected rate of growth in the dividends is the product of b, the retention rate and r_1 the rate of return on investment.

δ/w = Earnings instability index

S = Size

h = L/W i.e. Debt/equity ratio

Π = operating asset liquidity

U = dummy variable

i = interest rate

k = investment

According to Gordon the M & M theorem on leverage suggests that (1 + h)-ih/k be sbsituted for 1 + h as the leverage variables in the model. Two tests were conducted by Gordon

(1962), two samples were employed, one consisting of 48 food and other of 48 machinery corporations and for each sample parameter estimates were obtained for each of the years 1954-'58. In the first model tested, the two major variables, included to account for the influence on price of differences in risk among corporation are earnings instability, leverage, corporate size and asset liquidity. The second model tested differs from the first in that the sample leverage variable is replaced by the variable suggested by the M & M theory.

Gordon's model was criticized by Lerner and Carleton (1964) when they stated that "the major difficulty of Gordon's model is that it generate unacceptable results when it is used as the sole determinant of the retention (hence, payout) rate which maximizes the value of the common stock". Despite their criticism, Gordon's model is still commonly used especially for analysis of the series of factors involved as described, using multiple regression. One can conclude that Gordon's model in this sense as Gordon's fashion of the multiple regression analysis.

(5) Beninshay's Model

This included an earnings growth rate, a growth rate in share price, a payout ratio, variability of earning, variability of share price, market capitalization and a debt-equity ratio in the

model. Beninshay (1961) tested the model by running cross-sectional linear regressions in which logarithmic values were used for Y, X3, X4, X5, and X6, and actual values for the other variables, as follows:

$$LogY = x1, + x2 + \log X3 + \log X4 + \log X5 + \log X6 + X7 \quad \ldots\ldots (8)$$

where Y = Dependent variable, the measured rate of return

X1 = Growth in earnings

X2 = Growth in equity value

X3 = the payout ratio, Dividends/Earnings $\frac{(DPS)}{EPS}$

X4 = stability of Income

X5 = Stability of equity value

X6 = size (ie measure both liquidity and size)

X7 = Debt/Equity ratio.

(6) Lerner and Carleton's model

The independent variables in this model are investor and corporate expectation of the pay-out ratio, rate of return, asset figure, risk free interest rate, the income-tax rate, the debt-equity ratio and a risk measurement.

The formula as stated by Osaze (1991) is as follows:-

$$P = \frac{(1-b)\ r\ LA}{K-\frac{a+b}{(1-z)}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

where P = intrinsic worth of the share

b = retention rate

rl = leveraged return on assets

A = Assets per share

Z = Ratio of liabilities to assets

K = capitalization rate

Lerner and Carleton (1964) identified the limitation of their model when they stated that "while useful insights are obtained from this model, its usefulness is limited. The principal kinds of questions that can be answered within the model's framework are of the sort; given a P and a Z, what is the b which will just maintain the present P?"

3.4 Selected Data Analysis Technique And it's Justification

The selected data analysis technique from the options available as described above is multiple regression analysis. The multiple regression includes variables for Leverage, growth, payout size, forecasted earnings, which will be discussed later.

The reasons for the selection of the multiple regression are as follows:

(1) It is advantageous using multiple regression in that a number of different relationship can be hypothesized and tested

with little effort when a computer program is available. The research study is evaluating the effect of capital structure on the value of firm and there are various factors that affect market value apart from the capital structure. It enables the relationship between each factor and market value to be determined including the effect of the capital structure and where there are more than one factor to be considered some of the other alternative model will prove inappropriate.

(2) The multiple regression model permit the forecast of future earnings and according to Firth (1977) the only regression models which have reported successful prediction of shares price are those which incorporate forecasts of future earnings, dividends and their growth rate. It follows therefore that multiple regression seems to be the most appropriate for predicting future earnings as employed by Miller and Modigliani (1966).

Least squares version of the multiple regression is adopted because it gives the best unbiased estimate of the expected values of the dependent variable associated with various stated values of independent variables.

3.4 Chapter Summary

This chapter discussed the procedure for conducting the research. The research design takes the form of a historical and survey technique for the practical issues on capital structure. The sampling design is obtained from quoted companies in Nigeria with Debenture stocks, loan stocks and long-term loan in their capital structure at the beginning of 1990 financial year and 1989/90 for firms operating accounting year which fall between January and December, the beginning of our study period and those issued during 1990 and 1989/90 financial year, this is exclusively restricted to firms quoted in the first-tier securities market.

The data collected came from two major source namely, field data from financial statements and annual reports (historical data) and survey data from personal interviews. While the data analysis technique selected is the least-square Version of the multiple regression analysis.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 CAPITAL STRUCTURE AND VALUATION OF SELECTED FIRMS

This section is aimed at presenting and analyzing the data collected in order to evaluate the effect the capital structure has on the value of firm, using the selected firms.

4.1.1 Conceptual Problems Encountered in Empirical Studies of Leverage

In an attempt to measure empirically the effect of leverage specifically on the value of a firm, there are some problems encountered, some of which have almost defied objective solution because of their complexity. Some of these problems as revealed by this research and other research studies are:-

(i) Gathering of reliable and pertinent data: Research of this nature requires a reliable and pertinent data. But in Nigeria data are hardly available and where available sometimes are inaccessible. One will discover that quotations are hard to acquire and hardly available for some stocks and shares and often erratic or nominal particularly quotations for corporate bonds, most of which are rather inactively traded in the stock market.

It is observed that even the data for this kind of analysis in advanced countries such as U.S.A. are hard to come across.

The data are difficult to collect and the one available is the data collected from the published financial statements of the companies, the reliability of which is sometimes questionable as far as Nigeria is concerned. This is because of the problem of 'window dressing' of account which may not actually reflect the true position of the firm, all attempts to get a more reliable data from the firms proved abortive. This has been one of the major problem encountered in the measurement.

(ii) Problem of errors in measurement of Expected Earnings:-

In the analysis, one of the requirements is ability to have a correct and reliable estimate of the expected earnings. The expected earnings of the firm is the market expectation of the long run future tax adjusted earning power of the assets currently held by the firm. Since it is an expectation, it is not directly observable or measurable and the best that can normally be done is somehow to approximate it from the firm's published financial statement. As depicted in the first problem, the problem here is more complex since expected earnings is future oriented. The future in Nigeria is difficult to predict because of various non-quantitative factors that affect it, these include political instability, economic and social instability (strikes, national calamities, government policies etc.), all

these with other factors affect the future and make futuristic prediction a difficult task. As observed during the political conflict in the early 90's business activities were distorted, business failure was rampant and other menace of the conflict.

The problem of estimating expected earnings is not restricted to less developed economies such as Nigeria but also in advance economies as U.S.A. Infact Modigliani and Miller (1958 and 1966) in their research counted this problem as one of the difficulties faced in their study even in the world of computer technology. With the introduction of computer technology this problem remains unresolved because computers can only be used to predict the future based on past data but other non-quantitative data such as environmental disturbance, effect of future government policies and other vital factors cannot be predicted by computer.

In order to, at least, reduce the burden of this problem in this research, the year 1993 was excluded from the analysis because of the distortion in corporate performance which resulted from political instability.

(iii) The difficulty of assembling a sample of corporations capable of supporting a comparative or cross-section type of analysis:- The third problem present in this type of study is that of separating business and financial risk. An empirical

determination of the effect of capital structure on the value of firm requires that the capitalization rates of firms of homogenous risk and differing financial risk or leverage be compared. It has been assumed, in past investigations that homogeneity of business risk could be achieved by comparing firms in the same industrial classification. Firms that are even broadly similar with regards to cost structure, demand characteristics and competitive position are, however, extremely difficult to find and the identity of industry classification among firms does not ensure homogeneity of basic business risk, this observation was also made by Wippern (1966).

The problem in essence, is the difficulty in assembling any sample meeting the rigid requirements of the MM's equivalent class. The real difficulty is to find samples that are reasonably homogenous in most respects and yet show enough variation in growth rate, capital structure and other variable; to bring out the influence of these factors. One can often find two or three and sometimes more corporations with characteristics sufficiently uniform to bear comparative analysis, but if one restricts his samples in order to keep them homogenous, one has to keep them small and if one attempts to expand them to the

point where they are numerically satisfactory, there is a price in lost homogeneity.

In order to overcome to some extent the afore mentioned problems the first group selected were from conglomerates and two drink companies whose size, characteristics and activities meet up to the conglomerates and the second group includes companies dealing with building materials as to aid comparism at the end of the analysis. It is believed that the activities of the conglomerates are diversified enough to permit a desired level of homogeneity.

(iv) The leverage measure: One of the empirical problems encountered in measuring the leverage effect on the value of a firm is that of defining an unbiased measure of leverage. Leverage has been defined in previous studies as either the ratio of debt to equity at book values or at market values. A choice of book values as a measure of financial risk implies that the relationship between debt and book value of equity is the one which is most relevant in determining lenders and investors' claims to the earning's stream of the firm. The choice of market values overcomes the problem associated with the choice of book value.

4.1.2 REGRESSION MODEL

We have taken a sample of 12 quoted firms for two groups and run the regression equation for four cross-section years, 1990, 1991, 1992 and 1994. This period of coverage is free of any major economic disturbance. The regression model employed is the two stage least squares (2SLS) techniques for arriving at the true expected future earnings.

The regression model employed for testing the effect of capital structure on the value of a firm is as stated below:-

$$\frac{V}{F} = \frac{a_1 X^T - T^R}{F} + a_2 \frac{1}{F} + a_3 \frac{\Delta X^T - T^R}{F} + a_4 \frac{D}{F} + U \quad \ldots\ldots\ldots 1$$

where V is the value of the firm

$X^T - T^R$

is the expected tax-adjusted earnings

$X^T - T^R$

is the growth rate of tax-adjusted earnings,

calculated as a linear 5-year average growth rate of tax-adjusted earnings times current tax-adjusted earnings.

D - is debt

F - is fixed assets used as a defiator to reduce heteroscedasticity.

a1, a2, a3, a4, - are instrumental variables

U - is a random disturbance term

The following formula was employed to determine the computed earnings for the second-stage estimates:

$$\frac{X^T - \overline{T^R}}{F} = a_0 + \frac{a_1 1}{F} + \frac{a_2 \overline{\Delta X^T - T^R}}{F} + a_3\frac{D}{F} + a_4\frac{DIV}{F} + U \quad \ldots\ldots(2)$$

where ΔF is the growth rate of fixed assets, calculated as a linear 5-year average growth rate of fixed assets multiplied by current fixed assets.

DIV - is total dividends paid on equity shares and the other variables are the same as explained previously.

a0 - constant term

$$\frac{V}{F} = a_0 + \frac{a_1 X^T - T^R}{F} + \frac{a_2 1}{F} + a_3\frac{\Delta X^T - T^R}{F} + a_4\frac{D}{F} + U \quad \ldots\ldots\ldots 3$$

Equation three is similar to that employed by Miller and Modigliani to test the effect of capital structure on value so as to provide the basis of justification for including the debt variable among the independent variables.

4.1.3 REGRESSION RESULT AND THEIR INTERPRETATION

The regression was carried out using two sets of data, the conglomerate and drink group and the Building Materials group, the results and interpretation follow suit.

GROUP 1 CONGLOMERATES AND DRINKS

TABLE 1: FIRST STAGE LEAST-SQUARES REGRESSIONS OF EARNINGS ON THE INSTRUMENTAL VARIABLES

Dependent variabes $\frac{X^T - T^K}{F}$

Coefficient of

Year	Constant	Size 1/F	Growth ΔF/F	Debt D/F / F	Dividend DIV/F	Standard Error	Mult.R
1990	0.2301	0.098	-0.032	-0.048		0.083	0.74
	(0.120)	(0.1805)	(0.063	(0.167)	-		
1991	0.245	0.329	-0.036	-0.011		0.057	0.99
	(0.072)	(0.090)	(0.040)	(0.046)	-		
1992	0.134	1.013	0.036	-0.090		0.072	0.99
	(0.104)	(0.198)	(0.055)	(0.086)	-		
1994	0.440	2.329	-0.115	-0.255		0.194	0.99
	(0.174)	(0.956)	(0.114)	(0.192)	-		
1990	0.196	-0.057	-0.074	-0.031	1.273	0.0273	0.98
	(0.040)	(0.066)	(0.022)	(0.055)	(0.249)		
1991	0.250	0.372	-0.029	-0.014	-0.251	0.069	0.99
	(0.091)	(0.246)	(0.061)	(0.058)	(1.278)		
1992	-0.029	0.196	-0.003	0.099	2.239	0.051	0.99
	(0.111)	(0.436)	(0.044)	(0.114)	(1.131)		
1994	0.073	0.853	-0.001	-0.008	1.558	0.052	0.99
	(0.075)	(0.348)	(0.036)	(0.065)	(0.248)		

Source: Financial statements of selected firms.

Note: Figures in parentheses in each table are standard errors of the coefficients.

Table 1 shows the first stage regressions of reported earnings on the Instrumental variables. To help in interpretation, the result are presented with and without dividends which are included among the set of instrumental variables. As can be seen from the first pannel, fixed assets appear to convey considerable information about earnings in this group as depicted in their coefficients. Given fixed assets little additional information seems to be provided by the other variables as evidence by the low values of the multiple correlation coefficient.

The group of regressions in the second pannel, will serve as the basis for the computed earnings variable in most of the subsequent second-stage regressions which involve the full set of instrumental variables including dividends. As expected, the dividend variable makes a very substantial contribution in all the four years. This is expected in the presence of unutilized capacity. Whenever earnings do not grow in proportion to fixed assets, earnings per unit of fixed assets decline with the growth in fixed assets. The dependant variable, XT - TR, when deflated by fixed assets denotes the ratio of earnings to fixed assets.

VALUE AND CAPITAL STRUCTURE

M & M restricted the coefficients of the debt variable to the corporation income tax rate T' and accounted for the influence of debt on value by deducting TD from V. M & M argued that since the tax advantage of leverage is accounted for by incorporating it into the dependant variable, introduction of debt variable into the set of independent variables of second-stage regression, leads to a coefficient not far from zero. On the other hand the results, as presented in Table 2 below, show that the coefficient of debt variable is significantly different from zero.

Table 2 presents the results of an equation similar to that used by M & M to test for the effect of capital structure on value. This equation is

$$\frac{V-T^D}{F} = a_1\frac{\overline{X^T - T^R}}{F} + a_2\frac{1}{F} + a_3\frac{\Delta X^T - \overline{T^K}}{F} + a_4\frac{D}{F} + U \quad \ldots\ldots\ldots (4)$$

Estimates of this equation are given in Table 2 below, with computed earnings and constant term constrained to zero.

TABLE 2: SECOND STAGE ESTIMATES WITH COMPUTED EARNINGS

Coefficient of

Year	Computed Earnings $\frac{XT-TR}{F}$	Size 1/F	Growth $\frac{\Delta XT-TR}{F}$	Debt D/F	Standard Error	Mult. R
1990	0.464	0.590	2.224	1.282	0.416	0.99
	(2.534)	(0.717)	(1.630)	(0.696)		
1991	5.841	-0.075	-0.285	0.312	0.483	0.99
	(2.240)	1.097)	1.056)	(0.524)		
1992	5.438	-3.160	0.824	0.461	0.602	0.99
	(2.542)	(1.926)	(0.467)	(0.769)		
1994	4.911	-14.880	0.676	1.007	0.599	0.98
	(2.301)	(5.258)	(0.580)	(0.646)		

Source: Financial statements of selected firms.

The results in table 2 show that debt has much more than tax advantage, this is depicted as the debt variable has a value which is more than zero as expected using modified form of M & M's approach.

Since the results, as presented in table 2 above, show that the coefficient of debt variable is much more than the corporation income tax rate (T), we prefer to introduce a debt variable along with the independent variables. (The tax rates

are 40% for the years 1990-92 and 35% for 1994). The equation used to test for the capital structure effects is:-

$$\frac{V}{F} = \frac{a_1 X^T - T^R}{F} + a_2 \frac{1}{F} + a_3 \frac{\Delta X^T - T^R}{F} + a_4 \frac{D}{F} + U$$

Estimates of this equation with measured earnings and computed earnings are reported in the first and second panels, respectively, of table 3.

TABLE 3: VALUE AND CAPITAL STRUCTURE

Coefficients of

Year	Earnings $\frac{X^T-T^R}{F}$	Size 1/F	Growth $\frac{\Delta X^T-T^R}{F}$	Debt D/F	Standard Error	Mult. R
	A: Direct least squares Estimates					
1990	0.377	0.580	2.256	1.700	0.417	0.99
	(3.709)	(0.715)	(1.762)	(0.701)		
1991	5.615	0.174	-0.456	0.7000	0.657	0.99
	(3.716)	(0.642)	(1.809)	(0.819)		
1992	6.905	-3.022	0.461	0.459	0.570	0.98
	(2.965)	(1.799)	(0.559)	(0.860)		
1994	5.870	-11.851	0.354	1.166	0.445	0.99
	(1.766)	(3.906)	(0.445)	(0.486)		
	B: Two stage Estimates					
1990	0.464	0.590	2.224	1.682	0.417	0.99
	(2.534)	(0.717)	(1.630)	(0.696)		
1991	5.841	-0.076	-0.285	0.712	0.483	0.99
	(2.240)	(1.097)	(1.056)	(0.524)		
1992	6.9050	-3.022	0.461	0.459	0.57	0.98
	(2.965)	(1.799)	(0.559)	(0.860)		
1994	5.870	-11.851	0.354	1.166	0.445	0.99
	(1.766)	(3.908)	(0.445)	(0.485)		

Source: Financial statements of selected firms.

The results for 1992 and 1994 for both measured earnings and computed earnings are consistent. The second panel of table 3 shows clearly that the coefficient of debt variable is

significantly greater than the corporation income tax rate in each of the years except in 1992 which is slightly over. It follows the value of a firm rises up to a capital structure considered prudent by the Management. The signs of the size variable except for 1990 is according to expectation.

GROUP 2 BUILDING MATERIALS

TABLE 4 FIRST STAGE LEAST-SQUARES REGRESSIONS OF EARNINGS ON THE INSTRUMENTAL VARIABLES

Dependent Variable = $\frac{X^T - T^R}{F}$

	Coefficient of						
Year	Constant	Size 1/F	Growth $\frac{\Delta F}{F}$	Debt D/F	Dividend Div/F	Standard Error	Mult. R
1990	0.073	0.084	-0.361	0.722	-	0.011	0.99
	(0.019)	0.004)	(0.010)	(0.024			
1991	0.240	0.242	-0.243	0.873	-	0.514	0.99
	(0.979)	0.840)	(0.295)	2.670)			
1992	0.712	0.345	-0.055	-0.468	-	0.467	0.98
	(0.450)	0.586)	(0.305)	1.206)			
1994	1.717	4.552	0.4370	9.280	-	0.147	0.97
	(0.478)	6.743)	(0.467)	1.414)			
1990	0.0683	0.075	-0.321	0.625	0.379	0	1
	(0)	(0)	(0)	(0)	(0)		
1991	0.106	0.008	-0.033	-0.124	2.841	0	1
	(0)	(0)	(0)	(0)	(0)		
1992	0.116	0.085	0.011	0.167	3.059	0	1
	(0)	(0)	(0)	(0)	(0)		
1994	0.923	3.140	0.700	-6.678	1.465	0	1
	(0)	(0)	(0)	(0)	(0)		

Source: Financial statements of selected firms.

Table 4 shows the first stage regressions of reported earnings on the instrumental (independent) variables and was presented with or without dividend to help in the interpretation. As can be seen from the first panel unlike in group 1 both fixed assets and debt convey considerable information about earnings in this group (industry).

From panel two, it can be seen that the dividend variable is high except for 1990, showing that it makes a significant contribution to the earnings. There is a considerable reduction in the constant term for the four years and also substantial reduction in the variables for size, growth and debt, which implies that a substantial contribution to the earnings came from dividend. In this group dividend has a strong relationship with the earnings for the four years. Another observation, is that the standard errors are zero for the four years and for all the coefficients, this is because residual variance is zero, that is the computed or normal earnings and measured earnings are the same. In any work where the estimated or computed earnings are equal to the measured earnings, there is no deviation hence the standard errors become zero.

This result has to be diligently compared with the outcome of the research work conducted by Miller and Modigliani (1966) and

those of Sarma and Rao (1969) and then it was found out that the standard errors for the first, stage least squares regressions of earnings on the instrumental variables were not significantly different from zero. The implication of this on the work is that the outcome of the second-stage estimates using the measured earnings and computed earnings is the same. This will not significantly affect the debt variable.

VALUE AND CAPITAL STRUCTURE

TABLE 5. SECOND-STAGE ESTIMATES WITH COMPUTED EARNINGS

Dependent Variable: $V-T^{D}/F$

Coefficient of

Year	Computed $\frac{XT-TR}{F}$	Size	Growth $\frac{\Delta XT-TR}{F}$	Debt D/F	Standard Error	Mult. R
1990	0.209	0.290	2.353	0.134	0.136	0.99
	(1.114)	(0.138)	(0.874)	(0.328)		
1991	2.789	-0.491	0.152	1.993	0.508	0.99
	(0.840)	(0.605)	(0.501)	(1.477)		
1992	5.744	-0.968	-0.196	1.358	0.086	0.98
1994	6.813	-0.624	-2.079	2.639	0.895	0.97
	(1.703)	(1.851)	(0.701)	(3.438)		

Source: Financial statements of selected firms.

Table 5 presents the results of an equation similar to that used by M & M to test for the effect of capital structure on value. This equation is

$$\frac{V-T^D}{F} = a_1\frac{\bar{X}^T - \bar{T}^R}{F} + a_2\frac{1}{F} + a_3\frac{\Delta\bar{X}^T - \bar{T}^R}{F} + a_4\frac{D}{F} + U$$

The estimate of the above equation are given in table 5 with computed earnings and constant term constrained to zero.

M & M argued that since the tax advantage of leverage is accounted for by incorporating it into the debt variable, the introduction of debt variable into the set of independent variables of the second-stage regression, leads to a coefficient not far from zero. However, as shown in Table 5, the coefficient of debt variable is significantly different from zero for all the four years. This implies that debt has much more than tax advantage than described by Miller and Modigliani (1966).

The constant term were constrained to be zero as described and prescribed by Miller and Modigiliani (1966). The signs of the size variable is consistent according to the expectation. The standard errors for the computed earnings are similar to those of Miller and Modigliani (1966), while those of the independent variable are similar to those obtained from the work of Sarma and Rao (1969).

TABLE 6: VALUE AND CAPITAL STRUCTURE

Dependent Variable: $\frac{V}{F}$

	Coefficient of					
Year	Earnings $\frac{X^T-T^R}{F}$	Size 1/F	Growth $\frac{\Delta X^T-T^R}{F}$	Debt D/F	Standard Error	Mult. R
	A: Direct Least-Square Estimates					
1990	0.209	0.290	2.353	0.534	0.136	0.99
	(1.115)	(0.138)	(0.874)	(0.328)		
1991	2.789	-0.491	0.152	2.393	0.508	0.99
	(0.861)	(0.605)	(0.501)	(1.478)		
1992	5.744	-0.968	-0.196	1.768	0.086	0.98
	(0.169)	(0.062)	(0.083)	(0.083)		
1994	6.849	-0.631	-2.091	3.029	0.889	0.97
	(1.692)	(1.839)	(0.696)	(3.418)		
	B: Two - Stage Estimates					
1990	0.209	0.290	2.353	0.534	0.136	0.99
	(1.115)	(0.138)	(0.874)	(0.328)		
1991	2.789	-0.4913	0.152	2.393	0.508	0.99
	(0.861)	(0.605)	(0.501)	(1.478)		
1992	5.744	-0.968	-0.196	1.768	0.086	0.99
	(0.169)	(0.063)	(0.083)	(0.083)		
1994	6.849	-0.631	-2.091	3.029	0.889	0.98
	(1.692)	(1.839)	(0.696)	(2.417)		

Source: Financial statements of selected firms.

Since the results as presented in Table 5 above, show that the coefficient of debt variable is much more than the

corporation tax rate T', debt variable was introduced along with the independent variables. The out come of the regressions are presented in the first and second panels of table 6, showing the measured earnings and computed earnings respectively.

The reason for the consistency in the coefficient of all the independent variables of the measured earnings and that of the computed earnings is because of the equality that existed between the computed earnings and measured earnings in this group. The signs of the size variable except for 1990 for second panel is according to expectation. The debt variable in the second panel is higher than the corporation tax rate for the four years, this shows that the advantage from debt is much more than the tax advantage and hence the value of a firm rises up to a leverage rate considered prudent.

From the first and second group, it can be established that the coefficient of debt variable is significantly higher than the corporation income tax rate in each of the four years and thus, one thing that might be considered is the reliability of the result as discussed above, this is by determining the coefficient of determination.

The coefficient of determination is the proportion of the total variance that is explained by the regression and this is

denoted by R and from the table the R variable is almost 1, implying that R is above 90% (0.9) for all the regression except for 1990 for table 1. It is expected that R value should be high when using time series data, where both dependent and independent variables may reflect certain underlying time trends. When using cross-section data by contrast R values tend to be low because of both the great variability that is possible across the individual entities and lack of a common underlying trend.

According to Intriligator M. D. (1978) an R of 0.5 or higher may be acceptable with cross section data, while a value

of 0.9 or higher is usually expected with time series data. The data in this research study is time series study from 1990 - 1994 (excluding, 1993) thus according to Intriligator, a coefficient of determination R of 0.9 or higher is acceptable. From the result presented in the tables in section 4.1.3 by computing R the coefficient of determination will be higher than the prescribed Minimum of 0.9. The implication of this 0.9 is that 90% of the dependent variable is explained by the independent variable.

4.2 PRACTICAL ISSUES ON CAPITAL STRUCTURE

This section is aimed at presenting the results of the interview conducted during this study. As discussed earlier, stock-brokers, management consultants and financial Managers were interviewed to know some practical issues in the choice of capital

structure, the effect of the choice on the existing market values, reasons for issuing debenture/loan stocks and the factors that are taken into consideration in the choice of capital structure.

In Nigeria, there are basically three sources of long-term fund available for fund raising. These include: Ordinary share capital, Preference share capital and Debenture stocks and loan stocks From the Nigeria Stock Exchange Annual Report (1990-94) it is reliably gathered that in new issues ordinary shares capital takes the lead, followed by Debenture and loan stocks while pre-ference shares are issued by only few firms. From those inter-viewed it was gathered that the reasons for such occurrence are:

(i) It is compulsory for all companies in Nigeria (either quoted or unquoted) to have ordinary shares capital in their capital structure while others are not compulsory that is preference shares and Debenture/Loan stocks are not compulsory).

(ii) The possibility of raising Debenture stocks for some companies is hard because of the compulsory interest rates and the desire for collateral security by Debenture holders which may not be available.

(iii) The fear of bankruptcy and eventual liquidation is another problem and the fact that Debenture stocks and

preference shares are fixed income which may sometimes not be attractive to investors. Instead small and medium scale firms prefer to go for overdrafts and short term loans where arrangement for rescheduling of payment of the capital to the banks can be made which is not possible in case of Debenture stock and preference shares.

As described in the Nigerian Stock Exchange Annual Report for 1989-1994. The Debenture in issue is the floating rate debenture/loan stock whereby a minimum and maximum rate is set and the coupon rate is allowed to float within this range expressed as a certain percentage over and above CBN Minimum Rediscount Rate. According to the Nigeria Stock Exchange Annual Reports (1990-94) attached as appendix, the following classification of Debentures/loan stocks were made:-

1. Redeemable Debenture Stock (RDS)
2. 1st Mortgage Debenture Stock (1mds)
3. 2nd Mortgage Debenture (2mds)
4. Secured Debenture Stock (SDS)
5. Unsecured Debenture Stock (USDS)
6. Redeemable Mortgage Debenture Stock (RMDS)
7. Secured Redeemable Debenture Stock (SRDS)

8. Convertible Redeemable Unsecured Loan (CRDS)
9. Convertible Redeemable Secured Debenture Stock (CRSDS)
10. Convertible Redeemable Unsecured Debenture Stock (CRUDS)
11. 'A' Debenture (AD)
12. 'B' Debenture (BD)
13. 'C' Stock (CD)
14. Loan Stock (LS)
15. Secured Loan Stock (SLS)
16. Unsecured Loan Stock (USLS)

According to those interviewed, the factors considered in making a choice of capital structure include:-

i) The present capital structure: Before a firm will delve into raising fund through a particular sources they have to consider the present capital structure. It has to be considered whether the firm is currently highly geared or not, if highly geared the option available is ordinary shares, if not highly geared, debt instruments can still be issued.

ii) Economic environment forecast: After knowing the present capital structure, a forecast of the economic environment has to be made, a forecast of sales, demand pattern, cost of production, profitability and other important matters such as

inflation because the higher the inflation rate expected the higher the interest rate expected by debenture stock holders.

iii) Type of project; the type of project has to be considered so that matching of fund with project will be strictly adhered to in order to avoid illiquidity and insolvency. This policy was adopted by Afri Bank Plc recently when it financed its Head Office Building in Lagos with issues of new additional ordinary shares.

iv) Control: The Director, before embarking on raising fund through any means ought to consider the shareholders control interest. In practice, according to the interview and report available from Nigerian Securities and Exchange Commission (1990-1994), there are considerable increase in issue of ordinary shares by right to maintain existing control and avoid dilution.

v) Cost of capital: In practice, the various cost of capital with the issuing costs are considered. The CBN Marginal Rediscount Rate has become an important rate to be considered as regard issue of debenture above which the floating rates are fixed. If the rates is too low it may be unattractive to prospective investors. This was the case in

1995 as reported by the Securities and Exchange Commission; no single issue of Debenture and Loan Stock was made because of the low interest rate. Other relevant factors such as the size of the companies, the risk, the expected cash flows and others are normally considered.

In practice there is no single formula for determining the optimum capital structure but according to those interviewed firms make a choice of capital structure with the aim of not exceeding certain Debt level which presupposes the existence of optimum capital structure. However, in establishing this, all debts are taken into consideration (both long term debt and short term debt instruments such as short-term loans, commercial papers and acceptances and overdraft). The optimum varies from industry to industry and company to company within the same industry depending on the nature of the business, some favour much debt by their nature while others require little.

It was reliably gathered that when a fresh issue of Debenture/Loan Stock, preference shares or ordinary shares is made the price movement in stock market is suspended by the Stock Exchange. This is to protect the investing public. In practice, either the shares or stocks are 'over' or 'under' subscribed, the

price remains constant because of the price movement suspension and because of the availability of underwriting facilities.

Debenture issue does not have immediate effect on the share price but in the long run it has. If the profit after the issue does not improve earnings and dividend but fall, this may result in reduction of dividend and earnings per share the demand for the shares will fall and subsequently the market price will fall. On the other hand if the issue lead to increase in profit resulting in increase in earnings per share and dividend, the demand for the shares will increase leading to increase in share price.

In practice, it is very difficult to isolate the changes in share price attributable to capital structure alone. It is very difficult to distinguish between the effect of capital structure and the effect the price of a company's share may be indirectly caused by Management for example some few years ago there was management problem in Savannah Bank Plc as to the choice of Directors, this led to poor performance and low share price in the stock market.

4.3 SUMMARY OF FINDINGS

The Sarma and Rao (1969) version of the two-stage lest squares techniques was adopted as a method of arriving at the true expected future earnings and also for testing for capital

structure effect on the market value of a firm. The following findings were made.

From the first stage regression of reported earnings on the instrumental variables as reported in Table 1 and Table 4 shows that dividend as a variable makes a considerable contribution to the earnings. And thus it can be used as a good estimate of earnings. By implication there is a direct relationship between earnings and dividends. An increase in dividend according to the research can be a true indication of increase in earnings. It must be quickly observed that the effect of dividend policy on the market value is beyond the scope of this study and thus, no attempt was made to prove the effect of dividend policy on the market values of shares as proved by Miller and Modigliani (1966) in their research work.

It was discovered from the second group that the standard errors were zero for table 4. Implying that a perfect relationship exists between the dependent variable and the independent variables. This is as a result of the equality of the measured earnings and computed earnings, giving room to the coefficient of determination to be equal to 1. However, according to the statistician the fact that there is a perfect correlation

between dependent and independent variables does not necessarily imply that the computed earnings is at its beat.

The results of table 2 and 5, show a value greater than zero and according to Modigliani and Miller (1966) the coefficients of the debt variable should not be far from zero. From this it can be concluded that the advantage of leverage is higher than the tax advantage.

The results of Tables 3 and 6, show the coefficient of debt variable for the four years higher than the corporation Income Tax rate (1990 - 92 - 40% and 1994 - 35%), and since the debt variable is higher than the tax advantage, debt variable was introduced into the dependent variable. Thus, the result of table 3 and 6 show that debt has much more than tax advantage. In view of some econometric problems which arise because of the non-fulfillment of some underlying assumptions of least squares estimation in regulated industry, estimation procedures require application to non regulated industry. Based on a particular set of Nigerian data, for which M & M's valuation equation is considered more appropriate, the study presented another piece of evidence in support of the traditional view on leverage. This appears to provide an answer to the research question asked.

It is clear from the evidence that shareholder wealth increases with leverage through the ranges observed. It is also clear, supported by the views expressed during the interview, however, that the evidence should not be extended to conclude that there is no limit to these gains. Institutional lending restrictions, rising interest rates and possibly, inflation will impose limits on the gains from fixed commitment financing.

It was discovered that despite a lot of articles about the inappropriate pricing of shares in Nigerian stock Exchange, there is little or nothing done to improve the system and thus companies shares are underpriced and the implication of this are:-

i) It may induce the wealthy, well connected and influential investor to benefit at the expense of other' willing but unknown investors. They may be in a position to buy up (at low price) the small numbers of shares of 'blue clips' that get into the market to the exclusion of other willing but unknown investors. Also rich but unscrupulous investors may be able to get such scarce securities by offering to pay above the current market price for them. This may lead to corruption as investors may attempt to bribe some unscrupulous managers in the stock brokerage to obtain

certain shares, this will not be in the interest of the economy.

ii) The interest of the shareholders are not best served. The interest of all shareholders in a quoted company is best served when prices are determined by market forces. A situation whereby prices are determined at the whims and caprices of a handful of people cannot be in the interest of the shareholders and certainly not in the interest of the investors, quoted companies and even the stockbrokers.

iii) The guided deregulation is now breeding the illegal parallel stock market. The parallel market on the Stock Exchange is caused by demand of securities always outstripping their supply because of the performance of these companies in the market. The danger of the emergence of such illegal market is that shares traded in such a market would not have influenced positively those traded in the Nigerian Stock Exchange, thus this will not be in the interest of the ignorant shareholders who may be ignorant of the existence of such market.

iv) With the promulgation of Investment Council Decree, which now gives room for 100 percent participation of foreign investors in the NSE, it may not be in the interest of the

Nigerian economy to underprice the securities in the market. If the securities are underpriced, they will only be mopped up by foreigners loaded with hard-currency (e.g. American dollars, Pound Sterling) who will need to shed only a fraction of their money to acquire a large chunk of our cheap but first class securities. If they are armed with a large number of shares bought below true value, the foreign investors will be well placed to manipulate the NSE as they please. This is certainly not healthy for the Nigerian economy.

There are some factors that also affect company's performance which have direct effect on the pricing of the company share. Though 1993, was excluded from the sample years because of its political instability which eventually leads to economic instability, as reported by UTC Plc in their 1994 annual report, they experienced poor performance which they attributed to strikes and some event which lead to the closure of some of their shops. It follows that Nigerian companies are affected with multidimensional problems/factors which adversely affect their performance and consequently the share price, some of these factors are quantitative, while others are non quantitative, the quantitative factors has been tackled in this research work.

These non-quantitive factors can be supported by the event reported by Business Times on December 11, 1995 which state:-

> LASACO Assurance Plc board of directors has been given a six-month ultimatum to restructure the company towards profitability or face dissolution
>
> The deadline given by a shareholders at the company's 15th annual general meeting in Lagos last week was one of the key resolutions reached by the shareholders who questioned incidence of boardroom squabbles and administrative inepitude in the insurance firm.
>
> The shareholders decried the company's falling share price now selling at #1.30 as against #2.05 it opened with early in the year, and the profit after tax which also fell by₦ 9.77 million from₦ 13.29 million in 1993 to₦ 3.52 million in 1994.
>
> Mr. Smith, reacting to the shareholders questions blamed the falling share price on investor's liquidity problems and high inflationary trend, adding that the company's general performance was a reflection of economic downturn in the country.

There exist some inconsistency among companies as regards the preparation and publication of their annual account. Some firms give necessary details that will provide useful information for research work, while others hide some of the information. Some

useful information such as the short term loans and overdraft are treated as lumpsumed with other current liabilities while the rate of interest on debentures are excluded with other vital information. Sampled firms and others which were examined in the course of this study reflect this inconsistency.

4.4 LIMITATIONS OF THE STUDY

Despite the measures designed to control the impact of the problem encountered in research of this type, it still suffers from certain limitation.

i) The major limitation of the study is in the nature of data obtained. The data available is obtained from historical published account/financial statement of the respective firms selected. The usage of this data is questionable to some extent, this is because published account is susceptible to manipulation aimed to deceive so as to lead to disclosure of great earnings and dividend leading to increase in the price.

ii) Initially the aim of the research work was to restrict the debt variable to long term debt (that is focusing exclusively on long term debt, ignoring short term debt). As it turned out to be, short term sources (especially short term loans and overdrafts) proved to be highly variable, and in some cases, very large in relation to total liabilities. The

safest course seemed to be, to include short term debt in the debt variable. Errors that this approach may create are not likely to cause serious difficulties for present purposes of the effect of capital structure on the value of a firm.

iii) Another limitation is the limited number of the sample size which is a reflection of the few number of quoted companies in Nigeria. As at the end of 1994 accounting year, less than 200 firms were quoted. These are few as compared with advanced countries like U.S.A. and even less developed countries such as India. According to the research conducted by Sarma and Rao, (1969) 30 engineering companies were selected from the Indian engineering industry, in Nigeria only few engineering firms are quoted and in some of those few quoted firms, performances are poor and they are highly under priced, that selecting such firms might result in the failure of the research.

Initially, all the conglomerates were selected but when the regressions were run on the computer, the performance were far from economic reasoning this is because of poor performance of U.T.C. Plc, SCOA Plc and AG Leventis Plc. As a result of this, they were excluded and the regressions were

re-run before the result presented in section 4.1.3 were obtained and some of these firms have good performance even in the market. Yet, the result is not completely as it ought to be. Therefore the issue of homogeneity become a difficult problem to grapple with.

iv) Another limitation is that of poor pricing system in the Nigerian Stock Exchange. This has grossly affected the value of the respective companies. The interplay of demand and supply are not allowed to determine the prices of shares. In the stock market in 1992, deregulation which required that market forces determine security prices in the primary Market rather than security and Exchange Commission (SEC) was introduced. A further deregulation was made by SEC and NSE in the secondary Market when the ceiling placed on daily price gain per stock was raised from 10 kobo to 20 kobo. The situation in the market is such that this deregulation is guided. Thus the prices of shares are not a true reflection of their performance. Since there is no other option, the share price available for the respective firms for the four years were used. Hence the value of the company may not be a true reflection of the value or worth of the shares of company.

v) Another problem area is lack of market price or quotation price for debenture and loan stock. It is expected that the market price of the debenture and loan stocks should be used in the workings but we have to resort to the book values. This is because debenture/loan stock are hardly quoted and where quoted it is on irregular basis and at a value not higher than the book value. In most cases whenever they are quoted they are at an offer, this is a situation whereby investors want to sell but no body wants to buy. For example according to the NSE Report for 1994, out of the 63 industrial debentures and loan stocks listed in the stock Exchange 58 carry a negative sign which shows that the Debenture/loan stocks are on offer indicating Debenture/loan stock holders want to sell and no one wants to buy, while only 7 have positive sign, indicating that they are on bid - a situation where the debenture stockholders want to buy, but no body wants to sell. One of them has no sign. This is the situation in the Debenture stock market in Nigeria.

Thus, because of lack of quotation price for debenture stock book values of the debenture,loan stocks are used as a proxy for the market values. This differs from what is obtainable from Advance Market Such as U.S.A. where even if

long-term debt issues was privately held, the researcher could easily estimate the market value on the basis of the yields reported by Moody' for comparably rated issues of equivalent term. Such facilities are not available in Nigeria. Hence our measure of 'V', therefore must certainly be regarded as subject to errors.

vi) Other problem that may affect the calculation include clerical error, these are errors that the association with the calculations before they are entered into the computer for regression. Research of this nature involves a lot of arithmetical calculation which is prone to error such that the calculation made for this research is susceptible to error and cannot be said to be error free. However, there is no reason to believe that these errors are of a sufficiently systematic nature to bias the estimates.

vii) The research was not designed to offer an alternative way of establishing the relationship between the capital structure and the value of a firm. The work was aimed at employing the existing method as employed by researchers such as Miller and Modigliani (1966) and Sarma and Roa (1969). Other methods such as the one developed by Wippern (1966) are available but because of the non-availability of data for such a work, such

a method was never employed and that is why no much reference was made to this work.

viii One of the problems that proves difficult within Nigeria context is that of inflation. Over the years the inflation in Nigerias has been at alarming rate, hence it is believed that figures reported in the published financial statements are at inflated figures. The issue of inflation though noticeable is difficult to grapple with, because it is difficult to determine the base year especially where fixed assets and earnings have to beconsidered for four years before the sample years and also the problem of determining the index to be used if the figures were to be deflated. It can be concluded that inflation is a problem to grapple with and it is believed that it could be a new research area for researchers.

4.5 CHAPTER SUMMARY

This chapter highlights the problems encountered in carrying out research on leverage. Some of these problems has defy uobjective solution, while some have been overcome through the regression model employed.

The regression model and the regression coefficient of the two stage least square regression model were presented. The result attained shows that debt has greater advantage than its tax advantage. The outcome of the regression gives a credence to the traditional approval of capital structure, but oppose the findings of Miller and Modigliani

The factors involved in taking practical decisions on capital structure was discussed. It was also observed that the Nigerian capital market is underdeveloped and share price are grossly underpriced. The findings is not without its practical limitation such as type of data available, small number of quoted firms in Nigeria, Inflation and other variables are factors that may have affected the validity of the research.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 *SUMMARY*

It is an accepted fact that the major objective of business is to maximize the shareholders' wealth. Thus, any decision taken by management must be geared toward the accomplishment of this goal. The management is vested with the responsibility of taking these cardinal decisions namely investment, financing and dividend decision. These three cardinal decisions are to be taken bearing in mind the shareholders' wealth. The investment and dividend policy fall outside the scope of this study.

Managements are involved in making financing decisions as regard forms of finance, duration of the finance, the structure of the capital, the level of gearing and other relevant aspect of financing decisions. It becomes worthwhile to evaluate the impact of the capital structure on the value of a firm, bearing in mind that the maximization of the market value of a firm implies the maximization of the shareholders' wealth. Though leverage is appealing to management because of its lower cost as a source of

finance, it's usefulness should be evaluated in line with the main objective of a firm.

In making a decision about the choice of capital structure a lot of factors have to be taken into consideration. Some of these factors as enunciated by authors include; leverage effects on earnings per share, growth and stability of sales, cost of capital, cash flow ability of the firm, control, flexibility, size of the company, marketability or lenders attitude, statutory provision on capital structure and the tax policy of the government.

There exist a debate about the impact of capital structure on the value of a firm. There are mainly two school of thoughts on the issue. The first school is of the opinion that no particular combination has any greater value than the other, this implies irrelevance of capital structure. Miller and Modigliani who are perhaps the most quoted on capital structure theory and the proponents of the `no optimal capital structure school of thought' showed that financing decisions do not matter in perfect capital market. They stated that a firm cannot change the total value of its securities by first splitting it's cash flows into different streams (that is debt and equity streams), the firm's value is determined by it's real assets, not by the securities it issues.

Thus, according to Miller and Modigliani, capital structure is irrelevant as long as the firm's investment decisions are taken as given.

Miller and Modiglianis proposition only holds true if the perfect market assumption is made and there are no corporate taxes. In practice, however, there are market imperfection which include corporate taxes, bankruptcy costs, agency costs, floatation costs and others.

The second school of thought holds the view that there is indeed a particular capital structure mix that achieves the shareholders' wealth maximization objective of the firm. By implication, financing decisions are relevant and thus, capital structure has to be examined critically to ensure the optimum mix that will maximize the shareholders' wealth.

A lot of empirical works on this matter have been done in developed market economy such as U.S.A., with various findings. Some of the findings support the relevance of capital structure and the existence of optimum capital structure, while others support the Miller and Modigliani theory of irrelevance of capital structure. The implication of the debate is that, if the capital structure is irrelevant, finance manager should not waste his time in making financing decision, since all levels of capital

structure is optimum. But in practice this is not so, capital structure is an issue that must be addressed with caution. Nigerian Daily Times reports the case of Tate and Lyle Industry reeling under heavy debt burden, if such a case exists then capital structure is relevant.

However, despite a lot of debate on this issue, the opposing views remain unresolved and the results presented appear not useful for decision making. Little or nothing has been done in less developed market economy like Nigeria, to determine the applicability of the empirical results in their market. Thus, this is the motivational force behind this study. The study, therefore was designed to critically evaluate the impact of capital structure on the value of a firm using some selected quoted companies in Nigeria. The study has used Sarma and Rao (1969) version of the two-stage least square multiple regression analysis.

In an attempt to realize this objective, the use of field data (Historical data) utilizing a sample of seven firms for the first group and five firms for the second group and survey technique for obtaining information about practical issues on capital structure were employed. The field data were utilized in running the regression, the results which were presented in the last chapter,

while the survey technique provides the information also presented in chapter four.

In order to determine the effect of capital structure on the value of a firm multiple regression analysis is the most appropriate, out of the series of analytical tools available. However, the two-stage least squares estimate variation of multiple regression as developed by econometric society and applied by Miller and Modigliani (1958 and 1966) and modified by Sarma and Rao (1969) was employed. This was to ensure the determination of the expected earnings using the past earnings. In order to overcome the homogeneity problem as observed by Wippern (1966) in Miller and Modigliani research work, two groups were considered. The first group, conglomerates and drinks which consists of seven firms and the second group building materials consisting of five firms. Three of the conglomerates were excluded from the sample because of their poor performance over the cross-section years (1990-1995 excluding 1993) while 7Up Bottling Company Plc was excluded from drinks because it is relatively smaller in size as compared with conglomerates and Nigerian Bottling Company Plc. In the same vein some firm were excluded from building materials' group because of their size and poor performance.

The results of the regression analysis was presented in chapter four for the two groups show that the advantage of leverage is greater than the tax advantage and leverage is used up to levels considered prudent by management. The results is not consistent with the findings of Miller and Modigliani (1966), but, to that of Sarma and Rao (1969) and Wippern (1966). The results show that the shareholder's wealth is enhanced by the firm's judicious use of leverage and in addition to tax effects, firms do gain by employing a mix of financial sources.

It was observed in practice that the factors considered before issuing of shares or stocks are similar to those recorded in the finance literature. However, during a fresh issue of shares or stocks, the price movement in the stock market is suspended so as to protect the investors. The commonest form of debenture/loan stock in issue is the floating rate form, which interest rates depend on the CBN marginal Rediscount Rate. The lower the CBN marginal Rediscount rate, the lower the interest rate on stocks and the less attractive debenture/loan stock to corporate investors. As reported in Business Times recently, for the 1995 accounting year due to low CBN marginal Rediscount Rate, there was no single issue of debenture or loan stock. The CBN MRR was considered too low to attract prospective investors.

The research is not without certain limitations. These limitations include: the collection of data from annual published financial statements which is believed to be subject to manipulation (that is possibility of window dressing' of the reported figures); selection of the leverage variable, originally it was planned to include only long term debt but it becomes compulsory to include short term loans and overdraft because of their significance. Other limitations include; limited number of quoted companies which affected the sample size; poor pricing system in the Nigerian Stock Exchange which have a direct bearing on the value attached to the firm and the irregular quotation of debentures and loan stock; and the non-availability of yield for determining corresponding values hence book values were employed for debt variable.

Inflation has become one of the important factors that affect share valuation. According to the findings of some researchers it becomes obvious that inflation affects the share valuation and generally the stock market. According to F. Modigliani (1982) inflation increases the value of leverage and through that rate as well as other factors also increase the P/E ratio. Leverage in turn could unfavourably affect the market value of the firm. R.T. Coghlan and J.A. Boeckh (1982) were of the opinion that one

universal characteristics periods of high inflation is that stock prices fluctuate dramatically in both real and nominal terms. R. Kopcke (1982) was of the opinion that rising inflation rates tend to depress corporate earnings after taxes and thereby stock prices. While S.C. Leuthhold (1982) from the research work concludes that a correlation exists between annual stock market movements and the annual rate of inflation. F. Modigliani and R. A. Cohn (1979) through their time-series and cross-sectional results suggest that inflation through its effect on nominal interest rates, has caused systematic valuation errors as a result of which stocks are seriously undervalued. Nigeria economy, it becomes important to note that inflation may have affected the computation and possibly the result.

5.2 CONCLUSION

The findings of this research work show that debt has more than it's tax advantage; it has a significant effect on the value of a firm. Thus, the evidence of the effect of capital structure on the value of the firms included in this study provides support for the intermediate or traditional view that shareholder wealth is enhanced by firm's prudent use of debt.

Although the findings of this study is not consistent with those of Miller and Modigliani (1958 and 1966), nevertheless, the

differences may be as a result of different capital market. It is generally believed that American capital market is advanced and developed while that of Nigeria is less developed; this may be one of the reason for the diverse results. Other reason deductible can be because of the different levels of economic development, Nigeria is highly inflationary, while the rate of inflation in U.S.A. is relatively low; the size of the quoted companies also differ and this has a direct bearing on the sample size and possibly the overall result. These factors and other salient ones may have led to the divergence of opinions and results. Thus, according to this research work, capital structure is relevant and effort must be made towards proper financing decision in Nigeria and possibly in other less developed capital markets as described by Sarma and Rao (1969).

It must be understood that the stock prices in Nigeria are determined by multifaceted factors such as the nature of the company's business; nature of its management; potential of the business in maintaining it's market share and steady income flow; its financing and capital structure characteristics; level of gearing; nature of the competition; current and future strategic plans, including merger, takeover and acquisition proposals and investor's general attitude toward the company's stock.

The stock prices are affected by both qualitative and quantitative factors. Some of the qualitative factors may be difficult to be incorporated into the projection or the regression analysis. For instance, the removal of the Managing Director of Daily Times Nigeria Plc, subsequently led to drop in the share price of the company the following day; the removal of the managing Director of First Bank of Nigeria Plc led to a subsequent drop in the share price and most recently the execution of the nine Ogonis' and the fear of sanction by Western Countries which is believed will hamper the productivity of certain industries and their overall performance led to the reduction in the market share price.

The level of development in the Nigeria capital market is nothing when compared with the advanced economy. The pricing system is absurd, abnormal and regulated in such a way that the law/forces of demand and supply is not allowed to determine the stock prices. One may be tempted to conclude that there is no capital market in Nigeria , but it exists with poor performance, poor staffing and low quality of staff. The Nigerian Stock Exchange is mechanical not dynamic; there is no forum for improvement and no fruitful effort/attempt is made to sanitize the system by the government or the constituted authority.

5.3 RECOMMENDATIONS

In view of the findings of this research work, the following are recommended:-

(1) The Finance Manager must ensure proper planning for fund, appropriate matching of finance instrument with the appropriate project (investment), raising of fund at the appropriate time bearing in mind the investors' response to a particular finance instrument.

The Finance Manager should never assume that all level of finance mix is optimum, else the burden of debt might lead to the decline of his firm's performance and to its liquidation.

Before issuing debt instrument especially short term loans and overdraft the Finance Manager must evaluate the likely effect of the proposed debt instrument on its firm's-performance and share price. The interest payment on overdraft and short term loan are generally higher than that of long term debt instrument and thus, caution must be taken in their use as a means of sourcing funds.

(2) The deregulation in the stock market should be allowed to take it full course. The stock market operators should possess the authority to operate in the stock market without undue intervention by externally constituted authority.

(3) Based on the researh findings, it is recommended that the sampled firms should employed debt between 30% and 50% of their capital structure, outside this might not be profitable. The stock exchange board should permit the interplay of demand and supply to determine the prices of shares. In this way the real values attached to the shares (stocks) can be determined by the market forces and thus, the problem of underpricing is overcome and maximization of the shareholders wealth is achieved. When the brokers and other direct participants in the market are given a greater say in price making, the reported problem whereby stock-brokers have complained that the Stock Exchange restricts their actions and prevents them from effectively performing their rightful professional functions will be overcome.

(4) In other to overcome the problem of scanty number of firms quoted in the Nigerian Stock Exchange market greater incentives should be given to companies to seek quotation in the market. In otherwords, the conditions for admission into the first-tier and second-tier market should be reviewed to accommodate firms. This would have the effect of increasing the quantum number of securities available for trading purposes.

(5) The staffing position of the exchange should be improved. The Nigerian Stock Exchange is full of unqualified personnel who cannot render indepth analysis of financial statements and are unable to operate the market effectively and efficiently as it is being done in other countries.

Thus, if the market will improve and have an impressive performance, the market operators and staff must be specialists. It becomes important that more investment analysts and advisers, and finance experts should be employed and encouraged to render indepth financial and investment analysis services to the market on a regular basis.

Generally, the Nigerian Stock Exchange needs overhauling and transformation. An improved volume of trading activities should be encouraged through improved marketability of shares and stock, full course deregulation of the market and availability on regular basis of information about the market performance.

(6) Improved quality of stock broking firms: The officers of the stock-broking firms unlike law, medicine and accountancy, hardly qualified as professionals for the reason that stock-broking firms lacks that unifying body of knowledge which an aspirant has to acquire in order to qualify. The current

practice now is that one can become a security dealer with nearly any background and then train for three to six months period of continuous daily attendance at callover.

If the stock broking firms, the operators of the market, are going to perform efficiently their expected function, then, it becomes very important that experts in finance or finance related fields should be employed. If the right kind of personnel are employed, changes and transformation become easy.

(7) The government should ensure a stable and realistic exchange rate for the economy. The higher the exchange rate the lower firms capacity to import materials for their production and the higher the cost of production, this may adversely affect their overall performance and share price.

The government should regulate the rate of inflation in the country, the danger of an inflationary economy is that firms may appear with impressive performance which affect the share price and thus become inflated. Although the Federal Government in this year annual budget speech reduced corporate tax rate from 35% to 30%, in an inflationary economy, reduction in tax rate without a corresponding reduction in inflation rate may not produce the desired effect on the

shareholder's wealth. But, rather if inflation increases at a higher proportion than the reduction in tax, firms might experience poor performance, even if performance appear impressive as long as the purchasing power of money has been eroded, the shareholders' wealth may not be maximized.

5.4 FRONTIERS FOR FURTHER RESEARCH

In the course of this research work certain areas appeared to have been neglected and some of them are outside the scope of the research.

(i) The effect of dividend policy on the share price: there has been a lot of debate on this issue. Miller and Modigliani (1966) were of the opinion that except for the information effect, dividend policy is irrelevant. Other groups were of the opinion that dividend is relevant. But this area appears to have been neglected in third world economies. It becomes imperative to carry out a research work in this area to know the situation in less developed economy, taking Nigerian firms as a case study.

(ii) Another area that needed to be researched into is impact of working capital policy on firm's profitability and share price: One of the major problems faced by firms operating in Nigeria is maintaining a sustainable level of working

capital. It becomes very important to consider whether working capital policy of a firm has a relationship with its profitability and share price. It appears from finance literature, that not much work has been done in this area, even in developed economy. A research of this nature will provide a tremendous guideline for management in determining their firms working capital policy in order to maintain the shareholders' wealth maximization objective.

iii) Other problematic areas of possible research work is the effect of inflation on profitability and share price of firm:

In advanced countries there is extensive empirical literature on the effect of inflation on stock prices. Numerous researchers have documented a negative relationship between stock prices or rate of return and inflation. Some of these researchers include R.A. Kessel (1956), J. Lintner (1973), Philip Cagan (1974), Bodie Z (1976), Coglan and Boeckh (1982), R. W. Kopcke (1982), S.C. Leuthold (1982) and F. Modigliani and R.A. Cohn (1979, 1982 and 1985). Their findings show that inflation produce distortion in market valuation.

If in advanced economies such as U.S.A. with highly developed capital market and low rate of inflation, they observe that

inflation distorts market valuation, in Nigeria with high inflationary rate and less developed capital market, inflation may possibly effect the stock prices at a higher rate. Thus, it becomes important to carry out empirical research work on the relationship between inflation and stock prices in Nigeria. If a research work is conducted in this area, it is going to be of tremendous use to the operators of the stock market, managements and academia. Since inflation is currently the problem the Nigerian economy is grappling with, it becomes important to know the effect it has on the stock market (i.e. share price).

(iv) In the course of this research work, it becomes clear that the existence of parallel stock market in Nigeria: Since the activities of parallel stock market are not reported by the Nigerian Stock Exchange, the market may have affected the share price at the official Nigerian Stock Exchange. It is necessary to carry out a research work to evaluate the effect of the parallel market on share price in Nigerian Stock Exchange. This will help the constituted authority to know the negative effect (if any) and seek it's correction.

(v) As discussed in this research work, there is model employed by Wippern (1966). It is recommended that a research be

conducted using possibly a modified version of regression analysis employed by him to determine the effect of financial structure on the value of a firm and it's cost of capital. This will enable comparison with this research work and with other works done by other researcher in developed economies.

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APPENDIX B

MEANS OF THE VARIABLES

GROUP 1: CONGLOMERATES AND DRINKS

Variable	1990	1991	1992	1994
V/F	1.5896	1.8205	1.8785	1.5113
V-TD/F	1.3638	1.5803	1.6299	1.3662
X -T /F	0.1882	0.2377	0.2608	0.2394
1/F . 10	0.0344	0.0275	0.0198	0.0074
ΔF / F	0.1964	1.3934	0.9524	1.0633
ΔX - T /F	0.0889	0.0277	0.3894	0.4983
D/F	0.5645	0.6006	0.6216	0.3628
DIV/F	0.1065	0.0977	0.0891	0.0871

GROUP 2: BUILDING MATERIALS

	1990	1991	1992	1994
V/F	1.6576	2.0901	2.9596	2.4270
V-TD/F	0.9245	1.4338	2.0860	2.0846
X -TR/F	0.3939	0.3171	0.4277	0.7812
I/F . 10	0.1407	0.1031	0.0902	0.0447
ΔF / F	0.1273	0.2493	0.3098	0.4288
ΔX -TR/F	0.2760	0.2141	0.3324	0.8179
D/F	0.5237	1.2463	1.5492	2.1440
DIV/F	0.1255	0.1007	0.1200	0.1526