

FINANCIAL LEVERAGE AND FIRMS' VALUE: A STUDY OF SELECTED FIRMS IN NIGERIA

ADENUGBA, Adesoji Adetunji
Department of Accounting & Finance,
Crawford University, Igbesa, Ogun State, NIGERIA

IGE, Abayomi Akinyemi
Department of Accounting & Finance
Crawford University, Igbesa Ogun State, NIGERIA

&
KESINRO, Olalekan Rasheed
Department of Administration and Management
Crawford University, Igbesa Ogun State, NIGERIA

ABSTRACT

The main objective of this study is to determine the relationship between financial leverage and firms' value, as well as evaluate the effect of financial leverage on firms' value. A sample of 5 firms listed on Nigerian Stock Exchange (NSE) for a period of 6 years from 2007-2012 was used. Data were sourced from annual reports of selected firms. The Ordinary Least Square (OLS) statistical technique was used for data analysis and hypothesis testing. The study revealed that there is significant relationship between financial leverage and firms' value and that financial leverage has significant effect on firms' value. The study concludes that financial leverage is a better source of finance than equity to firms when there is need to finance long-term projects. However, various economic factors may have despicable effects on the profitability of Nigerian firms, as such the use of debt financing in such firms may yield negative impact such as bankruptcy as well as low firm value. The study therefore recommends that financial leverage be optimized by firms to aid maximization of firms' value.

Keywords: Financial Leverage, Firms' Value, Financing, Profitability.

INTRODUCTION

Every firm whether small scale firms or large scale firms need funds to operate; especially large scale firms, they need funds to expand their operations and activities. The motive of every firm is to make profit, maximize owner's wealth, and to achieve this motive they need to source for fund in order to finance their operations and activities. Firms have multiple financing sources to finance their investment. Basically, financing sources can be categorized into two; the internal financing sources which include reserves and retained earnings; external financing which includes long-term loans, bond issuance, ordinary and preferred stock issuance. (These sources are long-term sources of finance).

Firms must choose the best financing sources to reach the optimal capital structure so that they can make suitable financing decision that would enable them achieve positive returns. Financial leverage is the extent to which fixed income securities (debt) are used in a firm's capital structure. A firm's capital structure is the composition or structure of its liabilities. Furthermore, financial leverage reflects the amount of debt used in capital structure of the firm. Debt carries fixed obligation of interest payment. Thus, financial leverage increases as the fixed financial expenses of a firm increases i.e. interest expenses increases as higher amount of debt is incurred. Also with a high level of debt relative to equity, a small percentage change in earnings before interest and tax (EBIT) will lead to a large percentage change in net income.

Technically, financial leverage is defined as the percentage change in earning after tax (EAT) divided by percentage change in EBIT. An example of financial leverage is when a firm is financed with #100,000 having a capital structure of #20,000 owner equity and #80,000 loan debt having an interest rate of 5% annually. A firm can be either highly levered (having more debt than equity than debt in its capital structure) or lowly levered (having more equity than debt in its capital structure). Furthermore, having debt in a firm's capital structure is beneficial to a firm; this is because a firm with debt in its capital structure enjoys tax savings as interest is paid before tax is deducted from the firm's income. Financial experts also stated that financial leverage is a financial tool that is widely used to improve a firm's rate of return and its value. However, financial leverage irrespective of its benefit to a firm, also creates financial risk such as risk to the company; if a highly levered firm is unable to make sufficient EBIT, such firm might go into liquidation as it may not be able to meet its interest obligations and also finance other expenses of the firm.

Another risk is to the stockholder; if the firm incurs losses, this will cause greater volatility in earning and therefore greater volatility in the stock price and also such firm may not be able to pay any dividend to its ordinary stockholders as it would have to pay preferred stockholders prior to ordinary shareholders. However, the objective of a firm according to James C. Van Horne (1974) is to maximize its value to its shareholders. Value of a firm is represented by the market value of the company's ordinary shares, which in turn is a reflection of the firm's investment, financing and dividend decisions. And since financial leverage affects the cost of capital of a firm, it will also affect the value of the firm.

It should be noted that, maximizing earnings per share usually is not the same as maximizing market price per share. The market price of a firm's stock represents the value which the market participants place on it. Also, a firm creates value when the expected returns exceed the returns required by the financial market. The study will examine the relationship between financial leverage and firms' value by providing answers to the following questions:

1. Is there any relationship between financial leverage and a firm's value?
2. What is the effect of financial leverage on a firm's leverage?

Statement of hypotheses

To determine whether there is a relationship between financial leverage and firms' value, the following hypothesis would be tested:

H₀: There is no significant relationship between financial leverage and firms' value.

H₁: There is significant relationship between financial leverage and firms' value.

H₀: Financial leverage has no effect on a firm's value.

H₁: Financial leverage has effect on a firm's value.

FINANCIAL LEVERAGE

In general context, financial leverage is the use of debt in a firm's capital structure. In finance, capital structure refers to the way a corporation finances its assets through combination of equity, debt or hybrid securities. A firm's capital structure is then the composition of its liabilities. For example, a firm that sells N20 billion in equity and N80 billion in debt, is said to be 20% equity financed and the firm's ratio of debt to total financing 80% in this example is referred to as the firm's leverage. Hence, a firm's capital structure is an indicator of the proportion of debt to equity.

Ross, Westerfield and Jordan (1998), retreated that the use of debt in a firm's capital structure is called financial leverage. The more debt a firm has, the greater is its degree of financial leverage. To them (Ross et al 1998), debt acts as a lever in the sense that using it can greatly magnify both gains and losses. Hence, financial leverage increases the potential rewards to shareholders, but it also increases the potential for financial distress and business failures.

According to Horne (2002), the change in capital structure that is caused by an increase or decrease in the ratio of debt to equity is referred to as financial leverage. When a firm includes debt as a proportion of funds employed to finance its project, financial leverage is brought into being. Financial leverage is a company practice of the acquisition of part assets of the company with fixed interest capital with the hope of increasing ends results of the common stock holders. (Oloyede, 2000).

BENEFITS OF DEBT IN A CAPITAL STRUCTURE (ADVANTAGES OF FINANCIAL LEVERAGE)

The following are advantages a firm enjoys in using debt to finance its assets:

1. Interest on debt is tax deductible and as such the cost of debt is reduced.
2. Debt holders are limited to a fixed return, so stockholders do not have to share profits if the business does exceptionally well.
3. Debt holders do not have voting right over the company.
4. Financial leverage maximizes returns.

However, the use of high debt ratio leads to greater risk (financial risk) and higher required interest rates (to compensate for the additional risk). Also financial leverage increases shareholder risk as it concentrates the firm's business risk on the shareholders, because debt-holders who receive fixed interest payments bear none of the business risk. However, financial leverage will enhance shareholders' returns on the condition that the fixed charges funds (such as the loan, debentures) can be obtained at a cost lower than the firm's rate of return on net assets (ROWA or ROI).

DEGREE OF FINANCIAL LEVERAGE.

In finance, degree of financial leverage (DFL) is a ratio that measures the sensitivity of company's earnings per share (EPS) to fluctuation in its operating income, as a result of changes in capital structure. Degree of financial leverage (DFL) measures the percentage change in EPS for a unit change in earnings before interest and tax (EBIT). DFL is superimposed on operating leverage, changes in EBIT will have positive effect on both net income available to common stock holders and EPS. Therefore, if a company uses a considerable amount of both operating and financial leverage, a small change in the level of sales will result in wide fluctuation in net income and EPS. However the main motive of firms using financial leverage is to increase shareholders return under favourable condition (Pandy, 2003). Financial risk is the additional variability of earnings induced by leverage. However, the impact of financial leverage given the relative assumption that uncertainty prevails can be reduced to three alternatives:

1. Situation in which leverage increase risk, but at the same time decreases expected EPS.
2. Neutral situation in which the increase in risk following the introduction of leverage leaves EPS unchanged.
3. Situation in which the introduction of leverage increases expected EPS and risk simultaneously.

Furthermore, DFL is a change in EPS caused by the use of fixed payment securities to finance a company's operations. DFL is the change in proposition of the earnings per share relative to EBIT.

It is mathematically represented as:

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

It can also be represented by the equation below:

$$DFL = \frac{EBIT}{EBIT - \text{Interest}}$$

$$\text{I.e. } DFL = \frac{Q(p-vc)-fc}{Q(p-vc)-fc-I}$$

Where Q= quantity

P= price per unit

fc= fixed cost

vc= variable cost per unit

I= interest

This ratio shows that the higher the degree of financial leverage, the more volatile is EPS. Since interest is a fixed expense, leverage magnifies returns and EPS, which is good when operating income is rising. But it can be a problem during tough economic times when operating income is under pressure. Therefore, financial leverage is a two-edged sword which could either be favourable or unfavourable.

COMMON MISCONCEPTIONS ABOUT FINANCIAL LEVERAGE

1. One popular prejudice against leverage is that people who borrow a lot of money often end up badly. However, this is incorrect because this is not leveraging, it's simply money borrowed for consumption.

In finance, the general point of leverage is to borrow money to buy asset with a higher return than interest on debt.

2. Another misconception is that the fact that collapsing firms often have lot of leverage. However, this does not mean that leverage always causes collapses

FIRMS' VALUE

Maximizing shareholders' wealth is one of the corporate goals that cannot be ignored. The market value of a firm is an important measure of the shareholders' wealth.

Firm's valuation is essential for deriving stock prices, an item of significance in many models (keys and Briggs, 1990).

Determining a Firm's Value

According to Biggs (1978), stock price sometimes, is the sole measure of performance in the model. More commonly it is a major component of a weighted average that includes other measure. The value of a firm can be obtained through different measures, each of which is likely to give a value that differs from that obtained by another. The first and most readily available measure of the value of a firm is its accounting net worth or book value. This measure is however problematic, because the accounting rule in a model may be at variance (in divergence) with generally accepted principles of financial accounting. This is because conformance with some generally accepted principles such as historical cost and conservatism,

can lead to values that are far from what is reasonable. The second measure is the market value of all its outstanding shares. This is a popular everyday- world method of valuating public corporations. Its application however requires an efficient real market for shares. This condition is not met in models that do not allow participants to trade shares, and even when such trading is allowed, the trades are generally too few and too infrequent for reliable valuation. The third measure is the capitalized value of its projected future performance. Modigliani and Miller (1961) pointed out that although four distinct methods of capitalization can be applied for this purpose, all four give rise to precisely the same valuation when the markets are perfect. People are completely rational, and the future is known with perfect certainty. However, the capitalized value measure has a problem as it requires at least one arbitrary parameter (m), if the Goosen's method is applied. The fourth measure is the deductive application of human judgment. With this method, firms are rated along a psychometric scale. The results are then converted by formula to monetary values. The problem of this measure is that it requires subjective judgment. The fifth measure is the firm's accounting net worth adjusted for intangible and the idiosyncrasies of accounting rules used in the simulation. Although a general principle could be laid out for the adjustment, the specific principle must depend upon the particulars of the model.

Though, the adjusted net worth measure avoids both problems; it does not require an arbitrary parameter and can be completely objective. Its problem however, is that it requires detailed knowledge of imitation used in any particular model. However, the market value measure of determining firms' value is the most reliable and straightforward way of determining a firm's value, it is also known as market capitalization i.e. total value of all shares outstanding. It should be noted that this method only works for publicly traded companies, where shares value can be easily determined. The market capitalization (market value) of a firm can be determined by multiplying the number of outstanding shares by the current stock price. For example, consider Dynamics enterprises a publicly traded manufacturing company with 5,000,000 shares outstanding. If her shares are currently traded at 50k per share, dynamics' market capitalization is $5,000,000 \times 0.50$; which equals N2, 500,000. The above illustration shows that the major rider of a firm's value using this measure is the stock price. And this measure of determining a firm's value was adopted in this study.

Equity and Firms' Value:

Equity unlike long-term debt includes paid-up capital, share-premium, reserves and surplus or retained earnings. Igben (2004) defines paid-up capital as the portion of called-up capital which has been paid-up by shareholders. He defined reserves as the amount set aside out of profit earned by the company, which are not designed to meet any liability, contingency, commitment or reduction in value of assets known to exist in the balance sheet. Furthermore, reserves may be voluntarily created by directors or statutorily required by law. Share premium is the excess amount derived from the issue of shares at a price that is above its par value. And finally, retained earnings are profit invested back into the business in order to create more resources for operations and invariably increase the value of the firm. From the above explanation, he (Igben) thus, opined that there is no relationship between firm's value and equity.

Long- Term Debt and Firms' Value

Leland and Toft (1991) states that, the value of a firm is the value of its assets plus the value of tax benefits enjoyed as a result of debt minus the value of bankruptcy cost associated with debt. Modigliani (1980) points out that, the value of the firm is the sum of its debt and equity

and this depends only on the income stream generated by its assets. The value of the firm's equity is the discounted value of its shareholders earnings called net income. That is, the net income divided by the equity capitalization rate or expected rate of return on equity. The net income is obtained by subtracting interest on debt from net operating income. On the other hand, the value of debt is the discounted value of interest on debt. Jensen (1986) suggests that, when firms have more internally generated funds than positive net present value (NPV) projects, debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects. This over-investment problem can be lessened if managers are forced to pay out excess funds for servicing debt, therefore enhancing the firms' value.

Myers (1993) suggests that, a firm with outstanding debt may have the incentive to reject projects that have positive NPV if the benefits from accepting the project accrue to the bondholders without also increasing shareholders wealth. McConnell and Servas (1995) posit that, seeds of under-investment problem lie in the solution of over-investment of U.S firms. They discovered that for firms with high P/E ratios or for high-growth firms, value is negatively related to leverage and those firms with low P/E ratios or for low-growth firms, value is positively related to leverage. Their evidence supports the contentions that for low-growth firms, leverage acts as a monitoring mechanism to enhance firm value. Whereas for high-growth firms, leverage cause under investment and destroys the value of the firm. The above empirical studies show that there is a relationship between debt and firms' value.

Theoretical framework.

Kumar (2007) since 1958, at least eight theories and theoretical frameworks have been developed relating to a firm's financial leverage. These are:

1. Irrelevance theory by Modigliani and Miller (M&M) in 1958.
2. Static trade-off theory (STT) by Myers and Majluf in 1984.
3. Asymmetric information signalling framework by Ross in 1977.
4. Model based on agency cost by Jensen and Meckling in 1976.
5. Pecking Order framework (POF) by Majluf and Myers in 1984.
6. The legal environment framework of capital structure by La Porta et. Al in 1997
7. Target leverage framework or Mean revision theory by Fisher et al in 1989.
8. Transaction cost framework by Williamson in 1988.

However, the irrelevance theory of M & M, STT and POF of Myers and Majluf basically forms the theories of financial leverage.

The study of capital structure initialising the Myers studies of capital structure and financial leverage. As the nature of knowledge that is always dynamic, Myers found that the theory of Modigliani and Miller (M&M) is not always appropriate. As such Myers and Majluf together studied the capital structure puzzle and then initiated the 'Static trade-off theory' and 'Pecking order theory' which are used as the theoretical basis of financial leverage toward capital structure. Furthermore, in his paper titled "The Capital Structure Puzzle" Myer (1984) divides the contemporary thinking on capital structure into two theories; Static trade-off theory and the Pecking order framework.

Irrelevance Theory by M&M (1958)

The theory of business finance in modern sense starts with the Modigliani and Miller (1958) capital structure irrelevance propositions. Before Modigliani and Miller, there was no generally

accepted theory of capital structure. They (M&M), started by assuming that the firm has a particular set of expected cash flow. When the firm chooses a certain proportion of debt and equity to finance its assets, all that it does is to divide up the cash flows among investors. Investors and firms are assumed to have equal access to financial markets, which allows for home-made leverage (the use of personal borrowing of investors to change the amount of financial leverage of a firm). The investors can create any leverage that was wanted but not offered, or investors can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm. As a matter of fact, their paper led subsequently to both clarity and controversy and this theory can be proved under range of circumstances (Frank and Goyal, 2005).

Static Trade-Off Theory (STT) By Myers and Majluf (1984)

STT offers a partial explanation of the factors that determines a firm choice of leverage. The STT model is illustrated in the table below:

Table 2.3.1.2 Determinants of leverage: Static trade-off theory

Variables	Hypothesis (Impact on leverage)	Author (Year of publication)
Effective marginal tax rate on firm	Positive	Frank and Goyal (2005) Tariq and Hajazi (2006)
Tangibility	Positive	Brierley and Bunn (2005)
Investment flexibility	Positive	Bancel and Mittoo (2004)
Profitability	Positive	Frank and Goyal (2006)

Source: Tariq and Hajazi (2006)

Pecking Order Theory

This theory was formed by Myers and Majluf (1984). Furthermore, Myers (2001) stated that in pecking order theory, the firm will borrow rather issue equity when internal cash flow is not enough to fund capital expenditure. Thus the amount of debt will reflect the firm's cumulative need for external funds. Myers (1984) present the pecking order model as a theory both about how firms finance themselves and about the capital structures that result from pecking order financing.

This model is illustrated in the table below;

Table 2.3.1.3

Variable	Hypothesis(Impact on leverage)	Author (year of publication)
Profitability	Negative	Fama and French (2002)
Level of tangible asset	Positive	Read Jr. (2012) Brierly and Bunn (2005)

Sources: Bancel and Mittoo (2004)

However, Bastos and Ramalho (2010) argued that pecking order theory due to information irregularities between firms' managers and potential outside financiers, firm tends to adopt a perfect hierarchical order of financing; first, internal funds (retained earnings) are used. Next, in cases where external financing is needed, low-risk debt is issued, and only as a lender of last resort, when firms are no longer able to issue safe debt, they issue new shares. Frank and Goyal (2002) also found out that under the pecking order theory, one might expect that firms with few tangible assets would have asymmetric information problems. Thus, firms with few tangible assets will tend to accumulate more debt overtime and become more highly levered.

THEORY OF CAPITAL STRUCTURE: EFFECT OF FINANCIAL LEVERAGE

There are two main theories of capital structure as to the effect of financial leverage or financial gearing (debt financing) on cost of capital and hence market value of a firm. The two main theories are:

1. Traditionalist theory
2. Modigliani and Miller theory (M&M)

The Traditional View

The traditional theory states that as a company gearing increases above zero, the weighted average cost of capital (WACC) will fall initially, because of the higher proportion of lower cost debt capital in the firm's capital structure, but eventually increase when gearing gets above a certain level because of the rising cost of equity offsets the higher proportion of low cost debt. According to this view, a judicious mix of debt and equity capital can increase the value of the firm by reducing the WACC up to certain level of debt. A firm has an optimum capital structure when the WACC is at minimum and thereby maximizing the value of the firm. However, the traditional theory was criticized for inferring that investors value levered firms than unlevered firms. This means that they pay premium for the shares of levered firms. The contention of the traditional theory that moderate amount of debt does not really add very much to the riskiness of the share is not defensible. There does not exist sufficient justification for the assumption that investor's perception about risk of leverage is sufficient at different levels leverage.

Modigliani and Miller (M&M) Theory

M&M did not agree with traditional view. They argued based on the following assumption:

1. Perfect capital market.
2. No taxation.
3. No transaction cost.

With this assumption, they debated that a firm's value and cost of capital remains invariant to the changes in the capital structure i.e. the capital structure does not affect the firms' value and its WACC. They indicated that the value of the firm depends on the earnings and risk of its assets (business risk) rather than the way it finances it assets. Since the form of financing (debt or equity) can neither change the firm's net operating income nor its operating risk, the value of levered firm and unlevered firm ought to be same. They also stated that financing changes the way in which the net operating income is distributed between equity holders and debt holders and concluded that firms with identical net operating income and operating risk, but different capital structure should have same total value. However, M&M reversed their decision with the introduction of tax. Also, both theories agreed that:

1. The cost of equity is higher than the cost of debt; this is because of the higher investment risk.
2. The cost of equity will increase as a company's level of financial gearing rises, because of the higher financial risk as debt rises.

EMPIRICAL REVIEWS

Kajola (2008), higher financial leverage decrease firm value by increasing bankruptcy risk. Therefore, an optimal capital structure is necessary for every firm to enhance the market value the firm. Gill, Biger and Mathur(2011), an optimal capital structure includes some debt, but not 100% debt. It is a 'best' debt/equity ratio for the firm that minimizes the cost of financing and reduces the chances of bankruptcy. Cuong and Canh (2012) found that the optimal debt ratio (total debt to total assets ratio) should not exceed 59.27% because a higher debt ratio will have negative impacts on firm value. Financial leverage plays an important role in increasing market value of the firm (Black 2001, Gompers et al 2003, Gill and Mathur 2011). Bancel and Mittoo (2004) found in their sample survey of managers from 16 Europeans countries that over 40% of the managers issued debt when interest rate are low or when the firm's equity is undervalued by the market. These findings suggest that managers use windows of opportunity to raise capital. They further reasoned that managers issue convertible debt because it is less expensive than straight debt, or to attract investors who are unsure about the riskiness of the firm. Nolan {2002}, in his study of leverage changes of UK adopted what can be regarded as a behavioural approach to leverage behaviour using the framework of Stein (1989). He claimed to have used managerial utility function in his model. Implicit in his model is that a low debt (D) implies that the cost of short run behaviour is low.

At low debt (D), he opined that the extra probability of going bankrupt is low also. As the debt level rises, the loss should also rise. According to Pandy (2008), the variance and covariance and therefore beta depend on three fundamental factors:

1. The nature of the business.
2. The operating leverage.
3. The financial leverage.

As suggested by their names, operating leverage and financial leverage are comparable concepts. In his words, operating leverage is the use of fixed costs, the degree of which is defined as the change in a company's earnings before interest and tax (EBIT) due to change in sales. Going by his words on the other hand, financial leverage is seen as the existence of debt in a firm's capital structure. Hence, a levered firm is the one that has debt in its capital structure. He also opined that financial leverage increases the firm's (financial) risk and hence, the equity beta of the firm. Ojo (2012) in his study of financial leverage on corporate performance in Nigerian firms, opined that financial leverage causes variability in the returns of shareholders, thus, adds financial risk. Consequently, beta (risk) of a levered firm's equity will increase as debt is introduced in the firm's capital structure.

Firms can finance their assets through a combination of debt and equity. The higher the proportion of debt in the capital structure of a firm, the higher it is default risk because debt carries a fixed cost which has to be paid irrespective of its operations performance. Thus, a high proportion of debt makes a firm vulnerable of default, with a slight decline in operations performance. It is therefore important to be clear what figures are being taken from a firm's financial statements for computing this correlation (Zubairi 2010). Rajan and Zingales (1995) believe that firms with high market-to-book ratio have higher costs of financial distress which

is why they expect a negative correlation. But, there may be other potential reasons for why the market-to-book ratio is negatively correlated with leverage.

For instance, the shares of firms in financial distress {high leverage} may be discounted at a higher rate because of distress risk and price [as suggested by Fama and French 2002]. If this is the dominant explanation, the negative correlation should be driven largely by firms with low market-to-book ratios. But in fact, the negative correlation appears to be driven by firms with high market-to-book ratios rather than by firms with low market-to-book ratios. It is unlikely that financial distress is responsible for the observed correlation. Read, Jr and Myers {2012} explained; by following the trade-off theory that the tangibility of asset have a positive sign towards debt ratios in the cross sectional test and this result seem reasonable. Large firms ought to borrow more; they are presumably safer and more likely to pay taxes. Firms with more tangible assets are less likely to be damaged in financial distress and should therefore have higher target debt ratios. According to Tariq and Hijazi (2006) Interest payment are tax-deductible expense and decrease the tax liability thus providing cash savings. Therefore firms will use a higher level of debt to take advantage of tax benefits if the tax rates are higher. If the firm incurs losses, this tax benefit will fade away. So, if its operating earnings are enough to meet the interest expense, then firms will get the benefit of tax deductibility of interest expenses.

Also, the chance of default increases as the level of debt increases, so there exists an optimal level of debt. If the firm goes beyond this optimal point, it is more likely that the firm will default on the repayment of the loan. Sharma (2006) took a sample of Indian manufacturing firms and found that there is a direct relationship between firm's value and financial leverage. Adeyemi and Oboh (2011) took a sample size of 90 firms from Nigeria and found that the market value of a firm is positively influenced by its choice of capital structure (financial leverage). Cheng and Tzeng (2011) collected data from 645 companies listed in the Taiwan Securities Exchange (TSE) from 2000 – 2009 and found a positive relationship between leverage and firm value. A recent study on the relationship between financial leverage and financial crisis in Nigeria using co-integration technique, vector error correction mechanism (VECM), Granger causality and exponential generalized autoregressive conditional heteroscedascity (EGARCH) methodology shows that there is an equilibrium relationship between macro-economic financial leverage and the financial soundness.

It was recognized that the underinvestment problem by noting that shareholders of firms with risky debt will invest only when or up to the point at which, the expected return on investment is at least as great as the promised payment to bondholders. When the expected return is less than the promised payment, shareholders fail to exercise the investment option or invest less than the optimal amount, which reduces firm value. It is this decline in firm value which limits the amount of debt a given firm can issue (Myers, 1977).

METHODOLOGY

Research Design

This is a non experimental research setting based on survey design. It involves the gathering of information about the relationship between financial leverage and firms' value. The study population used in this research was taken from the manufacturing sector of the Nigerian economy. Data considered for the study were selected mainly from secondary sources. The data were collected from annual reports and statement of account of the companies under consideration covering a period of 6years from 2007-2012. The sample size of 5 firms from

the manufacturing sector listed on the Nigerian Stock Exchange. The study covered a period of 6 years from 2007-2012. Simple random sampling method was adopted in selecting the sample size of 5 firms. This method was adopted because it is easy, cost less and understanding.

Method of Data Analysis

Data gathered were analyzed using regression analysis method. Regression analysis is a statistical tool for estimating relationships among variable especially when focus is on the relationship between a dependent variable and one or more independent variables. Regression is also used to understand if the independent variable is related to the dependent variable and to explore the form of this relationship and also infer the causal relationship (effect) between the variables (dependent and independent). However, the simple linear regression method was specifically employed, using the Ordinary Least Squares (OLS) method to estimate the parameters. The Ordinary Least Squares (OLS) method was employed because it is the best linear unbiased estimator.

Model Specification

The model to be regressed in this study is presented in a relation form as follows:

Firm value = F [Debt/Financial leverage]

Linear expression of the model=>

$F\text{-val} = b_0 + b_1 \text{Lev} + e$

I.e. $Y_i = \beta_0 + \beta_1 X_i + \varepsilon$

Lev= Total debt/Total equity

Y= Dependent variable i.e. Firms' value.

X_1 = Independent variable i.e. Financial leverage.

β_0 and β_1 are parameters to be estimated.

ε = Error term.

Firm value= Market value of firm's shares.

Financial leverage= Total debt/Total equity

A priori Expectation

Considering the empirical studies by past financial analysts, it was expected that financial leverage has a significant relationship with firm's value and also that financial leverage has significant impact on firm's value.

Statistical Criteria

It is necessary to check the goodness of fit of the model and the statistical significance of the estimated parameter; the statistical criterion used to check the goodness of fit was the coefficient of determination (R^2) and the T-test, Durbin Watson and F-test were the criteria used to check the statistical significance of the estimated parameters. The criteria are further explained below:

1. T- Test: This test was used to test the significance of the parameters estimated at (n-k) degree of freedom, where n= number of observations and k= parameters.
2. Coefficient of Determination (R^2): This shows the percentage of the total variation of the dependent variable the can be explained by the independent variable(s). R^2 shows

the extent to which the independent variable influences the dependent variable. A high value shows a high degree of influence and vice versa.

$$R^2 = \frac{\text{Explained variation}}{\text{Total Variation}} = \frac{\text{RSS}}{\text{TSS}}$$

3. F-test: This is used to test the significance of R^2 and thus test the significance of the model as a whole. It is always at $F_{0.05}$ at the degree of freedom of F table with
 $V_1 = (k-1)$ $V_2 =$
 $(N-K)$
 If F-calculated is greater than F-tabulated, reject the H_0 and if F-calculated is less than F-tabulated accept H_0 at 5% level of significance.
4. Durbin- Watson statistic: This is mostly relevant when using time series data. This criterion was used to tests whether there is any evidence of autocorrelation in the residuals of the time series regression. The statistics ranges from zero to four, a value of two or close to two indicates no autocorrelation in the sample. A value far less than two indicate positive correlation while a value greater than two indicate negative correlation.
5. Data presentation
 Below, are the data used for the analysis of this study. Financial leverage connoted by (LEV) is estimated by total debt/total equity, and its value is given in ratio. Firms' value connoted by (FVAL) is estimated using market value of the shares of sampled firms, and its value is given in kobo.

DATA

Sources: Annual reports of sampled firms

S/N	SECTOR	Name of Companies	Year	FVAL	LEV
1		Avon Crowncaps & Containers (Nig) Plc	2007	374	0.586620805
			2008	1239	0.735716799
			2009	904	1.081935007
			2010	765	0.905684653
			2011	657	0.889203192
			2012	511	0.072508215
2		NEIMETH Int. Phar. Plc	2007	5.4	0.700118309
			2008	11.2	0.616648563
			2009	2	0.757271481
			2010	1.85	1.036426363
			2011	1.13	1.275513447
			2012	1.13	1.275513447
3		Nigerian Breweries Plc	2007	49	0.006307638
			2008	40.85	0.119455409
			2009	53.02	0.077076031
			2010	75.62	0.128466658
			2011	94.42	0.130267183
			2012	147	0.213272794
4		Nigerian Bag Manu. Co. Plc (BAGCO)	2007	1.54	0.333195437
			2008	3.95	0.067693845
			2009	2.23	0.059096380
			2010	3.91	0.045111750
			2011	2.78	0.057641607
			2012	2.04	0.133738396
5		PharmaDekoPlc	2007	70	-0.504628445
			2008	195	-1.742555838
			2009	650	-0.081903507
			2010	1116	-0.086471782
			2011	654	-0.050574581
			2012	900	0.095321008

Data analysis and interpretation

The results of the OLS regression are analysed in the table below:

Table 4.3.1: Descriptive Statistics

Variables	Mean	Std. Dev.	Observation
FVAL	284.4177	386.6451	30
LEV	0.297789	0.597186	30

Source: E-view, 7.0 Appendix 1

Interpretation

Table 4.1 above highlights descriptive statistics of variables. Firm Value (FVAL) which is the dependent variable has a mean of 284.4177 and a standard deviation value of 386.6451. The mean value of Leverage (LEV) stood at 0.297789 and a standard deviation of 0.597186. The last column represents the number of samples in our observation.

Table 4.3.2: Correlations of Variable

	FVAL	LEV
FVAL	1.000000	
LEV	0.573287	1.000000

Source: E-view, 7.0 Appendix 1

Interpretation

The table shows that the co-efficient of correlation of a variable with respect to itself is 1.000. This indicates that there exists a perfect Correlation between a variable with respect to itself. The correlation co-efficient between the dependent variable and independent variables are discussed below:

The result showed that there exist a positive relationship between Leverage (LEV) and Firm Value (FVAL). The correlation co-efficient between Leverage (LEV) and Firm Value (FVAL) is about with a value of 0.073287 which means the strength of relationship between them is about 0.57% which shows an average positive relationship between Leverage (LEV) and Firm Value (FVAL).

MODEL SUMMARY AND ANALYSIS OF RESULT

The result obtained from the preliminary ordinary least square estimation technique is presented below:

Table 4.4.1 Ordinary Least Square Regression Result (Initial Output)

Dependent Variable	Independent	Coefficient	Standard Error	T-Stat.	Prob.
FVAL	C	270.2878	80.33592	3.364470	0.0022
	LEV	47.44923	122.0266	0.388843	0.7003

Source: E-views software (Appendix 1)

R-Squared = 0.05
 R-Bar Squared = 0.03
 F-Stat. = 0.15
 DW-Statistic = 0.44

Interpretation of Result

The coefficient of determination (R^2) with a value of 0.05 shows that about 0.05% of the total systematic variations in the dependent variable (FVAL) have been explained by the explanatory variables taken together. The adjusted R-Square shows that after adjusting for the degree of freedom, the model could still explain about 0.03% of the total systematic variations in Firm Value (FVAL), while about 97% of the systematic variation in Firm Value (FVAL)

was left unaccounted for, which has been captured by the stochastic disturbance term in the model. This indicates a low fit of the regression line and also the model has a low forecasting power. On the basis of the overall statistical significance of the model as indicated by the F-statistic, it was observed that the overall model was statistically significant since the calculated F-value of 0.15 is less than the critical F-value of 4.17 at 5% level of significance. This implies that there is no significant linear relationship between Firm Value (FVAL) and the independent variables Leverage (LEV). On the basis of the individual statistical significance, as shown by the t-statistic, it was observed that Leverage (LEV) is positive but highly insignificant, since its calculated t-value of 0.38 is less than the critical t-value of 1.701 at 5% level of significance. The DW-statistics of 0.44 showed that there is the presence of first order auto-correlation in the model. Hence the model was re-estimated.

Table 4.4.2: Ordinary Least Square Regression Result (Final Output)

Dependent Variable	Independent	Coefficient	Standard Error	T-Stat.	Prob.
FVAL	C	349.3355	135.66775	3.27956	0.0257
	LEV	40.84653	19.4391	1.82670	0.0455

Source: E-views software (Appendix 2)

R-Squared = 0.70
 R-Bar Squared = 0.63
 F-Stat. = 19.19
 DW-Statistic = 1.78

Interpretation of Result

The coefficient of determination (R^2) with a value of 0.70 shows that about 0.70% of the total systematic variations in the dependent variable (FVAL) have been explained by the explanatory variables taken together. The adjusted R-Square shows that after adjusting for the degree of freedom, the model could still explain about 0.63% of the total systematic variations in Firm Value (FVAL), while about 37% of the systematic variation in Firm Value (FVAL) was left unaccounted for, which has been captured by the stochastic disturbance term in the model. This indicates a moderate fit of the regression line and also the model has a high forecasting power. On the basis of the overall statistical significance of the model as indicated by the F-statistic, it was observed that the overall model was statistically significant since the calculated F-value of 19.19233 is greater than the critical F-value of 4.17 at 5% level of significance. This implies that there is a significant linear relationship between Firm Value (FVAL) and the independent variables Leverage (LEV). On the basis of the individual statistical significance, as shown by the t-statistic, it was observed that Leverage (LEV) is positive and highly significant, since its calculated T-value of 3.82670 is greater than the critical T-value of 1.701 ($n - k = 28$) at 5% level of significance. The Durbin-Watson (DW) statistics value of 1.78 is a significant improvement on the preliminary OLS.

TEST OF HYPOTHESES

In order to test the hypotheses of the study, the t-statistic obtained from the regression result were used. The study adopted 5% level of significance under the one-tailed test. Our decision rule is to accept the alternative hypothesis if the T-calculated is greater than the T-critical value otherwise we reject alternative and accept the null. The t-critical value is 1.701 at 5% (0.05) significant level and at 28 degree of freedom (one-tailed test).

Hypothesis 1:

H₀: There is no significant relationship between Leverage and Firm Value.

H₁: There is a significant relationship between Leverage and Firm Value

From the empirical analysis it was observed that Leverage with a calculated t-value of 3.82670 is greater than the critical t-values of 1.701 at 5% level of significance.

We therefore reject the null hypothesis and accept the alternative hypothesis which states that there is significant relationship between Leverage and Firm Value.

Hypothesis 2:

H₀: Financial leverage has no effect on a firm's value.

H₁: Financial leverage has effect on a firm's value.

The empirical analysis shows that financial leverage with a calculated t-value of 3.82670 is greater than the critical t-value of 1.701 at 5% level of significance. We therefore reject the null hypothesis and accept the alternative hypothesis which means that financial leverage has effect on a firm's value.

SUMMARY OF FINDINGS

The research work examined the relationship between financial leverage and firms' value, using 5 selected firms from the manufacturing sector for the year 2007- 2012.

With the result of the analysis and the hypotheses tested, the following were the findings:

1. It was observed that there is a significant relationship between financial leverage and firms' value. Since the t-test calculated is greater than the t-test tabulated at 5% level of significance.
2. It was also found that the level of debt a firm has in its capital structure is a factor that will affect its value. Since the second hypothesis "financial leverage has no effect on a firm's value" was found to be negative.
3. Also the data above showed that while some of the sampled firms had high market value of their shares as the leverage ratio increase, for other firms, as the leverage ratio increases the market value of their shares decreases.

CONCLUSION

The main objective of the study was to find out the relationship between financial leverage and firms' value. Financial leverage (debt) is a good source of finance to firms as it enables firms to carry out long- term projects and also reduce the tax payable by the firm. It has also been observed that the large amount of debt (high leverage ratio) have negative effect on firms that makes low profit, thus the investors may receive little or no earnings (dividend). Investors' faith in both the companies and the capital market is shaken; hence the market value of firms' shares will fall same as its value. This study has however established that there is a relationship between financial leverage and firms' value and also financial leverage has effect on firms' value, both positive and negative effects.

However, the researcher is hoping that if companies/firms can implement the recommendations stated below, it is expected that they would be able to enjoy the positive effects of financial leverage and avoid the negative effects of financial leverage.

RECOMMENDATIONS

Based on this research work, the researcher made the following recommendations:

Corporate financial decision makers (in large firms) should employ more of long-term-debt than equity in their financial option. This is in line with the pecking order theory. Also firms are strongly advised to always compare the marginal benefit of using long-term-debt to the marginal costs of long-term-debt before concluding on using it in financing their operations. This is because as shown by this work, long-term-debt has impact on firms' value. Also, firms should ensure to use optimal level of debt in their capital structure, as this will lead to optimum capital structure and thus maximization in firms' value.

Finally, traditional theory states that as a company gearing increases above zero, the weighted average cost of capital (WACC) will fall initially, because of the higher proportion of lower cost debt capital in the firm's capital structure, but eventually increases when gearing gets above a certain level because of the rising cost of equity which offsets the higher proportion of low cost debt. The researcher advises companies to reduce their use of debt at the point where the weighted average cost of capital begins to increase, thus making the firms' value to fall.

APPENDIX ONE

Dependent Variable: FVAL

Method: Least Squares

Date: 05/29/14 Time: 03:41

Sample: 1 30

Included observations: 30

Variable	Coefficien t	Std. Error	t-Statistic	Prob.
C	270.2878	80.33592	3.364470	0.0022
LEV	47.44923	122.0266	0.388843	0.7003
R-squared	0.005371	Mean dependent var.	284.4177	
Adjusted R-squared	-0.030151	S.D. dependent var.	386.6451	
S.E. of regression	392.4308	Akaike info criterion	14.84694	
Sum squared resid	4312053.	Schwarz criterion	14.94035	
Log likelihood	-220.7041	F-statistic	0.151199	
Durbin-Watson stat	0.440670	Prob.(F-statistic)	0.700333	

CORRELATION

	FVAL	LEV
FVAL	1.000000	0.073287
LEV	0.073287	1.000000

APPENDIX TWO

Dependent Variable: FVAL

Method: Least Squares

Date: 05/29/14 Time: 03:41

Sample(adjusted): 2 30

Included observations: 29 after adjusting endpoints

Convergence achieved after 8 iterations

Variable	Coefficien	Std. Error	t-Statistic	Prob.
	t			
C	349.3355	263.0626	3.27956	0.0257
LEV	40.84653	19.4391	1.82670	0.0455
AR(1)	0.809015	0.132842	6.090065	0.0000
R-squared	0.706215	Mean dependent var.	281.3286	
Adjusted R-squared	0.632154	S.D. dependent var.	393.1120	
S.E. of regression	259.2292	Akaike info criterion	14.05100	
Sum squared resid	1747194.	Schwarz criterion	14.19244	
Log likelihood	-200.7395	F-statistic	19.19233	
Durbin-Watson stat	1.782197	Prob.(F-statistic)	0.000008	
Inverted AR Roots	.81			

REFERENCES

- Adeyemi, S.B. and C.S. Oboh, 2011. "Perceived Relationship Between Corporate Capital Structure and Firm Value in Nigeria", *International Journal of Business and Social Science*, 2(19).
- Bancel, F., & Mittoo, U.R., 2004. Cross-Country Determinants of Capital Structure Choice: A Survey of European Firms. *Financial Management*, 33(4)
- Bastors, J.A., & Ramalho J.J. (2010, September). CEMAPRE – the Centre for Applied Mathematics and Economics. Retrieved March 30, 2013, from ISEG-Technical University of Lisbon: <http://evunix.uevora.pt/~jsr/>
- Cheng, M.C, and Z.C. Tzeng, 2011. "The Effect of Leverage on Firm Value and How the Firm Financially Qualify Influence on This Effect". *World Journal of Management*, 3(2).
- Cuong, N.T and N.T. Canh, 2012. "The Effect of Capital Structure on Firm Value for Vietnam's seafood processing enterprises", *International Research Journal of Finance and Economics*, 89.
- Eugene, B.F, (1995). *Fundamentals of Financial Management*.
- Fama, E.F., & French, K.R. (2002). Testing Trade-Off and Pecking Order Predictions about Dividends and Debt. *The Society for Financial Studies* vol. 15.
- Frank, M.Z., & Goyal, V.K. (2005). Trade-Off and Pecking Order of Debt. In B.E.Eckbo, *Handbook of Corporate Finance: Empirical* (Chapter 7). North Holland: Elsevier.
- Gill, A. and N. Mathur, 2011b. "Factors that Influence Financial Leverage of Canadian firms", *Journal of Applied Finance and Banking*, 1(2).
- Gujarati, D.M. (1995), "Basic Econometrics, Third Edition", New York, McGraw-Hill.
- Understanding regression analysis and model specification in regression analysis, 1997.
- Horne J.C.V (2002). *Financial Management and Policy*. Prentice Hall Ltd, India.
- <http://www.investopedia.com/terms/a/optimal-capital-structure.asp>
- <http://www.en.wikipedia.org/wiki/leverage> (finance)
- Igben, R.O. (2004), "Financial Accounting made Simple". vol.1.ROL publishers, Lagos State.
- Jensen, M.C.(1986), Agency Cost of Free Cashflow, *Corporate Finance and Take Overs*. *American Economic Review*, vol 26.
- Kajola, S.O., 2008, "Corporate Governance and Firm Performance: The case of Nigerian listed firms", *European Journal of Economics, Finance and Administrative Sciences*, 14
- Kumar, R. (2007, August 15), "Determinant of Firm's Financial Leverage: A Critical Review". 3.

- Leland, H.E. and K.Toft. (1991), “Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of credit spreads, 51.
- Mc Connel, J.J. and H. Servas (1995), “Equity Ownership and the two Faces of Debt”, *Journal of Financial Economics* 39.
- Modigliani, F. (1980), Introduction in an Abel (ed), *The Collected Paper of Franco Modigliani*, vol. 3 Cambridge, Massachusetts. MIT Press.
- Modigliani, F. and M. Miller (1958), “The cost of capital structure, corporatipn finance and the theory of Investment”, *The American Economic Review*, 448(3)
- Myers, S.C. and N.S. Majluf (1984), “Corporate Financing and Investment Decision when Firms have Information that Investors do not have”. *Journal of Financial Economics*, 13.
- Nolan D. (2002), “Capital Structure and Short Term Decisions. *Oxford Economic Papers*, 54(3).
- Obradovich, John and Gill, Amarjit (2013), “The Impact of Corporate Governance anf Financial Leverage on the Value of American Firms” *Faculty Publications and presentations*. Paper 25, 4.14.
- Ojo, A.S. (2012), “The Effect of Financial Leverage on Corporate Performance of Some Selected Companies in Nigeria. *Canadian Social Sciences*.
- Oloyede, B. (2000), *Principles of Financial Management*, Forthright Educational Publishers, Lagos.
- Pandey I.M. (2008), “ *Financial Management*. Vikas Publishing House PVT. Ltd.
- Rajan, R.G., & Zingales, L. (1995), “What do you know about Capital Structure? Some Evidence from International Data. *The Journal of Finance*.
- Read, Jr., J.A. (2012), “Real Options, Taxes and Financial Leverage”. *National Bureau of Economics* 18(184).
- Ross, A.S. Westerfield, W.R., Jordan, B (2004), “*Essentials of Corporate Finance*”, McGraw Hill Inc. Boston.
- Manufacturing Sector Firm in India”. *The Business Review*, 6(2).
- Tariq, Y.B., & Hajazi, S.T. (2006), “Determinant of Capital Structure: A Case for the Pakistani Cement Industry”. *The Lahore Journal of Economics*.
- Van Horne, J.C., (1974), “*Financial Management and Policy*”.
- www.cies.org/.../project statement sample...
- www.sagepub.com/booksprodDesc-nav?....
- Zubairi, H.J., (2010), Social Science Network Retrieved March 20, 2013 from papers: [Http://papers.ssrn.com/so13/papers.cfm?abstract_id=1534186/](http://papers.ssrn.com/so13/papers.cfm?abstract_id=1534186/)