

Capital Structure and Firm Value in Nigerian Listed Manufacturing Companies: an Empirical Investigation Using Tobin's Q Model

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Abstract

This paper is an empirical analysis of capital structure determinants in Nigerian manufacturing industry for the period of 2012 - 2016. Data was collected from the Nigerian Stock Exchange (NSE) fact book. The conditional probability model analyses are estimated using probit. Eight explanatory variables of capital structure to measure their effect on firm value (measured by Tobin's Q) were utilized. Seven of the variables were significantly related to firm value whereas the remaining one variable was not. The results show that profitability, size of the firm, liquidity and leverage are negatively significantly related to firm value whereas potential for growth, age of the firm, tangibility are positively significantly related to the firm value. The results validated the prediction of pecking order theory in case of profitability and that of trade-off in the case of tangibility whereas earnings volatility fails to conform to the trade-off theory and firm value using Tobin's Q model with respect to Nigerian data. In view of the above findings and conclusions, it is therefore recommended that regulators, board and management of companies should always consider the above variables as bases for debt financing decision in order to achieve optimum capital structure.

Keywords: *Firm value, Tobin's Q, Profitability, Liquidity, Size, Age, Growth, Earnings Variability, Tangibility and Leverage*

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Background of the Study

The concept of capital structure and firm value is a critical in accounting and finance. Managers of the firms strive the use of resources so as remain above board to enjoy competitive advantage (Mailafia & Ada, 2013). In view of the above managers pay attention carefully to select a capital mix of debt and equity in order to achieve optimization and therefore improve firm value. Theoretical and empirical research has existed on the area of capital structure since the path-breaking work by Miller and Modigliani published in 1958. However, most of the research work has been carried out in developed economies and very little is known about the capital structure of firms in developing economies (Mahmoud, 2016). Part of what remains to be answered is whether conclusions from theoretical and empirical research carried out in developed economies are valid for developing countries too; or a different set of factors influence capital structure decisions in developing countries. In essence, it is not clear whether conclusions from researches on capital structure are portable across countries in general. Rajan and Zingales (1995) studied the G-8 countries while Booth, Aivazian, Demirguc-Kunt, and Maksimovic, (2001) extended this work by including some data from emerging markets. the conclusions from these studies were that there were some common feature the capital structures of firms in different countries but that further research was necessary to identify the determinants of capital structure in specific institutional settings or countries.

Nigeria is a developing country with a single stock exchange that has five branches across the country. The Nigerian Stock Exchange accommodates about 300 securities. Thus, like most other developing economies, the area of capital structure is relatively unexplored in Nigeria. This study builds on that of Salawu (2007) & Mailafia & Ada, (2013) by adding to exogenous variables, using a wider time frame However, this study is confined only to listed firm in the manufacturing industry in Nigeria.

Nigeria's manufacturing industry is entering a phase of major change, as producers expand capacity to cope with the country's critical economic growth and sustainable development. Due to the strong correlation between GDP growth and manufacturing consumption, manufacturing production growth has also been helped by Nigeria's strong economic performance in recent years.

The magnificent importance of the manufacturing industry to the Nigerian economy as a whole is key motivator to conducting this analysis of the various factors that determine the financial mix of this noble sector in Nigeria. The main objective of this study is to identify the potential determinants of capital structure in the listed manufacturing firms in Nigeria. The time frame of the study is 2012 - 2016. The practical outcome of the study is expected to be of benefit to corporate financial managers who have to make an optimal mix of debt and equity in order to minimize the cost of capital. Accordingly, this study will help them to place more emphasis on those factors that are of significance in the determination of capital structure of their various firms. Existing and potential investors in the industry will also find the results of this study useful.

Statement of the Problem

There is a general lack of consensus by most scholars on the various determinants of capital structure studies such as Shehu (2011), Ezeoha (2010), Adesola (2009) and Salawu (2007), delved on determinants of capital structure of Nigeria firms. There is also a concentration of these studies on the entire quoted firms of the capital market, with only a few directing their tentacles to specific sub-sectors of the capital markets of developing countries like Nigeria. There is hardly any known study on the subject, which focuses on the Nigerian manufacturing sector. Based on the foregoing, the study sets out to assess the impact of capital structure on firm value of Nigerian listed manufacturing companies by adopting Tobin's Q model to measure firm value. Therefore, Profitability, Liquidity, Size, Age, Growth, Earnings Variability, Tangibility and Leverage on its firm value. This study recognizes these variables as the determinants of capital structure of quoted manufacturing firms in Nigeria.

Objective of the Study

The objective of this study is to examine the impact of capital structure on firm value of the quoted Nigerian manufacturing firms.

Hypothesis of the Study

It is therefore; hypothesized that capital structure have no significant impact on the firm value of the quoted Nigerian manufacturing firms.

Literature Review

The concept of capital structure is all about the mix of debt and equity used by a firm in financing its assets. The capital structure decision is one of the most important decisions made by financial management. The capital structure decision is at the center of many other decisions in the area of corporate finance. These include dividend policy, project financing, issue of long term securities, financing of mergers, buyouts and so on. One of the many objectives of a corporate financial manager is to ensure the lower cost of capital and thus maximize the wealth of shareholders. Capital structure is one of the effective tools of management to manage the cost of capital. An optimal capital structure is reached at a point where the cost of the capital is minimal. What are the potential determinants of such optimal capital structure? This is the questions to be addressed in this study.

Modigliani and Miller, (MM) (1958) showed that if a company's investment policy was taken as given, then in a world of perfect markets a world without taxes, perfect and credible disclosure of all information, and no transaction costs associated with raising money or going bankrupt the extent of debt in a company's capital structure would not affect the firm's value. The perfect capital markets they assumed have attracted a wide variety of research of somewhat-less-than-perfect capital markets. The agency theory development in the 1980s, coupled with detailed research into the extent and effects of bankruptcy costs, has lead to the current mainstream view that corporations act as if there is a unique, optimal capital structure for individual firms that results from a trade-off between the tax benefits of increasing leverage and increasing agency and bankruptcy costs that higher debt entails.

In view of the unrealistic assumptions in MM irrelevance theory, research on capital structure gave birth to other theories. The trade off theory says that a firm's adjustment toward an optimal leverage is influenced by three factors namely taxes, costs of financial distress and agency costs. Baxter (1967) argued that the extensive use of debt increases the chances of bankruptcy because of which creditors demand extra risk premium. He said that firms should not use debt beyond the point where the cost of debt becomes larger than the tax advantage. Kraus and Litzenberger (1973) argue that if a firm's debt obligations are greater than its earnings then the firm's market value is necessarily a concave function of its debt obligations.

DeAngelo & Masulis (1980) worked further on Miller's differential tax model by including other non-debt shields such as depreciation charges and investment tax credits. They concluded that each firm has an internal optimal capital structure that maximizes its value and that capital structure is determined only by the interactions of personal and corporate taxes as well as positive defaults costs. Altaian (1984) was the first to identify direct and indirect costs of bankruptcy. By studying 12 retail and 7 industrial firms, he found that firms in the sample faced 12.2% of indirect bankruptcy costs at time t-1 and 16.7% at time t. He concluded that capital structure should be such that the present value of marginal tax benefits is equal to marginal present value of bankruptcy costs. Bradley, Jarrell and Kim (1984) used a model that synthesized modern balancing theory of optimal capital structure. They found strong direct relationship between non-tax shields and the firm's debt level.

Agency theory suggests that there exists an optimal debt level in capital structure that can minimize the above agency costs. To mitigate the agency problems, various methods have been suggested. Jensen & Meckling (1976) suggest either to increase the ownership of the managers in the firm in order to align the interest of managers with that of the owners or increase the use of debt which will reduce the equity base and thus increase the percentage of equity owned by managers. Grossman & Hart (1982) suggest that the use of debt increases the chances of bankruptcy and job loss that further motivate managers to use the organizational resources efficiently and reduce their consumption on perks. Jensen (1986) present free-cash flow hypothesis. And free cash flow refers to cash flow available after funding all projects with positive cash flows. Managers having less than 100% stake in business and their compensation tied to firm's expansion may try to use the free cash flows sub-optimally and increase firm size resulting in greater compensation (Baker, Jensen, & Murphy, 1988; Donaldson, 1984). Jensen (1986) suggests that this problem can be somehow controlled by increasing the stake of managers in the business or by increasing debt in the capital structure, thereby reducing the amount of "free" cash available to managers.

However, Harris & Reviv (1990) gave one more reason of using debt in capital structure. They argue that management will hide information from shareholders about the liquidation of the firm even if the liquidation will be in the best interest of shareholders because managers want the perpetuation of their service. Similarly, Amihud & Lev (1981) suggest that managers have incentives to pursue strategies that reduce their employment risk. This conflict can be resolved by increasing the use of debt financing since bondholders will take control of the firm in case of default as they are powered to do so by the debt indentures. Stulz (1990) said when shareholders cannot observe either the investing decisions of management or the cash flow position in the firm, they will use debt financing. Managers, to maintain credibility, will over-

invest if it has extra cash and under-invest if it has limited cash. Stulz (1990) argued that to reduce the cost of underinvestment and overinvestment, the amount of free cash flow should be reduced to management by increasing debt financing.

There is also another approach to explaining the capital structure of firms is the differences in the level of information, which the insiders and outsiders have about the investment opportunities and income distribution of the firm. Myers & Majluf (1984) provide the theoretical basis for this theory. According to the authors, there exists a degree of asymmetry of information between the firm's managers and investors concerning the real value of firm's present and future investment. It was Ross (1977) who had earlier contended that managers have better knowledge of the income distribution of a firm. That debt may generate positive signals to the outside world about the firm's income distribution suggesting that the firm has stable income and is able to pay the periodic installments and interest payments. In this regard, higher debt may show higher confidence of managers in the firm's smooth income distribution and adequacy of the income. Firms in their efforts to increase investors' confidence and thus increase the value of equity will use higher debt in the capital structure.

Leverage and Firm Value

Some empirically, previous studies suggest that the level of leverage depends upon the definition of leverage. Several research studies have used book market and book value based measures of leverage (Titman and Wessels 1988, Rajan & Zingales 1995). We use the book value measure of leverage. This can be justified with the argument that optimal level of leverage is determined by the trade-off between the benefits and costs of debt financing. The main benefit of leverage is the cash savings generated because of the debt-tax shield. This tax shield benefits are not changed by market value of the debt once it is issued. Banerjee, Heshmati, & Wihlborg (2000). It is therefore expected a negative relationship between leverage and firm value.

Tangibility of Assets (TANG) and firm Value

However, firm with large amount of fixed asset can borrow at relatively lower rate of interest by providing the security of these assets to creditors. Empirical evidence reveals mixed conclusion on the effect of tangibility on capital structure across various studies. While Wiwattanakantang (1999) finds negative relationship between tangibility and leverage for Thai firms, Prasad, Green, Murinde (2003) & Suto (2003) find a positively significant relationship for Malaysian firms whereas Booth. (2001) find a negative relationship for Thai firms. Having the incentive of getting debt at lower interest rate, a firm with higher percentage of fixed asset is expected to borrow more as compared to a firm whose cost of borrowing is higher because of having less fixed assets. Thus we expect a positive relationship between tangibility of assets and firm value of Nigerian listed manufacturing firms.

Size and Firm Value

Two conflicting viewpoints about the relationship of size to firm value, first, large firms don't consider the direct bankruptcy costs as an active variable in deciding the level of leverage as these costs are fixed by constitution and constitute a smaller proportion of the total firm's value. And also, larger firms being more diversified have lesser chances of bankruptcy (Titman & Wessels 1988). Following this, one may expect a positive relationship between size

and leverage of a firm. Second, contrary to first view, Rajan & Zingales (1995) argue that there is less asymmetrical information about the larger firms. This reduces the chances of undervaluation of the new equity issue and thus encourages the large firms to use equity financing. This means that there is negative relationship between size and leverage of a firm. Following Rajan & Zingales (1995), we expect a negative relationship between size and firm value of the manufacturing firms in Nigeria.

Growths and Firm Value

Research has shown that empirically, there is much controversy about the relationship between growth rate and firm value. According to the pecking order theory hypothesis, a firm will use first internally generated funds which may not be sufficient for a growing firm. And next options for the growing firms is to use debt financing which implies that a growing firm will have a high leverage (Drobotz & Fix 2003). On the other hand, agency costs for growing firms are expected to be higher as these firms have more flexibility with regard to future investments. The reason is that bondholders fear that such firms may go for risky projects in future as they have more choice of selection between risky and safe investment opportunities. Deeming their investments at risk in future, bondholders will impose higher costs at lending to growing firms. Growing firms, thus, facing higher cost of debt will use less debt and more equity. Congruent with this, Titman & Wessels (1988), Barclay, Smith & Watts (1995) & Rajan & Zingales (1995) all find a negative relationship between growth opportunities and leverage. Initially we expect that firms with higher growth opportunities will have lower level of leverage. Different research studies have used different measures of growth; like market to book value of equity, research expenditure to total sales measure and annual percentage' increase in total assets (Titman and Wessels, 1988). Given the structure of data we measure growth (GT) as a percentage increase in net total assets and hypothesized that firm value of Nigeria manufacturing firms is negatively related to the growth opportunities.

Profitability (PROF) and Firm Value

The pecking order hypothesis firms tend to use internally generated funds first and then resort to external financing. This implies that profitable firms will have less amount of leverage (Myers & Majluf 1984). We expect a negative relationship between profitability and firm value. We measure profitability (PF) as the ratio of net income after taxes divided by total sales. It is therefore expected that firm value of Nigerian manufacturing firms is negatively related to the profitability.

Earning Volatility (ENVT) and Firm Value

The earnings volatility is considered to be either the inherent business risk in the operations of a firm or a result of inefficient management practices. In either case earning volatility is proxy for the probability of financial distress and the firm will have to pay risk premium to outside fund providers. To reduce the Cost of capital, a firm will first use internally generated funds and then outsider funds. This suggests that earning volatility is negatively related with firm value. This is the combined prediction of trade-off theory and pecking order theory. However, Wiwattanakantang (1999) find that there is no significant relationship between the capital structure and volatility in earnings but in the view of Cools (1993) following the agency theory, he suggests positive relationship between earning volatility and leverage. He says that the problem of underinvestment decreases when the volatility of firms returns increases.

By this, it is assumed that earning volatility (EV) is positively related to firm value levels of manufacturing firms in Nigeria.

Age and Firm Value

The age of the firm is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt; hence age is positively related to debt. Before granting a loan, banks tend to evaluate the creditworthiness of entrepreneurs as these are generally believed to pin high hopes on very risky projects promising high profitability rates. In particular, when it comes to highly indebted companies, they are essentially gambling their creditors' money. If the investment is profitable, shareholders will collect a significant share of the earnings, but if the project fails, then the creditors have to bear the consequences (Myers, 1977). To overcome problems associated with the evaluation of creditworthiness, Diamond (1984) suggests the use of firm reputation. He takes reputation to mean the good name a firm has built up over the years; the name is recognized by the market, which has observed the firm's ability to meet its obligations in a timely manner. We therefore hypothesized that age of the firm is positively related to firm value in Nigeria listed manufacturing firms

Liquidity and Firm Value

Liquidity is defined as the ratio of current assets to current liabilities. As predicted by the pecking order theory, firms with high liquidity will borrow less. In addition, managers can manipulate liquid assets in favour of shareholders against the interest of debt holders, increasing the agency costs of debt. Thus, a negative relationship between liquidity and firm value is expected

Theoretical Framework

In order to link capital structure of Nigerian listed manufacturing companies and firm value, the portfolio theory is adopted. Modigliani & Miller (MM), (1958) worked on cost of capital, corporate finance and theory of investment found that portfolio theory is concerned with investors. Second, it is concerned with economic agents who act under uncertainty. Third, it is a theory which can be used to direct practice by making sure that management and board optimize the combination of capital structure in order to increase firm value. This will reduce cost of capital and information asymmetry. This two factors increase firm value. The portfolio theory approach which is what underpins capital structure and firm value in this study argued, in essence, that firm value of manufacturing companies is a function of decisions by the management because firms'-specific characteristics are within management control.

And these guide us in formulating the following model as frame for the study:

$$FMV = F(f(TANG_t, SIZE_t, GROWTH_t, PROF_t, ENVT_t, AGE_t, LIQUIDITY_t, LEV) \dots\dots\dots(1)$$

Transforming 1 above to linear relation we arrived at

$$Y_{it} = \alpha_o + \beta_{1it} \text{TANGt} + \beta_{2it} \text{SIZEt} + \beta_{3it} \text{GROWTHt} + \beta_{4it} \text{PROFt} + \beta_{5it} \text{ENVTt} + \beta_{6it} \text{AGEEt} + \beta_{7it} \text{LIQUIDITYt} + \beta_{8it} \text{LEV} + \mu_{it} \dots \dots \dots (2)$$

All the above variables are defined and measured as specified in methodology and model specification section.

Methodology and Model Specification

This study adopts the Ex-post factor design method. This is because the study seeks to investigate the impact of capital structure on the firm value of listed manufacturing companies in Nigeria. The data for this study were obtained mainly from secondary sources which were collected from the audited annual reports and accounts of the listed manufacturing companies in Nigeria. The population of the study consists of the thirty eight (38) listed manufacturing companies in Nigeria as at 31st December, 2012-2016, while the sample size is twenty (20). The study used censoring sampling techniques which is based on the availability of data. This research work is descriptive and highly empirical as it embraces the use of Probit analysis where conditional probability model technique is employed.

The study utilizes linear probability model (probit analysis) to estimate the relationship and E-view is used. The justification for adopting LP model lies to the fact that the regressand; capital structure is dichotomized into binary code one and zero. The study hypothesized that the probability of a firm to engage in firm value maximization lies on its capital structure determinants. Therefore in linear terms;

$$FMV = F(f(\text{TANGt}, \text{SIZEt}, \text{GROWTHt}, \text{PROFt}, \text{ENVTt}, \text{AGEEt}, \text{LIQUIDITYt}, \text{LEV}) \dots \dots \dots (3)$$

All capital structure variables are numerical quantitative variable. While the dependant variable; FMV is a dichotomous variable proxied by 1 if firm engage in firm value maximization and zero otherwise.

The model estimated is as thus:

$$Y_{it} = \beta_o + \beta_{1it} \text{TANGt} + \beta_{2it} \text{SIZEt} + \beta_{3it} \text{GROWTHt} + \beta_{4it} \text{PROFt} + \beta_{5it} \text{ENVTt} + \beta_{6it} \text{AGEEt} + \beta_{7it} \text{LIQUIDITYt} + \beta_{8it} \text{LEV} + \mu_{it} \dots \dots \dots (4)$$

$$E(y_{it}/X_{it} = \alpha_o + \beta_{it}X + \mu_{it}) \dots \dots \dots (5)$$

$$X = \text{Vector of } (x_1, x_2, x_3) \dots \dots \dots (6)$$

Y is conditional 1 if firm engage in value maximization and 0 otherwise, therefore, the conditional probability is given as:

$$\text{Pr}(y_{it} = 1, 0/X) \dots \dots \dots (7)$$

In running the (4) above first OLS was used. Since we expect:

$$E(y_i = 1, 0/x_{1, \dots, 3}) \dots \dots \dots (8)$$

We put a restriction of the coefficient of x_1, \dots, x_3 as:
 $0 \leq E(y_{it} / x_1, \dots, x_3) \leq 1 \dots \dots \dots (9)$

Non fulfillment of (9) led to run second regression using LP logit model.

Where:

FMV = The Chung and Pruitt's (1984) modified Tobin's Q, will be adopted.

Tobin's Q = (MVS + D)/TA

Where:

MVS = Market value of all outstanding shares, i.e. the firm's Stock Price * Outstanding Shares

TA = Firm's assets, i.e. cash, receivables, inventory and plant book value

D = Debt defined as: $D = (AVCL - AVCA) + AVLTD$

Where:

AVCL = Accounting value of the firm's Current Liabilities = Short Term Debt + Taxes Payable

AVLTD = Accounting value of the firm's Long-Term debt = Long Term Debt

AVCA = Accounting value of the firm's Current Assets = Cash + Inventories + Receivables

LEV = Leverage (measured as book value of long term debts divided by Capital Employed i.e long term debts plus shareholder funds)

TANG = Tangibility of Assets (measured as fixed assets divided by Net Total Assets)

SIZE = Size of the firms (measured as log of Net Total Assets)

GROWTH = Growth Potential (measured as % Increase in Net Total Assets)

PROF = Profitability (measured as earning after tax divided turnover)

ENVT = Earnings Volatility (measured as value of the deviations from means of net profit divided by total number of years).

LIQUIDITY = Liquidity of firms (measured as current liabilities divided by current assets)

Age = number of years registered in NSE

β_{0-8} = coefficients of explanatory variables

μ_{it} = error term

Results and Discussion

Below is the results of the logit model

The results of the model

Table 1: Regression result

Dependent Variable: FMV

Method: ML - Binary Probit (Quadratic hill climbing)

Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	Z-Statistic	Prob.
Constant	-0.733125	1.45221	-0.51226	0.4322
Tang	0.137232	0.091823	-2.583583	0.0098
Size	-0.118208	0.289435	0.062898	0.0499
Growth	0.014539	0.002677	1.695327	0.0900
Prof	-0.264568	0.970542	-3.157585	0.0016
Envt	0.019782	0.037892	1.900021	0.1382
Agee	1.312251	0.715574	2.731221	0.0375
Liquidity	-0.051897	0.028431	-2.800315	0.0755
Lev	0.817321	0.317244	5.134281	0.0000
Mean Dependent Var	0.724832	S.D. Dependent Var	0.27111	
S.E. Of Regression	0.283418	Akaike Info Criterion	0.949361	
Sum Squared Resid	9.782133	Schwarz Criterion	1.170072	
Log Likelihood	-31.16038	Hannan- Quinn Criter.	0.981611	
Restr. Log Likelihood	-36.07512	Avg. Log Likelihood	-0.45167	
Lr Statistic (3 Df)	12.513251	Mcfadden R-Squared	0.1462111	
Probability(Lr Stat)	0.0052183			

Source: E view output version 8

On the overall the model fits the data at less than 1% level of significant; meaning that the variables explained in full the regressand. Other indicators of econometric value for inference are Akwaike information centre, Hannan Quin & Swartz criteria all showing a good results of nearly one or closer to unity indicating the data is normal. the overall explanatory power of the model is revealed in Mcfadden R- squared, as usual in binary regression hardly this figure will be high contrary to OLS Adjusted R² (Ajoin,& Foster,1984). Mc Fadden R- squared shows significant variation of the regressand is explained by the regressors. Inferentially, capital structure significantly influences firm value. This confirms the findings Daniati & Suhairi (2006).

The relationship between leverage and tangibility (TANG) is positive as expected and is statistically significant. This result confirms our expectation that there is positive relationship between tangibility of assets and leverage of Nigerian listed manufacturing firms. This result is consistent with Prasad (2003) & Suto (2003) who find a positively

significant relationship for Malaysian firms. It is however in contrast with the findings of Booth (2001) and Wiwattanakantang (1999). They both find a negative relationship for Thai firms. The relationship between profitability (PROF) and leverage is found to be negative as postulated and statistically significant at 10%. This is in order with the pecking order hypothesis that firms tend to use internally generated funds first and then resort to external financing. This finding is consistent with that of Myers & Majluf (1984). We therefore conclude that there is a negative relationship between profitability and capital structure of Nigerian manufacturing industry.

Firm size (SIZE) is found to be negatively related with capital structure at 1% significant level. This is consistent with our previous expectation that there is a negative relationship between size and leverage of the manufacturing firms in Nigeria. The result is in line that of Rajan & Zingales (1995) who argues that there is less asymmetrical information about the larger firms. This reduces the chances of undervaluation of the new equity issue and thus encourages the large firms to use equity financing.

For growth potential, inverse relationship with capital structure is found as we expect the relationship to be negative. The results indicate positive statistically significant relationship between the endogenous variable and exogenous variable. Contrary to this findings are the study of Titman & Wessels (1988), Barclay (1995) and Rajan & Zingales (1995). They all find a negative relationship between growth opportunities and leverage. Similarly, liquidity has a negative and significant relationship with leverage. This is in line with the expectation of the study. The implication of this findings might be that firms tend to use their liquid assets to finance their investment in preference to raising external debt, and that they tend to prefer equity to debt when share prices are rising. On the other hand, consistent with Wiwattanakantang (1999) earnings volatility appears to have no significant effect on leverage. Firms may ignore the volatility of earnings if the risk and costs of entering into liquidation are low. This may occur if the borrowing level of firms is well below their debt servicing capacity. This can also be explained further by the industry average earnings volatility which is just about 2% as indicated in summary of statistic in the table 4.3 above.

For the age of firms, the results indicate that there exists a significant positive relationship with capital structure of the firms. This is consistent with the expectation of this study in which we hypothesized that age of the firm is positively related to leverage in Nigeria listed manufacturing firms. Consistent with this finding is the work of Diamond (1984). He takes reputation to mean the good name a firm has built up over the years; the name is recognized by the market, which has observed the firm's ability to meet its obligations in a timely manner.

The leverage of the firm has an impact on firm value (Luka & Ada, 2013). This is in line with common knowledge in finance that the potential investors will analyze the financial statement of the firms to see the leverage position before part away with their resources. This might be as a result of the industry average leverage position which is still manageable.

Summary and Conclusion

This study has presented an empirical analysis of the determinants of capital structure choices of Nigerian listed manufacturing firms based on the data available on their annual reports for the period 2012 - 2016. The effect of eight explanatory variables is measured on leverage ratio which is calculated by dividing the total debt by total assets. Simple Probit Regression analysis was applied with the assumption that there were no industry or time effects. Eight explanatory variables were used to measure their effect on leverage ratio and seven of the variables were significantly related to leverage ratio while the remaining one variable was not statistically significant in having relationship with the debt ratio. Profitability is the most significant explanatory variable and is negatively related to leverage. The negative sign confirms to prediction of the pecking order theory.

Tangibility is positively significantly to capital structure. The prediction of trade-off theory is thus confirmed by the result that creditors prefer the security of specific claim on fixed assets. Also, the study did not find any evidence that earning volatility influence the decision of leverage of the sample firms. Rather, the growth potential and age variable are both having positive relationship with capital structure. While the former is significant at 1%, the latter is at 5%. The liquidity has negative relationship at 10% significant level. Finally, size, measured by natural log of net total assets, has a positive coefficient and is significant at 1%.

Policy Recommendations

In view of the above findings and conclusions, it is therefore recommended that regulators, board and management of companies should always consider the above variables as bases for debt financing decision in order to achieve optimum capital structure. This will enhance industrial growth and development which is the fundamental of economic growth and sustainable development. Further research is also recommended.

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