

The impact of debt financing on profitability of non –financial firms in Nigeria

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ABSTRACT

This study compares the impact of debt financing on profitability of non-financial firms in Nigeria. Using a panel regression model to examine the impact of debt financing on profitability of manufacturing firms in Nigeria. The results show that the quoted firms are listed on the Nigeria stock exchange. The results showed that debt financing is statistically significant in determining profitability of manufacturing firms in the quoted firms in Nigeria. The regression results indicate that LTDR, LSTDR, LLTDR and LPROF are important in influencing the profitability of manufacturing firms in Nigeria. A well-managed capital structure in terms of debt financing, leads to an increase in the profitability of the firms as showed in the result.



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1. INTRODUCTION

The relationship between debt finance and profitability is a crucial issue in finance. Debt financing is associated with the trade-off between costs and gains (Harris & Raviv 1991). There is an overall debt level beyond which costs are higher than the benefits. Reaching a satisfactory debt level is critical for any business not only because of the need to achieve profitability but also because it increases an organization's ability to deal with its competitive environment. Debt Financing is when a firm raises its financial resources through sales of debt instrument to investors with a promise that the investors interest will be paid at a later date. The capital structure is a mix of debt and equity that the firm uses in its operation. The capital structure of a firm is a mixture of different securities. Firms can choose among many alternative capital structures. For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005). Firms can use either debt or equity capital to finance their assets. In the case where interest is not tax deductible, firms' owners would be indifferent as to whether they use debt or equity, and where interest is tax deductible, they would maximize the value of their firms by using 100% debt financing (Azhagaiah and Gavoury, 2011). The use of debt in capital structure of the firm leads to agency costs. Agency costs arise as a result of the relationships between shareholders and managers, and those between debt-holders and shareholders (Jensen and Meckling, 1976).

According to capital structure theory, capital structure refers to the way an organization finances its assets. A firm can be financed by 100% ordinary shares or with some mix of shares and debt. It is an important decision, how the assets of a firm are financed. Equity shares financing in which investors receive partial ownership in the company in exchange for their funds does not have to be repaid. Debt is borrowing money from an outside source with the promise to return the principal, in addition to an agreed-upon level of interest. Debt Financing increase overall risk and return of the company, as well as impacts on return of a change in the extent to which the firm's assets are financed with borrowed money. Contemporary corporate financial managers locally, regionally and globally face the challenge of unstable profits within their firms, other than equity, debts are considered the second most important forms of an entity's capital structure that affects an organisation's profitability. Most firms prefer internally generated funds to externally generated funds. If external debt is ever required, debt finance is preferred to equity finance. In other words, managers rank their order of financing in order of internally generated finance, and then externally generated finance with debt ranking before equity. Managers use this ranking in an attempt to preserve the value of the firm and more importantly to counter the wrong signals of issuing equity in the first place. Managers must rank the order of generating funds this way because, when a firm requires capital, issuing shares may send the wrong signals that can lead to a fall in firm value. When new shares are issued, investors

suspect the shares may be overpriced and refuse to buy, thus bringing down the value of the shares (Bradley, Myers, & Marcus 2009). This is usually caused by a misunderstanding of the current profitability and future prospects of the firm. Investors get these signals from the issue of shares because, rational people would not sell anything for less than its value, so the true value of the shares might be lower than what it is being sold for Ehrhardt & Brigham (2009). Managers try to avoid such wrong signals to shareholders by using internal funds as much as possible. Managers are led to prioritize their source of funds because of this signalling theory, to maximize profitability.

Debts therefore involve the financing of an organisation's assets and operations through the issuance of financial instruments that includes payable long term debts and short term debts, stocks and bonds. Debt finance mainly comprises of the Long - term debts and the short-term debts of an organisation. Debt is borrowing money from an outside source with the promise to return the principal, in addition to an agreed-upon level of interest. Debt financing impact on returns of a change in the extent to which a firm's assets are financed with borrowed money. The use of high levels of debt in the capital structure leads to an increase or decrease in the return on Equity (ROE). Return on Equity refers to the monetary gain by shareholders in return for the capital they offered to firms. Debt is always desirable if a firm achieves relatively high profits as it results in higher returns to shareholders. The major advantage of using debt is its low cost compared to the cost of equity. The actual cost of debt to the firm is the after-tax cost of debt, which is market interest rate less the marginal tax rate proportion. The use of debt therefore reduces the amount of tax to be paid by a firm and increases the return to shareholders whilst the use of equity does not enjoy such benefit. Besides the tax advantage, cost of debt is generally low as compared to equity due to the lower risk associated with debt as debt holders has the first claim in the case of insolvency (Damodaran, 1999:103). Debt also makes planning easy because interest cost on debt is usually fixed which allows efficient planning as the cost will be known. As long as the interest on debt is lower than the return that can be earned on the funds supplied by creditors, this excess return will accrue to the owners of the firm as their benefit of using debt (Bernstein, 1993:610). Though debt has its fair portion of benefits, it does not come without costs. Our study examines the impact of debts financing on the profitability of non-financial firms in Nigeria. By comparing the capital structures of quoted firms in Nigeria, It is expected that the findings of this study will have important implication on decision making of manufacturing firms. The remainder of the paper is organized as follows: Section two provides a review of the extant literature in the area. Section three discusses the methodology employed and Section four presents and discusses the empirical results. Section five concludes the discussion and provides some implications based on the findings of the study

2. LITERATURE REVIEW

Capital structure does not matter Early sections discuss theories of when capital structure decisions have no consequences for

the cost of capital, profitability and value. Under this theory, the choice of the mixture of debt and equity finance does not matter at all to firm's value. In other words, the value of the firm is the same no matter the capital structure (Ross et al 2009). This argument was propagated by Modigliani and Miller (MM). They argued that, shareholders have the ability to remix the capital structure privately to counter or even replicate management choice of capital structure. The net effect is that the firm's capital structure cannot increase or decrease firms value.

2.1 CAPITAL STRUCTURE MATTERS

The review continues with an opposing view which shows a situation where capital structure is relevant to firm's value. What makes capital structure relevant is derived from two main variables, the tax advantage of using debt and the risk of bankruptcy from the use of too much debt. This review explores the relevance of capital structure decisions broadly in terms of these two variables. Due to the tax advantage inherent in debt financing, many companies prefer debt financing to equity financing as it results in increased profits becoming available to the shareholder. However, debt must be used with extreme care because of the risk of possible financial distress when firms are unable to pay their debts. Associated costs of financial distress such as legal and administrative costs reduce profits available to shareholders.

2.1.1 Optimal capital structure

This brings us to the next discussion on what level of capital structure should the firm choose in order to maximise shareholders' value. Ross et al (2009, pp. 432) gave a simple answer to this question, 'managers should choose the capital structure that they believe will have the highest firm value, because this capital structure will be most beneficial to the firms' shareholders'. We agree with Ross et al, because after all, the reason for shareholders investing in the firm is to increase their wealth. Any rational investor will prefer financial decisions that increase his wealth to the maximum. This capital structure is the optimal level of capital structure. We then reach a conclusion. According to Ross et al (2009), 'the firms' value after capital structure changes can either be (1) greater than original firm value, (2) equal to original firm value and (3) less than original firm value'.

2.1.2 Capital structure without taxes

MM proposition I Miller and Modigliani (MM) in their seminal work on capital structure theory in 1958 concluded that debt is irrelevant to the value of the firm. For this theory to hold water, the tax advantage and the risk of using debt must cancel out exactly. This also means if the tax advantage is nil, then the risk disadvantage must also be nil for the theory to hold. The argument MM were making is that, no matter the mix of debt and equity in the firm's capital structure, there is no effect on the firm's market value, profitability and cost of capital. By extension, the capital structure of the firm is irrelevant in making shareholders richer or poorer. To put it in the words of Ross et al (2009, pp. 435), 'the value of the firm is always the same under different capital structures' One major argument made by MM to support their debt irrelevant theory is that since shareholders are capable of lending or borrowing on the same terms as the firm, they can easily replicate the capital structure of the firm. Management will therefore not be doing for shareholders what they (shareholders) cannot do for themselves. For instance, if a shareholder invests in a levered firm, he receives a certain pay-off from the levered firm.

Alternatively, the shareholder could borrow from the bank and invest in an unlevered firm and the pay-off would be the same as from the levered firm. MM argued that if these two alternative investment strategies will leave the shareholder with the same pay-off, managers will neither be creating nor destroying shareholders wealth by borrowing on their behalf because shareholders could do so themselves. This led MM to conclude that, the value of the unlevered firm is the same as the value of the levered firm. This MM result implies for instance that, if the levered firm is priced too high, rational investors will prefer to invest in an unlevered firm and borrow on their own account. This MM result is expressed by Ross et al (2009, pp. 436) as 'as long as individuals borrow and (lend) on the same terms as the firm, they can duplicate the effects of corporate leverage on their own'.

2.1.3 Capital structure with taxes

In the previous section we concluded that debt is irrelevant to profitability and value because MM ignored the tax advantage of debt

among other assumptions. In this section, we add tax to the MM propositions to show how firm's profitability and value will change. We start by first criticising MM's assumptions to give us a reason to remove them. Unrealistic MM assumptions MM came under various criticisms later because their assumptions largely proved unrealistic. The assumption of a tax free economy is unrealistic because there is hardly any country in the world that is tax free. For instance Ghana is not a tax free economy. The assumption of no transaction costs and efficient markets are also very unrealistic because most investors use advisors who charge brokerage fees for their services. Even if an investor does not use the services of a broker he still incurs cost like communications, transport costs and other related costs before making their investments. MM ignored the possibility of a financial distress but evidence around the world show this is an unrealistic assumption. For instance Enron and WorldCom, who were actually in financial distress but tried to cover up through fraudulent financial reporting, eventually went into bankruptcy in early 2000s. The advent of the world economic downturn also saw many businesses collapse around the world. All these show that MM assumptions are unrealistic. Taxes and MM proposition I MM had to backtrack subsequently, in 1963 after the receipt of several criticisms. This led to the relaxing of their 'tax free economy assumption'.

The result was that debt financing is now a relevant factor in determining firm's profitability and value. Company tax a relevant variable to debt policy because interest cost of debt is allowed for tax purposes in many jurisdictions of the world. In Ghana, interest is tax-deductible under section 14 of the Internal Revenue Act, 2000 (Act 592). This law applies to all Ghanaian firms except those specifically exempted. Since interest payments are tax deductible, it reduces company tax or amounts due to the government thus saving up more cash for the shareholders. This implies the tax advantage of debt leads to increasing returns on equity (ROE) and value. For instance, assuming corporate tax is 25%, then every cedi (Cedi is the Ghanaian currency) of debt would add at least 25 pesewas (pesewas is the Ghanaian currency in decimals) to the value of the firm. Therefore debt is relevant to value once the tax benefit is recognized.

2.1.4 Financial distress

When a firm is facing financial difficulties we say it is in financial distress. Bankruptcy occurs when in principle the value of the firm's assets equals the value of its debt (Ross, Westerfield, & Jordan, 2001) or equivalently, equity has no value. Generally as a company's debt rises, so also does the probability of financial distress and eventual bankruptcy rises. Excessive use of debt capital leads to a debt crisis in which a firm finds it difficult to pay its debt. If corrective measures are not put in place in time, the firm will eventually go into bankruptcy. Firms or even countries in debt crisis could have their credit rating downgraded by a credit rating agency. This could even worsen their situation because a downgrade means the ability to pay its debt has reduced. Lenders will therefore be reluctant to lend such an organisation some more. The present value of financial distress costs is a reduction in firm's value. In this respect, financial distress costs are therefore the opposite of interest payments tax savings. In other words, it reduces firm's value just as the taxes savings increases firm's value. 'Bankruptcy cost may eventually offset the tax related gains from leverage' Ross et al (2009, pp. 460). Bankruptcy costs are direct or indirect cost. Direct costs associated with bankruptcy may include legal fees, accountancy fees and administrative fees (Brealey, Myers, & Marcus 2009). According to Ross et al (2009), by the time enron emerged from bankruptcy after filing for it in 2001, lawyers, consultants, accountants and other professionals have earned more than \$1 billion dollars in fees. There are several knock on effects of financial distress. The risk associated with a firm in financial distress frightens shareholders who demand higher returns. This increases the Cost of equity as shareholders demand higher returns. Shareholders investments become more risky because they are only entitled to a residual after the debt holders have been paid (Ehrhardt & Brigham, 2009). This also increases the cost of equity during periods of financial distress. Also, when firms are in financial difficulties their value and profitability fall because the fear of bankruptcy and the costs that go with it move the shareholders to dispose of their shares quickly even at the lowest price possible. This results in the reduction of the firm's value and profitability during the period of financial distress. It is also important to realize that during financial distress, the cost of debt may also increase (contrary to the general view that debt is cheap) which also reduces profits before tax (Ehrhardt & Brigham, 2009). This might happen due to the fact that creditors, also

perceiving the possibility of the company's inability to pay them, demand higher interest rates. Thus raising the cost of debt and lowering profitability. Other effects of increasing company's leverage as explained by Ehrhardt & Brigham (2009) include the possibility of falling free cash flows and profitability because customers perceiving risk could take their business elsewhere (Ehrhardt & Brigham, 2009). Employees on the other hand begin to worry about their current jobs and waste valuable productive time pursuing or thinking about future jobs (Ehrhardt & Brigham, 2009). Suppliers also tighten their credit standards resulting in falling accounts payable and increasing net operating working capital which in turn reduces cash flows (Ehrhardt & Brigham, 2009). The above analysis shows that despite the tax advantage of debt, increasing debt to equity ratios can bring grave consequences for the firm. Firms must therefore increase their debt to equity ratios with care bearing in mind the possibility of bankruptcy. The fear of going bankrupt therefore deters companies from using excessive debt (Ehrhardt & Brigham, 2009). Empirically, many studies have proved that profitability and financial structure were negatively correlated. The cause may mostly be coming from the present value of financial distress costs exceeding the tax savings. In his study on capital structure and performance of SMEs in Ghana, Abor, (2007) concluded that capital structure has a negative relationship with the profitability of SMEs in Ghana. Fama & French (1998) within their work on taxes, financing decisions and value, concluded that there is a negative correlation between debt, value and profitability. They said, "on balance, negative information in debt about profitability overwhelms any tax (or other) benefits of debt." Amarjit, Nahum, Chenping, & Smita (2009) -In their research of the service industry in the United States concluded that, leverage is negatively correlated with profitability. Yogendrarajah & Thanabalasingham, (n.d.), suggested a negative correlation between profitability and Capital structure in manufacturing companies in Sri Lanka by saying that firms who finance their investment activities with retained earnings are more profitable than those who finance with debt capital. The findings of Abor & Biekpe (2007) show that profitability is significantly negative related to bank debt ratio. This brings us to the end of our second theme 'capital structure matters'. We discuss the optimal capital structure next.

2.1.5 Trade-off theory

The trade-off theory, an optimal capital structure is achieved when there is a trade-off (an offsetting situation) between the tax deductible benefits of debt (tax shield) and the risk of bankruptcy or financial distress. In other words, an optimal capital structure is achieved when the benefits and costs of debt cancel out. Jensen & Meckling, (1976 cited in Melinda & Cristina, n.d.), stated that, 'firms select optimal capital structure by examining the net tax advantage of debt financing by comparing debt advantages'. This implies that the optimal capital structure is the one that gives the best tax advantage to the firm. The optimal capital structure under the trade-off theory is therefore the capital structure level that maximizes the tax benefits of debt and minimizes the costs of financial distress.

2.1.6 Pecking order theory

Another approach to the optimal capital structure study is the pecking order theory. According to Brealey, Myers, & Marcus (2009), in applying the pecking order theory, management prefers internally generated funds to externally generated ones. If external debt is ever required, debt finance is preferred to equity finance. In other words, managers rank their order of financing in order of internally generated finance, and then externally generated finance with debt ranking before equity. Managers use this order or ranking in an attempt to preserve the value of the firm and more importantly to counter the wrong signals of issuing equity in the first place. Managers must rank the order of generating funds this way because, when a firm requires capital, issuing shares may send the wrong signals that can lead to a fall in firm value. When new shares are issued, investors suspect the shares may be overpriced and refuse to buy, thus bringing down the value of the shares (Brealey, Myers, & Marcus 2009). This is usually caused by a misunderstanding of the current profitability and future prospects of the firm. Investors get this signals from the issue of shares because, rational people would not sell anything for less than its value, so the true value of the shares (in the thinking of the shareholder) might be lower than what management is selling for now, Ehrhardt & Brigham (2009). Managers try to avoid such (probably wrong) signals to shareholders by using internal funds as much as possible. Managers are led to prioritize their source of funds because of this signalling theory, to maximize profitability and value.

2.1.7 Agency theory

One other theory used to predict the optimal structure is the agency theory. Since shareholders are separated from the management of businesses, an agency relationship is created. This also creates a conflict of interest situation called the agency problem. According to the agency problem, whilst managers seek their own best interest, shareholders will be expecting them to work towards maximising the value of their investment. We find that these opposing interests can eventually lead to situations that predicts the optimal capital structure. The agency problem leads to indiscriminate expenditure by managers who have enough cash at their disposal. This supported by Ehrhardt & Brigham, 2009, when they stated that, the agency problem is created because management may have enough cash to spend on their pet projects rather than on value maximizing projects. For instance, managers with excess cash may spend them on things like flashy offices, corporate jets, and things of that nature which does little to maximize shareholders wealth, (Ehrhardt & Brigham, 2009). On the other hand, managers with very little cash are not in the position to be that wasteful. The central issues in agency theory are therefore how to resolve the 'fight' for the control of firm resources between managers and shareholders (Roy & Mingfang). Some theories have suggested a strategy of increasing the use of debt capital in order to reduce the agency cost problem. Abor (2007) study concluded that, agency issues may have led SMEs to pursue high debt policies leading to lower performance. The reason for this is that, the risk of financial distress from increasing the use of debt may encourage managers to reduce wasteful spending. According to (Roy & Mingfang), the agency problem suggests the use of debt contracts as the main means of transferring wealth to investors. This may be because, it deters wasteful spending, and therefore increasing amounts available to shareholders. Again, according to (Roy & Mingfang), the use of debt makes wasteful management focus on debt repayments in order to avoid bankruptcy from the inability to pay. The survival of the business therefore becomes a big concern for managers.

2.2 Empirical review

Charles, Joseph, Sang, Cheruiyot, Joseph, (2014) result showed that there is a significant positive relationship existing between the short term debt and profitability and statistically significant negative relationship between long term debt and profitability. The results are partially consistent with the previous studies as the negative relationship between long term debt and the firm performance tends to sport the dominant pecking order theory. The association of short term debt and the financial performance in contrast attests the static trade-off theory. Total debt as a whole has no association with the firm's performance because of the inherited different characteristics of short term debt and long term debt. Ude, Alexander Onyebuchi (2016) result showed that there is that management needs to pay serious attention to the composition of the firm's financial structure. This is because the failure to achieve an optimal financial structure may lead to influence and financial distress which may result to bankruptcy. The conclusion is that the researcher identified firms' value parameters and used them to determine the firms' performance with the use of debt in financing the firms operations. The recommendation is that the firm management should ensure that there is properly financed in a way that it will enhance full utilization of the firm's assets. Mohammad and Jafer (2012) the results showed that there is significantly negative relation between debt and profitability. This suggests that profitable firms depend more on equity as their main financing option. Yet recommendations based on findings are offered to improve certain factors like the firm must consider using an optimal capital structure and future research should investigate generalizations of the findings beyond the manufacturing sectors.

Charles Dioha (2017) the result showed that the results from the study showed that long-term debt finance had a significant negative effect on profitability of listed agricultural companies in Nigeria. The study concluded that long-term debt in the capital structure of the agricultural companies should be kept at a moderate level to improve their profitability. The study recommends that agricultural companies should be mindful of the level of debt they incur into their businesses so as to avoid it having a negative effect on profitability. Huynh Phuong Dong and Jyh-tay Su (2010) results showed that there is a strong negative relationship between profitability, measured through gross operating profit, and the cash conversion cycle. This means that as the cash conversion cycle increases, it will lead to declining of

profitability of firm. Therefore, the managers can create a positive value for the shareholders by handling the adequate cash conversion cycle and keeping each different component to an optimum level. Albert, Michael and Daniel (2013) results showed that there is a statistically significant positive relationship between profitability and short term debt and a significantly negative relationship between profitability and long term debt. However, the results revealed a statistically negative relationship between profitability and total debt contrary to Abor (2005) study. The results also revealed that, Ghanaian listed firms relied more on short term debt than long term debt. The average short term debt to total capital ratio was 52% and long-term debt to total capital ratio was 11%. HMDN Somathilake (2020) results showed that long-term debt has significant impact on return on assets, but short-term debt and total debt have an insignificant impact on return on assets. However, long-term debt has significant impact on return on equity. And also short-term debt and total debt have an insignificant impact on return on equity. Finally, it was found that long term debt financing significantly effects on profitability of listed manufacturing companies in Sri Lanka and recommends to the maintaining optimal capital structure is very important for managers to balance their source efficiently.

3. RESEARCH METHODOLOGY

We use a panel regression model for the estimation in this study. Panel data involves the pooling of observations on a cross-section of units over several time periods. A panel data approach is more useful than either cross-section or time-series data alone. One advantage of using the panel data set is that, because of the several data points, degrees of freedom are increased and collinearity among the explanatory variables is reduced, thus the efficiency of economic estimates is improved.

Table 1. Measurement of Variables

Variables & Codes	Type of Variable
Firm size (FIS)	Dependent
Total debt (TDR)	Independent
Tobin's q (TBQ)	Independent
Long term debt (LTDR)	Independent
Profitability (PRF)	Independent
Asset growth (ASG)	Control
Tangibility (TANG)	Control

3.1 The model

3.1.1 Model Specification

The model formulated for this study is given as thus:

$$FIS = f(\beta_0 + \beta_1TDR + \beta_2TBQ + \beta_3LTDR + \beta_4PRF) \quad (1)$$

Where:

FIS = Firm size;

Bo = Constant term (intercept);

B1 =Coefficients to be estimated for firm i in period t;

B2 =Coefficients to be estimated for firm i in period t;

B3 =Coefficients to be estimated for firm i in period t;

B4 =Coefficients to be estimated for firm i in period t;

TDR = Total debt;

TBQ = Tobin's q;

LTDR = Long term debt;

PRF = Profitability.

All variables are as previously defined. β_0 is the coefficient (constant), $\beta_1 - \beta_4$ are parameters of the independent variables to be estimated, μ is standard error, t stands for the different time period under study while i = different the firms under study.

3.2 Data source and sample

The study will make use of dataset generated from financial statements of quoted companies in Nigeria. The arising data are sourced from the Nigerian Stock Exchange. These sources are, incidentally, legal depositories of financial statements of companies incorporated in Nigeria. However, 30 quoted firms will be selected for the study and observations from the 30 firms over a 10-year period (2011-2020) constitute the sample of the study. Key variables used in the regression estimation include firm size and firm-age as dependent variables. In the regression estimation equation, financial leverage, profitability, total asset will serves as the independent variable, while the others constitute the independent variables.

Table 2. List of Companies Sampled for the Study

S/N	Company's Name	S/N	Company's Name
1	Cadbury Nigeria Plc	6	Lafarge Africa Plc
2	Dangote Cement Plc	7	Nigerian Breweries Plc
3	Flour Mills of Nigeria Plc	8	PZ Cussons Plc
4	Guinness Nigeria Plc	9	Total Plc
5	Nestle Nigeria Plc	10	Unilever Nigeria Plc

4. EMPIRICAL RESULT

Table 3. Regression analysis output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.949512	0.280173	6.958250	0.0000
LTDR	0.926967	0.015557	59.58424	0.0000
R-squared	0.973138	Mean dependent var		18.57439
Adjusted R-squared	0.972864	S.D. dependent var		1.544767
S.E. of regression	0.254470	Akaike info criterion		0.120529
Sum squared resid	6.345986	Schwarz criterion		0.172633
Log likelihood	-4.026468	Hannan-Quinn criter.		0.141617
F-statistic	3550.282	Durbin-Watson stat		0.430171
Prob(F-statistic)	0.000000			

Source: EViews Output

Empirical findings of the pooled ordinary least square (OLS) from table 1 indicate that only LTDR follow the expected sign. LTDR was significant at five percent (5%) probability. The result obtained shows that 1.949512 is the part of LROA that does not depend on any of the explanatory variables. A percentage change in LTDR will lead to 0.9% increase in LROA. $R^2 = 0.973138$; this measures the goodness of fit of the model. The figure indicates that 97% of the variations in the dependent variable (ROA) are explained by the independent variable LTDR. This suggests a very high explanatory power of the model. Adjusted $R^2 = 0.972864$; this is used to correct for the tendency of R^2 to exaggerate the fitness of the model as more explanatory variables are being added. It shows that the explanatory variables have been able to explain 97% of the dependent variable. The f-statistic of 3550.282 with the probability value of 0.000000 implies that all the explanatory variables used in the model are relevant. The Durbin-Watson statistic ($d = 0.430171$) is within the acceptable range. This means there is no autocorrelation in the model. Lastly, the probability test is used to test the hypothesis also. The probability value of 0.0000 means that LTDR is statistically significant in determining LROA at 5% level of significant.

Table 4. Regression Analysis Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.888961	0.405800	7.119175	0.0000
LSTDR	0.895404	0.023061	38.82697	0.0000
R-squared	0.938961	Mean dependent var		18.57439
Adjusted R-squared	0.938338	S.D. dependent var		1.544767
S.E. of regression	0.383593	Akaike info criterion		0.941329
Sum squared resid	14.42009	Schwarz criterion		0.993433
Log likelihood	-45.06647	Hannan-Quinn criter.		0.962417
F-statistic	1507.534	Durbin-Watson stat		0.727840
Prob(F-statistic)	0.000000			

Source: EViews Output

Empirical findings of the pooled ordinary least square (OLS) from table 2 indicate that only LSTDR follow the expected sign. LSTDR was significant at five percent (5%) probability. The result obtained shows that 2.888961 is the part of LROA that does not depend on any of the explanatory variables. A percentage change in LTDR will lead to 0.89% increase in LROA. $R^2 = 0.938961$; this measures the goodness of fit of the model. The figure indicates that 93% of the variations in the dependent variable (ROA) are explained by the independent variable LTDR. This suggests a very high explanatory power of the model. Adjusted $R^2 = 0.938338$; this is used to correct for the tendency of R^2 to exaggerate the fitness of the model as more explanatory variables are being added. It shows that the explanatory variables have been able to explain 93% of the dependent variable. The f-statistic of 1507.534 with the probability value of 0.000000 implies that all the explanatory variables used in the model are relevant. The Durbin-Watson statistic ($d = 0.727840$) is within the

acceptable range. This means there is no autocorrelation in the model. Lastly, the probability test is used to test the hypothesis also. The probability value of 0.0000 means that LSTD is statistically significant in determining LROA at 5% level of significant.

Table 5. Regression Analysis Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.527960	0.508297	10.87545	0.0000
LLTDR	0.784898	0.030397	25.82178	0.0000
R-squared	0.871856	Mean dependent var		18.57439
Adjusted R-squared	0.870548	S.D. dependent var		1.544767
S.E. of regression	0.555798	Akaike info criterion		1.682973
Sum squared resid	30.27331	Schwarz criterion		1.735077
Log likelihood	-82.14867	Hannan-Quinn criter.		1.704061
F-statistic	666.7643	Durbin-Watson stat		0.488503
Prob(F-statistic)	0.000000			

Source: EViews Output

Empirical findings of the pooled ordinary least square (OLS) from table 4.3 indicate that only LLTDR follow the expected sign. LLTDR was significant at five percent (5%) probability. The result obtained shows that 5.527960 is the part of LROA that does not depend on any of the explanatory variables. A percentage change in LLTDR will lead to 0.78% increase in LROA. $R^2 = 0.871856$; this measures the goodness of fit of the model. The figure indicates that 87% of the variations in the dependent variable (ROA) are explained by the independent variable LLTDR. This suggests a very high explanatory power of the model. Adjusted $R^2 = 0.870548$; this is used to correct for the tendency of R^2 to exaggerate the fitness of the model as more explanatory variables are being added. It shows that the explanatory variables have been able to explain 87% of the dependent variable. The f-statistic of 666.7648 with the probability value of 0.000000 implies that all the explanatory variables used in the model are relevant. The Durbin-Watson statistic ($d = 0.488503$) is within the acceptable range. This means there is no autocorrelation in the model. Lastly, the probability test is used to test the hypothesis also. The probability value of 0.0000 means that LLTDR is statistically significant in determining LROA at 5% level of significant.

Table 6. Regression Analysis Output

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.769847	0.621609	10.89084	0.0000
LPROF	0.739590	0.038717	19.10263	0.0000
R-squared	0.802159	Mean dependent var		18.55984
Adjusted R-squared	0.799961	S.D. dependent var		1.586398
S.E. of regression	0.709529	Akaike info criterion		2.173068
Sum squared resid	45.30878	Schwarz criterion		2.227889
Log likelihood	-97.96111	Hannan-Quinn criter.		2.195194
F-statistic	364.9106	Durbin-Watson stat		0.529516
Prob(F-statistic)	0.000000			

Source: EViews Output

Empirical findings of the pooled ordinary least square (OLS) from table 4.4 indicate that only LPROF follow the expected sign. LPROF was significant at five percent (5%) probability. The result obtained shows that 6.769847 is the part of LROA that does not depend on any of the explanatory variables. A percentage change in LPROF will lead to 0.73% increase in LROA. $R^2 = 0.802159$; this measures the goodness of fit of the model. The figure indicates that 80% of the variations in the dependent variable (ROA) are explained by the independent variable LPROF. This suggests a very high explanatory power of the model. Adjusted $R^2 = 0.799961$; this is used to correct for the tendency of R^2 to exaggerate the fitness of the model as more explanatory variables are being added. It shows that the explanatory variables have been able to explain 79% of the dependent variable. The f-statistic of 364.9106 with the probability value of 0.000000 implies that all the explanatory variables used in the model are relevant. The Durbin-Watson statistic ($d = 0.529516$) is within the acceptable range. This means there is no autocorrelation in the model. Lastly, the probability test is used to test the hypothesis also. The probability value of 0.0000 means that LPROF is statistically significant in determining LROA at 5% level of significant.

Table 7. Correlation

	LROA	LTDR	LSTD	LLTDR	LPROF
LROA	1.00000	0.987171	0.96899	0.945210	0.89563
LTDR	0.987171	1.00000	0.981508	0.957425	0.875431
LSTD	0.96899	0.981508	1.00000	0.89204	0.852133
LLTDR	0.945210	0.957425	0.89204	1.00000	0.85830
LPROF	0.89563	0.875431	0.852133	0.85830	1.00000

Source: EViews Output

From the correlation matrix above, it can be seen that variables are highly correlated. But this is not a problem because they are less than 1 and Blanchard cited in Gujarati (2003) said “we should do nothing”. Since the variables are core variables dropping any of the variable will lead to specification bias which will violate BLUE properties of the OLS estimators.

5. CONCLUSIONS AND IMPLICATIONS

The broad objective of this study is to examine the Impact of debt financing on the profitability of non-financial firms in Nigeria. Based on the estimated results presented, it is evident that debt financing for firms is a major determinant of firm's profitability in Nigeria. With this empirical evidence, LTDR, LSTD, LLTDR, LPROF is statistically significant in determining the profitability index of the firms in Nigeria. Essentially, about 69% of the variation in the dependent variable is explained by the model. Therefore, the impact of debt financing on the firm's profitability is positive and strong. A well-managed capital structure in terms of debt financing, leads to an increase in the profitability of the firms as showed in the analysis in the table 1.

REFERENCES

- Abor. J. & Biekpe. N. (2007) Small Business reliance on banking and finance in Ghana. *Emerging Markets Finance and Trade*. Vol. 43. No. 4 pp 93-102
- Abor. J. (2005) the effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *Journal of Finance*. Vol. 6 No 5 pp438-445.
- Abor. J. (2007) Debt policy and performance of SMEs; Evidence of Ghanaian and South African Firms. *Journal of Risk Finance*. Vol. 8. No. 4 pp 364-379.
- Brealey. R. A. Myers S. C. & Marcus. A. J. (2009) *Fundamentals of Corporate finance*. 6th ed. pp 440-463. New York McGrawHill/Irwin
- Ehrhardt. M. C. & Brigham. E. (2009) *corporate finance: A focused approach*. Cengage Learning Inc.
- Fama, & French. (1998, June). *financeprofessor.com*. [Internet], Available from: <http://www.financeprofessor.com> [Accessed November 7, 2011]
- Jensen, M. & Meckling, W. (1976). Theory of the Firm; Managerial behaviour, Agency Costs and Ownership Structure. *Journal of Financial Economics*, Vol. 03; 306- 360.
- Ross. S. & Jordan D (2001) *Essentials of Corporate Finance*. 3rd ed. New York. McGraw-Hill Irwin
- Roy S. and Mingfang, L. (2000). Environmental dynamism, capital structure and performance. A theoretical integration and an empirical test. *Strategic Management Journal* No. 21 p. 86-100
- Ude Onyebuchi (2016) Effects of Debt Financing On Financial Performance of Firms Quoted On the Nigeria Stock Exchange
- Westerfield. Et al (2009) *Essentials of Corporate Finance*. Core Principles and application 2nd Ed. New York. McGraw-Hill.
- Yogendrarajah. R. & Thanabalasinghan. S (nd) the effect of profit margin on capital structure: manufacturing companies of Colombo Stock Exchange