

## Long Term Debt Financing and Firm Financial Performance in Nigerian Listed Firms

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**ABSTRACT:** *The study examines long term debt financing and financial performance of listed manufacturing firms in Nigeria. This study employed an ex-post facto research design. The sample used for the research consists of 75 non-financial firms listed on the Nigerian Exchange Group. The time period covering is from 2010-2019. The panel regression is employed for the inferential analysis. On the overall, the study finding reveals that LTDE has significant positive impact on ROE but insignificant in relation to TOBINQ while LTDA has a significant negative impact on ROE as well as with Tobin q. The study recommends the need for firms to engaged long term debt productively and reduce the agency cost that accompanies debt financing such as the opportunity for managerial opportunism and inefficient use of debts due to their long maturity characteristic.*

**KEY WORDS:** Long Term debt, financial Performance, Panel regression

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### INTRODUCTION

Financing structure decision is an area that is of interest to a diverse range of stakeholders in a firm ranging from management, creditors, shareholders and investors amongst others. Financing structure refers to the different options used by a firm in financing its assets. It describes ‘the proportion of a company’s capital, which is obtained through debt and equity or hybrid securities. The goal of a company’s financial structure decision is to maximize the gains for the equity shareholders. As a company grows and becomes profitable, it can obtain more of its capital from debt sources. Although the idea of debt as a homogeneous source of funds is a solid theoretical construction and a useful first step, however, the nature of the debt and its incentive properties may differ accordingly In this study, the focus is on long term debt. Long-term debt is financing is a type of financing that has a repayment or maturity term of more than one year and companies often use such arrangements to finance their capital formation.

Pelham (2000) argued that this form of financing has many benefits such as lower financing costs, it is mostly structured and stable over time. It is argued that firms' ability to obtain long-term financing tends to be greater in countries with a contestable, well-regulated banking system and with developed capital markets. Weakness in the contractual environment is an important underlying reason why long-term debt is less common in developing countries. When lenders cannot rely on legal institutions to enforce their claims to loan repayment, they may prefer to lend short term, so that the continued need for renegotiation provides incentives for borrowers to exert effort and make sound investments.

Although long debt can be used to increase shareholder return, it can also cause agency problems as discussed by Jensen and Meckling (1976). Firms tend to match the maturity of their assets and liabilities, and thus they often use long-term debt to make long-term investments, such as purchases of fixed assets or equipment. Long-term finance also offers protection from credit supply shocks and having to refinance in bad times. However, the theoretical literature is inconclusive on how the maturity structure of debt financing affects firm performance. On the one hand, long-term debt finance is likely to have a positive effect on investment and performance for firms that need it since it allows firms to invest in projects that bring in returns in a relatively long time horizon. On the other hand, long-term finance can distort managers' incentives, hampering investment and firm performance. Thus, the existence of a link between a firm's long term debt financing and financial performance though has been a hotly debated area of accounting research, the results are still mixed. For example, Muhammad, Shu and Muhammad (2022) study indicated that profitability have positive association with debt level. Umobong and Ayebanengiyefa (2019) indicate Significant positive relationship between Long term debt to total asset and Tobin Q and earnings yield. However, Maniagi, Mwalati, Ondiek, Musiega, and Ruto (2013) noted that long term debt has a weak positive insignificant relationship with ROE. Dang, Bui, Dao & Nguyen (2019) found that long term debt ratios can significantly and negatively affect ROA. Further, EBaid (2009) revealed that there was no significant relationship between long term debt and financial performance measured using the return on assets. The objective of the study is to examine the implications of long term debt for financial performance of listed non-financial firms in Nigeria.

## LITERATURE REVIEW

### Long-Term Debt

The long-term debt financing is a measurement representing the percentage of a corporation's assets financed with long-term debt, which encompasses loans or other debt obligations lasting more than one year. This ratio provides a general measure of the long-term financial position of a company, including its ability to meet its financial obligations for outstanding loans. A year-over-year decrease in a company's long-term debt-to-total-assets ratio may suggest that it is becoming progressively less dependent on debt to grow its business (Graham & Harvey 2001). This ratio shows the percentage of a company's assets that are financed with loans and other financial

obligations that last over a year. As this ratio is calculated yearly, decrease in the ratio would denote that the company is faring well, and is less dependent on debts for their business needs. Although a ratio result that is considered indicative of a "healthy" company varies by industry, generally speaking, a ratio result of less than 0.5 is considered good.

### **Financial Performance**

One of the core motives of engaging in business activity is to maximize profit. Thus the survival and growth of the performance of the firm (Kakanda, Salim & Chandren 2016). Firm performance connotes the idea where limited resources of organizations disposal are exploited systematically in achieving the set goal of the firm for both present and future opportunities (Marn & Romauld, 2012). However, Berger Patti (2002) believes that the performance of the firm in the opinion of the shareholders, is evaluated by how 'better off' the shareholder is at the end of the period than it was at the beginning of the period. This could be achieved using ratios derived from financial statements; mainly the statement of financial position and comprehensive income or using data on stock market price. From the management's point of view, profitability reflects the effectiveness with which management has employed both the total assets and the net assets that are recorded on the balance sheet (Moya, 2010).

### **Prior Studies and Hypothesis**

Muhammad, Shu and Muhammad (2022) examined the effect of debt on firm behavior of 167 registered manufacturing companies in G-7 countries. The sample of the study is taken from the building companies, the yearly financial statements of 2007–2018 have been taken from world stock exchange and Thomson Reuters Data Stream. In this study, regression analysis are directed with panel data over the period of 2007–2018 using ordinary least square summary statistics, correlation matrix and generalized method moments. Data were analyzed by employing E Views and Stata 13 software. The significant findings of the current study indicated that profitability have positive association with debt level.

Dang, Bui, Dao & Nguyen (2019) investigates relationship between financing structure and firm performance focusing on the group of Food and Beverage Companies in Vietnam. The dependent variables defined as ROA (return on asset), ROE (return on equity) and EPS (earning per share), which refer to firm performance. By using the unbalanced panel data of 605-observation from 61 listed companies in this industry, long term debt ratios can significantly and negatively affect ROA.

Alhassan (2017) examined the effect of financing structure on profitability (measured as Return on Assets and Return on equity) of commercial banks in Ghana. The study sampled 23 banking over a six-year period from 2010 to 2015 and extracted data from the annual of these banks. Data was analysed using descriptive statistics, correlation analysis as well as panel regression analysis. The results showed that banks in Ghana are highly leveraged with debt financing constituting 84% of total capital out of which 77% is short term debt despite the increase in minimum equity capital

of these banks. The regression analysis revealed that long term debt ratio are negatively related with profitability of banks in Ghana.

Anafo, Amponteng, & Yin (2015) examine the impact of financing structure on leverage on profitability of listed banks stock exchange Ghana from 2007 to 2013. The concept of capital structure in finance explains the way a firm finances its assets/operations by the use of a blend of debt and equity. The blend of debt and equity would make banks more profitable bearing in mind the adverse effect of the extreme of each form of financing. Data was collected from Ghana stock exchange and the annual reports of the 17 listed banks. Descriptive statistics and multiple regression models were used to analyze the data. The result revealed that Long Term Debt to Total Asset (LTDTA) also had a significant positive relationship with ROA and ROE but however, had a negative and insignificant relationship with EPS.

Grant, Ilse and Marise (2019) adopts a panel regression approach and examines the impact of financing structure on financial performance for mobile telecommunications operators based in sub-Saharan Africa. It considers eight companies with publicly available annual reports for the seven-year period from 2010 to 2016. Financial performance was measured by return on equity, return on assets, and operating profit margin whereas financing structure was measured by long-term debt to total assets ratio amongst others. The study provides evidence of a mixed impact of financing structure on financial performance. Umobong and Ayebanengiyefa (2019) examined financing structure composition and financial performance of Food and Beverage firms using data obtained from Nigeria stock exchange. Findings indicate Significant positive relationship between Long term debt to total asset and Tobin Q and earnings yield.

Adeniyi, Marsidi, Babatunji (2020) used profit after tax and earnings per share as a measure of performance and employed panel regression technique to analyse data collected from a sample of fourteen quoted commercial banks between 2009 to 2016. The result shows a significant relationship between debt and profitability of commercial banks in Nigeria. The study concludes that debt can be significantly influenced by liquidity and shareholders' wealth. Consequently, the study recommend that commercial bank managers should not depend on debt capital as a source of financing the organization financing structure but rather use retained earnings of the business and consider debt as the least alternatives. In the light of the above, the study specifies the null hypothesis as follows;

H<sub>0</sub>1: Long term debt financing as no significant impact on financial performance of manufacturing firms in Nigeria.

### **Theoretical Review: The Static Trade-Off Theory**

This theory looks at the trade-off between tax benefit of debt and the costs of bankruptcy. It argues that while investment decision and firm assets are held constant, an optimal financing structure is attained when the tax benefit of debt equals to leverage associated costs which include financial

distress, bankruptcy and agency (Myers, 2001). Firms will use debt as much as possible but watch out for any disadvantage that may arise as a result of a bankruptcy. This is the point at which the tax saving from any additional unit of debt exactly equal to the cost which arises from an increase in the financial distress probability (Sheikh & Wang, 2011). The theory assumes the existence of different target leverage for different firms due to firm's specific factors and also believe that firms are already at their presumed targets (Myers, 2001).

The study is anchored on the static trade-off theory and this is so because in the context of this study, this theory implies that for companies to continue to perform financially well and not face distress, their financing structure is germane and hence managers have to ensure an optimal financing structure and this decision according to the theory will depend on the trade-off between tax benefit of debt and the costs of bankruptcy. Hence the theory directly identifies that an optimum financing structure is at the core of corporate survival and this is the focus of the study to examine what kind of financing mix will be beneficial for financial performance of companies

## METHODOLOGY

This study employed an ex-post facto research design. This is a form of research design in which the researcher speculates on the potential causes of an observed result. The population of the study comprises of non-financial firms quoted on the floor of the Nigerian Stock Exchange. As at December 2019, there are 75 non-financial firms quoted on the stock exchange (NSE, 2020). Uniquely so, the population for the study is also the sample to be used for the research and hence the study used the census sampling technique. Secondary data was used for this study. The data was retrieved from corporate annual reports of the sampled quoted on the Nigeria Stock Exchange companies for the period 2010-2019 financial years. The effect of long term debt financing on financial performance which is the focus of this study was analyzed using panel regression. Panel data regression is chosen because of the multidimensional nature of the data which has both time or periodic dimension and also cross-sectional dimension.

The focus of the study is to examine the impact of long term debt financing on financial performance of listed manufacturing firms in Nigeria. The models are presented below; Specifying the panel regression models for the study, we first present the functional model;

$$ROE_{it} = \beta_{it} + \beta_1 LTDA_{it} + \beta_2 LTDE_{it} + \beta_3 TETA_{it} + \mu_{it} \text{----- (i)}$$

$$TOBIN-Q_{it} = \beta_{it} + \beta_1 LTDA_{it} + \beta_2 LTDE_{it} + \beta_3 TETA_{it} + \mu_{it} \text{----- (ii)}$$

Where. ROA = Return on equity measured as ratio of profit after tax to total asset, TOBINQ = Tobin Q Ratio, LTDE= Long term debt-asset ratio, TETA= Total Equity-asset ratio, LTDA= Long term debt-equity ratio = error term

**PRESENTATION OF RESULTS**

Table 4.1 Descriptive Statistics

	Mean	Max	Min	Std. Dev.	Jarque-Bera	Prob
LTDE	41.92	68.736	0.48399	5496.219	15802696	0.00
LTDA	18.720	192.2804	0.65	27.447	90150.05	0.00
ROE	10.97	67.14	-0.35	2591.19	15271171	0.00
TOBQ	1.5277	11.2986	0.1241	1.3639	4743.93	0.00
TETA	19.046	77.1054	0.00	15.403	194.3145	0.00

Source Researcher's Compilation (2022)

The descriptive statistics for the variables in this study is presented in table 4.1 and as observed, LTDE stood at 41.92 which indicate a very high proportion of long term debt as a ratio of total equity with maximum and minimum values of 68.746 and a minimum of 0.4834 respectively. The standard deviation is large at 5496.219 and indicates that significant dispersion of LTDE of the individual firms from the mean. ROE has a mean of 10.97 with maximum and minimum values of 67.14 and a minimum of -0.35 respectively. The standard deviation stood at 2591.19 which indicate the extent of dispersion of ROE of the individual firms from the distribution mean. TOBQ has a mean of 1.5277 with maximum and minimum values of 11.29 and a minimum of 0.1241 respectively. The standard deviation stood at 1.3639 which indicates the extent of dispersion of TOBQ of the individual firms from the distribution mean. TETA ratio has a mean of 19.046 which shows the proportion of total equity to total assets with maximum and minimum values of 77.105 and a minimum of 0.00 respectively. The standard deviation stood at 15.403 which indicate the extent of dispersion of TETA of the individual firms from the distribution mean. The Jacque-bera statistic for all the variables have p-value ( $p < 0.00$ ) indicates that the absence of outliers in the series.

Table 4.2. Correlation Statistics

Probability	LTDE	LTDA	TETA	ROE	TOBQ
LTDE	1				
LTDA	-0.028	1			
prob	0.4456				
TETA	0.025	-0.19	1		
prob	0.4974	0.00			
ROE	-0.983	0.034	-0.03	1	
prob	0.00	0.355	0.49		
TOBQ	-0.006	-0.01	-0.08	-0.01	1
prob	0.8791	0.704	0.03	0.863	

Source: Researcher's compilation (2021)



Table 4.2 shows the correlation statistics for the variables and the focus for the study is the correlations between financing mix indicators and financial performance using both accounting (ROE) and market (TOBQ) measures. The results reveals that ROE is positively correlated with LTDA ( $r=0.034$ ) though not significant ( $p=0.355$ ). Furthermore, ROE is negatively correlated with LTDE ( $r=-0.983$ ) significant ( $p=0.000$ ). The results reveals that TOBQ is also negatively correlated with LTDE ( $r=-0.006$ ) though not significant ( $p=0.8791$ ), with LTDA ( $r=-0.01$ ,  $p=0.704$ ) and with TETA ( $r=-0.08$ ) and significant ( $p=0.03$ ). Though providing some insight into the nature of the relationship between the independent and dependent variables, the correlation analysis is limited in its inferential abilities as the technique does not necessarily imply causality between the variables in a strict sense. Regression analysis is more suited for this purpose. Prior to the presentation of the regression estimation, the multicollinearity test result is first presented.

### Multicollinearity Test

C	NA
LTDE	1.541
LTDA	1.593
TETA	1.986

**Source:** Researcher's compilation (2022) using Eviews 10.

In this study, the variance inflation factor test is constructed to test for multicollinearity. Basically, the VIF explains how much of the variance of a coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. Essentially, VIFs above 10 are seen as a cause of concern as observed, none of the variables have VIF's values more than 10 and hence none gave serious indication of multicollinearity. The VIF test results for the variables reveal that all the variables have VIF values far less than 10. For example, LTDE (1.541), LTDA (1.593), and TETA (1.986). Thus, the VIF confirms that the threat of multicollinearity is non-existent and hence the results are expected to be robust and reliable.

Table 4.4. Regression Result

	ROE		TOBIN Q	
	Fixed effects	Random effects		
C	8.1301 (6.0211) {0.1174}	33.001*** (6.559) {0.000}	0.9544*** (0.0482) {0.000}	0.9826** (0.4419) {0.0265}
LTDE	0.1618*** (0.046) {0.000}	0.09271** (0.0452) {0.0407}	5.57e-06 (1.15e-05) {0.6268}	4.62e-05 (3.14e-05) {0.1761}
LTDA	-10.422*** (0.812) {0.000}	-14.8291*** (2.5323) {0.000}	-0.0501** (0.0214) {0.0193}	-0.0546*** (0.0156) {0.000}
TETA	0.123** (0.0618) {0.0471}	0.7638* (0.3964) {0.0544}	0.0003 (0.0006) {0.6186}	-0.0019 (0.0035) {0.6004}
R <sup>2</sup>	0.537	0.246	0.615	0.092
Adjusted R <sup>2</sup>	0.485	0.214	0.592	0.085
$\chi^2$ Hausman	47.953(0.000)		12.986(0.00)	
F-statistic	39.488	7822.0	39.488	12.500
Prob(F-stat)	0.000	0.000	0.000	0.000
Durbin-Watson	1.52	1.94	2.08	0.82
Model Diagnostics				
$\chi^2$ Hetero	0.0962		0.731	
$\chi^2$ Serial/Corr	0.116		0.504	
$\chi^2$ Norm	0.952		0.715	
$\chi^2$ Ramsey-Reset	0.463		0.277	

Source: Researcher's compilation (2022) \*\*\*sig @1%, \*\* sig @ 5% and \*sig @ 10%

In relation to ROE, to determine between the random effects and the fixed effects, the hausman test is used. The  $\chi^2_{\text{Hausman}}$  statistic and p-value (47.95, p=0.00) indicates that the fixed effects model estimation is the appropriate estimation for the model indicating the existence of significant correlations between firms specific disturbances and the beta's. Therefore, the fixed effects estimation is more robust and appropriate and is used for the discussion of the results. The R<sup>2</sup> for the fixed effects regression stood at 0.537 with indicates that financing mix is able to account for about 53.7% of systematic variations in the dependent variable with an adjusted value of 58.5%. The F-stat is 39.44 (p-value = 0.00) is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. It is also indicative of the joint statistical significance of the model. The analysis of coefficients reveals that LTDE ratio has a positive (0.1618) effect on the ROE which statistically significant at 1% (p=0.000). The result implies that an increase in the proportion of long term debt to total equity results in an increase in return on equity and hence the results confirms that long term debt can be beneficial in improving corporate financial performance. On the contrary, LTDA ratio has an inverse effect (-10.422) effect on the ROE which statistically significant at 1% (p=0.000). The result implies that an decrease in the proportion of long term debt to total assets results in an



increase in the return on equity and hence the results seem to suggest that lowering LTDA could be an optimal decision. Similarly, TETA ratio has a positive (0.123) effect on the ROE which is statistically significant at 5% ( $p=0.000$ ). The model diagnostics reveal that  $\chi^2_{\text{Hetero}}$  p-value ( $p>0.05$ ) implies the null hypothesis of homoscedastic behaviour of the errors is accepted and the  $\chi^2_{\text{Serial/Corr}}$  p-value ( $p>0.05$ ) also reveals the null hypothesis of no serial correlation in the residuals is accepted. In addition,  $\chi^2_{\text{Ramsey-Reset}}$  p-value ( $p>0.05$ ) reveals that the model is correctly specified. Using Tobin-Q indicator of firm performance, the  $\chi^2_{\text{Hausman}}$  statistic and p-value (12.986,  $p=0.00$ ) indicates that the fixed effects model estimation is the appropriate estimation for the model. The  $R^2$  for the fixed effects regression stood at 0.615 which indicates that financing mix is able to account for about 61.5% of systematic variations in the dependent variable with an adjusted value of 79.2%. The F-stat is 39.488 ( $p\text{-value} = 0.00$ ) is significant at 1%. The analysis of coefficients reveals that LTDE ratio has a positive ( $5.57e-06$ ) effect on the TOBINQ though not statistically significant at 5% ( $p=0.6268$ ). On the contrary, LTDA ratio has an inverse effect (-0.0501) effect on the TOBINQ which is statistically significant at 5% ( $p=0.0193$ ). The result implies that a decrease in the proportion of long term debt to total assets results in an increase in TOBINQ and hence the results seem to suggest that lowering LTDA could be an optimal decision for firms in the sample. Similarly, TETA ratio has a positive (0.0003) effect on the TOBINQ though not also statistically significant at 5% ( $p=0.6186$ ). The model diagnostics reveal that  $\chi^2_{\text{Hetero}}$  p-value ( $p>0.05$ ) implies the null hypothesis of homoscedastic behaviour of the errors is accepted and the  $\chi^2_{\text{Serial/Corr}}$  p-value ( $p>0.05$ ) also reveals the null hypothesis of no serial correlation in the residuals is accepted. In addition,  $\chi^2_{\text{Ramsey-Reset}}$  p-value ( $p>0.05$ ) reveals that the model is correctly specified.

On the overall, the study finding reveals that LTDE has significant positive impact on ROE but insignificant in relation to TOBINQ while LTDA has a significant negative impact on ROE as well as with Tobin q. The positive and negative directions of the effect of long term debt are the different sides of the same coin. On the one hand, long term financing can provide access to long term capital for firms which when effectively deployed in capital formation can improve productive capacity which justifies a positive relationship. On the other hand, the negative relationship reflects the agency cost associated with long term debts which results from opportunity for managerial opportunism and inefficient use of debts due to their long maturity characteristic. The negative effect of LTDE on Tobin Q infer that the market does not consider LTDE ratio as a positive factor for maximizing firm value. A large amount of LTDE ratio is often associated with the risk of financial distress. Hence the study rejects the null hypothesis that long term debt has no significant impact on firm financial performance. The finding is in tandem with Muhammad, Shu and Muhammad (2022), Umobong and Ayebanengiyefa (2019) Maniagi, Mwalati, Ondiek, Musiega, and Ruto (2013).

## CONCLUSION

Basically, there are several scenarios relating to the effect of long term debt on firm performance. The first scenario involves positive relation between long term debt and firm performance which

indicates when the firms depend on long debt as much as firm's needs, it will enhance their performance. The preference for being highly levered is because the cost of debt is less than equity cost and the tax advantage of debt, which would therefore maximize the firm performance. Second scenario is that of an inverse correlation between financing structure and firm performance and this occurs whenever, the firm depends on debt without employing it into profitable investments or when business and economic uncertainty alter the net present value of investments resulting in bankruptcy risks and poor firm performance. Finally, third scenario is that, there is no relationship between long term debt and firm performance. The study investigates the relationship between financing structure and financial performance of listed non-financial firms in Nigeria. On the overall, the study finding reveals that LTDE has significant positive impact on ROE but insignificant in relation to TOBINQ while LTDA has a significant negative impact on ROE as well as with Tobin q.

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