IMPACT OF CAPITAL STRUCTURE ON THE PROFITABILITY OF MANUFACTURING FIRMS IN NIGERIA

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ABSTRACT
This study examined the impact of capital structure on the profitability of manufacturing firms in Nigeria. A multiple regression of Ordinary Least Square (OLS) analytical technique was used to analyse the data. The study revealed that Long term debt and short term debts have positive impact on the profitability of listed manufacturing firms in Nigeria and were statistically significant. On the other hand, Total debt ratio to total assets and total debt to total equity ratio did not show a significant relationship to the profitability of listed manufacturing firms in Nigeria. The study concluded that there is a positive relationship between capital structure and profitability of listed manufacturing firms in Nigeria. The study recommends that the regulatory authority such as SEC should make it mandatory for listed manufacturing firms in Nigeria to have some optimum level of leverage in their capital structure financing.

Keywords: Capital Structure; profitability; optimum capital mix

Introduction
Background of the Study
Determining the best financing mix or capital structure for a firm is one of the most debatable topics among researchers in the past decades. Capital structure serves as one of the most important variables considered by firms, when considering financial performance (Ajibola, et al., 2018). A firm that has no debt in its capital structure is referred to as an unlevered firm, whereas a firm that has debt in its capital structure is referred as levered. In the financing decision the manager is concerned with determining the best financing mix or capital structure for his firm. Capital structure involves the decision about the combination of the various sources of funds a firm uses to finance its operations and capital investments (Dahiru, 2016).

A firm's capital structure refers to the mix of its financial liabilities. It has been an important issue from the strategic management standpoint since it is linked with a firm's ability to meet the demands of various stakeholders (Uremadu and Onyekachi 2019). Also when there is good firm performance and capital structure, there will be proper and efficient practice in the administration of business entities. The choice between debt and equity for a business firm has implications on the value of a firm as well as strategic importance for corporate managers. Ghosh, (2008) stated that one of the objectives of capital structure is to ensure that firms are financed by lower cost of capital mix, in order to ensure that shareholders' wealth is maximized. It is also one of the effective means, management uses in managing the cost of capital. Competent managers who identify the appropriate mix of debt and equity minimize the firm cost of finance, maximize the profitability and thereby improve the competitive advantage (Abeywardhana, 2015).

Capital structure has positive influence on ensuring optimal financial performance, and optimal mix of the firm's capital. According to Awan and Amin (2014), the success or failure of any firm depends upon the managerial and financial decisions made by the

management. It also results in securing and protecting the interest of the shareholders by ensuring effective planning and financial management. Capital structure assists in the combination of optimal capital structure by managers, who ensure that shareholders wealth is maximized optimally.

Dahiru (2016) opined that the use of debt in an organizations' capital structure has both positive and negative effects on its profitability. Organizations that use an optimum amount of debt in their capital structure have enhanced firm value which is manifested in the form of increased sales, efficiency in production and low taxes. While firms with different cases of sub optimal use of debt in their capital structure usually suffer from a variety of financial ailments which is described as payment of high taxes, high proportions of accounts payable, large deficits in the firm's cash flow and in some cases corporate dissolution. The reason why researchers try to find the optimal capital structure is that it decreases the cost of capital and increases firm market value (Viviani, 2008).

According to Uremadu and Onyekachi (2019) Capital structure has been a major issue in financial economics ever since Modigliani & Miller showed in 1958 that given frictionless markets, homogeneous expectations; capital structure decision of the firm is irrelevant. By relaxing the assumptions and analysing their effects, the theory seeks to determine whether an optimal capital structure exists or not, and if so, what could possibly be its determinants. Capital structure decision is vital, since the profitability of an enterprise is directly affected by such decision. It is very clear from the above discussion that choosing the best capital structure for a firm is still a puzzle. Furthermore, the existing empirical studies show differing results about the determinants of capital structure in different contexts. The mixed and inconclusive findings provided the impetus for carrying out further studies in this area.

Statement of the Problem

The success of manufacturing firms in Nigeria's dynamic business environment depends on them being able to effectively determine the optimum and appropriate capital mix that is necessary to ensure that the shareholders get good returns. Manufacturing firms depend on their ability to identify, assess, monitor and manage risks in a sound and sophisticated way. In order to assess and manage risks, manufacturing firms must have effective ways of determining the appropriate amount of capital that is necessary to absorb unexpected losses arising from their market and operational risk exposures. The ongoing controversy on the issue of capital structure and profitability of firms has not been resolved. Dahiru (2016) stressed that this controversy is further narrowed down to identifying which of the variables debated is most influential in predicting and determining the capital structure of manufacturing firms. The choice of optimal capital structure of a firm is difficult to determine. A firm has to issue various securities in a countless mixture to come across particular combinations that can maximize its overall value which will mean optimal capital structure. Optimal capital structure also means that with a minimum weighted-average cost of capital, the value of a firm is maximized.

The mixed and inconclusive findings of various studies provided the motivation for carrying out further studies in this area, and owing to other identified gaps such as the study of Lawal (2014) who used total debt to total equity ratio as proxy of capital structure. The study did not cover other components or types of debt financing such as total debt to total assets, short- term debt and long-term debt. The studies of Uremadu and Onyekachi (2019), (Ajibola, et al.,2018), Nyeadi, et al., (2017) and Dahiru, (2016**)** also failed to capture all the variables in capital structure. It is against this backdrop that a study that will cover the various forms of financing mix is now desirable.

Objectives/Purpose of the Study

The general objective of this study is to examine the impact of capital structure on the profitability of listed manufacturing firms in Nigeria. Specifically, the study sought to:

i. Determine the extent to which total debt to total asset ratio affects profitability of listed manufacturing firms in Nigeria;
ii. Examine the effect of total debt to total equity ratio on profitability of listed manufacturing firms in Nigeria;
iii. Assess the impact of short-term debt to total assets ratio on profitability of listed manufacturing firms in Nigeria;
iv. Evaluate the influence of long-term debt to total assets ratio on profitability of listed manufacturing firms in Nigeria.

Research Questions

(i) To what extent does total debt to total asset ratio affect the profitability of listed manufacturing firms in Nigeria?
(ii) To what extent does total debt to total equity ratio affect the profitability of listed manufacturing firms in Nigeria?
(iii) To what extent does short-term debt to total assets ratio affect the profitability of listed manufacturing firms in Nigeria?
(iv) To what extent does long-term debt to total assets ratio affect the profitability of listed manufacturing firms in Nigeria.

Significance of the Study

This study adds to existing body of knowledge on capital structure. It will help managers in maximizing investors' return; owners will use it in making informed decisions on their invested funds, while creditors will use it in ascertaining credit worthiness of a manufacturing firm in Nigeria.

The government and its agencies will also benefit immensely from the result of this study because they will use the findings of this study to formulate more favorable financial and economic guidelines or policies which will sustain the operations of Nigerian Manufacturing firms, especially the potential firms yet to be quoted on the Nigerian Stock Exchange (NSE).

Above all, the findings of this research work will serve as a good reference material for future research especially to the academic community.

Literature Review

The main purpose of this research work is to assess the impact of capital structure on the profitability of listed manufacturing firms in Nigeria. This section reviews related works on the topic under investigation. The section is divided into four subsections. The first sub-section centred on conceptual framework, the second theoretical framework the third review of empirical works.

Concept of Capital Structure

There is no single definition of capital structure that is generally accepted by researchers just as other concepts in finance. Capital structure is essential to how a firm finances its overall operations and growth, using different sources of funds (Uremadu and Onyekachi, 2019). Different scholars and researchers have looked at the concept of capital structure in varying dimensions. As financial capital is an uncertain but critical resource for all firms, suppliers of the finance are able to exert control over firms. Equity holders are the residual claimants of all the business' returns, bearing most of the risk and having greater control over decisions. All these capital structure decisions affect the profitability of the firm.

Capital structure is the specific mixture of debt and equity finance that a firm uses in its operations (Nyeadi, et al, 2017).

Long term debt will bring about increase in the desire of the firm when there is a decrease in the rate of interest. When there is an increase in leverage, it will provide an upsurge in financial distress. An increase in leverage of the firm will lead to the firm's stock being unattractive to investors, as a result of increase in financial distress (Ajibola, et al, 2018). Firms might find it difficult to satisfy a required service obligation, which could lead to not only administrative expenses and legal expenses but also bankruptcy. Leverage depicts the sensitivity of equity ownership in line with fluctuations in the fundamental value of an entity. Uremadu and Onyekachi (2019) posit that capital structure shows how a company finances its overall operations and growth by using different sources of funds. Capital structure of firms varies with its size, type and some other characteristics or determinants such as age of company, company size, asset structure, profitability, company growth, company risk and liquidity.

Theories of Capital Structure

Financing decisions of the firm may be influenced by many factors; many of which are explained by different capital structure theories. Each capital structure theory has its own specific assumptions, and cannot fully explain financing decisions. Only three of these theories are considered here: **Modigliani Miller Irrelevance Theory, Pecking order theory, Trade off Theory.** This study is anchored on these theories stated.

Modigliani Miller Irrelevance Theory: It was Modigliani and Miller (1958) who formed the basis of the first capital structure theorem. They (1958) argued that the capital structure of a firm is irrelevant to the firm's value, assuming perfect markets and zero transaction costs. Modigliani-Miller (1958) theorem is considered the greatest breakthrough in theory of optimal capital structure. Their theory sees capital structure as the result of mainly financial, tax and growth factors (Modigliani and Miller, 1958). Modigliani and Miller (1963) reviewed their previous theory, included tax advantages in the theory as a determinant of capital structure and concluded that firms use debt financing to make use of tax advantages, and to maximize firms' market value, more debt has to be used in the capital structure. Moreover, Miller (1977) identified three tax rates that influenced total market value of a firm and concluded that firms' market value depends on the relative levels of each of these tax rates. Thus, capital structure has no effect on firms' market value, even by considering taxes. The value of a firm is the same regardless of whether it finances itself with debt or equity.

The assumptions of Modigliani- Miller theorem are; Perfect and frictionless markets; no transaction costs; no default risk, no taxation; both firms and investors can borrow at the same interest rate; there is homogeneous expectation; homogeneous risk and equal access to all relevant information. The capital structure is relevant to the firm value and firms are able to maximize firm value by raising debt level in their capital structure (Sabin and Miras, 2015). Nirajini and Priya (2013) show support to this theory, a positive relationship between debt and firm performance. M&M theory (1858 and 1963) was criticized as unrealistic due to the impractical assumption (Sabin and Miras, 2015). Imperfect capital market, transaction cost and bankruptcy cost exist in the real world and lead the M&M's theory to be limited in applicability.

The Trade-off Theory: Myers (1984), proposed the Trade-off Theory that supports the relevance of capital structure. This theory suggests that firms have optimal capital structure and they move towards the target. It further emphasized that when debt is employed in capital structure, firms are faced with the challenges of tax benefit and bankruptcy cost, thus the need for trade-off between the two. According to this theory, debt financing is attractive, in that, the benefits of tax saving from debt payments shields a number of cost debt financing,

thus high profit firms will have higher benefits from debt financing accompanied with lower levels of financial distress costs, which make higher leverage attractive to higher profit making firms.

The Pecking Order Theory: This theory was propounded by Myers and Majluf (1984). The pecking order theory which is also known as the information asymmetry theory, has two major assumptions: First, according to informational asymmetry, managers are more aware of business operations than the outside investors. According to Lawal, (2014) this theory provides an analytical description of the sequence of firm's financing decisions where retained earnings have a preference over debt and debt is favoured over equity. It can be seen that under pecking order hypothesis, firms prefer internal financing to external alternatives such that if the firms issue securities, they firmly favour debt over equity. The implication is that profitability would be expected to explain the firm leverage level such that more profit will connote less use of debt instruments. This contradicts the trade-off theory submission that more profit attracts more leverage.

Empirical Works

Uremadu and Onyekachi (2019) examined the impact of capital structure on corporate performance in Nigeria, with special focus on consumer goods sector of the economy. Multiple regression of Ordinary Least Square (OLS) analytical technique was used to analyse the data. The results from the study showed a negative and insignificant impact of capital structure on corporate performance of the consumer goods firm sector of Nigeria. That long term debt ratio to total asset had a negative and insignificant impact on returns on assets, while total debt ratio to equity also had a negative and insignificant impact on returns on assets.

Ajibola, et al, (2018) examined the impact of capital structure on financial performance of quoted manufacturing firms in Nigeria over the period 2005-2014. The panel methodology was applied. The findings of the panel ordinary least square show that a positive statistically significant relationship exists between long term debt ratio(LTD), total debt ratio (TD) and return on equity (ROE), while there is a positive statistically insignificant relationship between ROE (return on equity) and STD (Short term debt ratio). There was also a negative insignificant relationship between all the proxies of capital structure (LTD, STD and TD) and ROA which makes ROE a better measure of performance. The study concluded that capital structure has a positive impact on financial performance and companies should employ more of long term debts.

Nasimi et al., (2018) conducted a study on the determinants of Capital Structure in Pakistan. The balanced panel data set of their study was constructed using annual reports for 30 non-financial firms listed on the Pakistan Stock Exchange for the period 2008 to 2017. They utilized Ordinary Least Squares estimation technique to estimate the econometric model. The empirical findings present that profitability and tangibility were key determinants for capital structure of firms in Pakistan.

Nyeadi, et al.,(2017) investigated the factors influencing the capital structure decisions of listed firms in Ghana. 28 firms listed on the Ghana Stock Exchange were used for a time period of 8years, spanning from 2007-2014. They employed a dynamic panel system of General Methods of Moments (GMM) in testing the hypotheses. The results revealed that listed firms in Ghana use less debt than equity and they prefer using short-term debt rather than long-term debt in financing their operations. The study also finds a significant positive relationship between tangibility of firms, liquidity, managerial ownership, firm size and long term debt ratio. However, they also found that profitability, growth opportunities, firm age, and business risk relate negatively with long-term debt ratio for listed firms in Ghana.

In another study conducted by Sultan and Adam (2015) on the effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Iraq, the study used multiple regression model represented by ordinary least squares (OLS) as a technique to investigate the claimed effect of capital structure on the profitability by applying the same on four firms from the Iraqi industrial sector for the period (2004-2013). The study findings suggest that capital structure positively and significantly affects the profitability of listed firms in Iraq.

Dahiru (2016) studied Capital Structure and financial performance of listed manufacturing firms in Nigeria. The study used generalized least square multiple regression to analyze the secondary data extracted from the annual reports and accounts of the 31 sampled firms for the period 2009 to 2014. The study found that total debt, long-term debt and short-term debt have significant impact on the financial performance of listed manufacturing firms in Nigeria. The study also found that total debt to total equity has no significant effect on the financial performance of the firms.

Research Methodology

Research Design

The study employed a longitudinal research design, using secondary quantitative data. The study relied purely on audited financial reports of manufacturing firms listed on Nigerian stock exchange from 2015 to 2019.

Target Population

The study population comprised of all manufacturing firms listed on the Nigerian Stock Exchange for a period of 5 years from 2015-2019. This period was considered sufficient enough to give a generalized conclusion.

Sample and Sampling Technique

This research used convenience sampling technique. Convenience sampling technique is a non-probability sampling method. Samples are selected if they meet particular or certain criteria. Convenience sampling technique is appreciated for this research because many of the companies were not listed within the 5 years covering the data that was required for this study. Hence, 10 companies which have published audited financial report from 2015 to 2019 on their official website have met the criteria and were selected as research sample.

Method of Data Collection

This study used secondary sources of data. The data were obtained from the annual reports and accounts of the sampled manufacturing firms and Nigerian Stock Exchange Fact Book.

Technique of Data Analysis

Panel multiple regression was used to analyse the data in order to establish the relationship between the variables. Multiple regression was considered appropriate in view of the fact that it helps not only in establishing relationship between variables, but shows the cause and effect relationship.

Model Specification

CS=f(TD, TDTE, STD, LTD) --------------------------------(i)

PROF = f (CS) ---(ii)

PROF = f (TD, TDTE, STD, LTD)-----------------------(iii)

Using multiple regression analysis, the model was modified as follows

ROE= β_0+ β_1TD + β_2TDTE + β_3STD + β_4LTD +ε----------------------(iv)

Where:

PROF= Profitability measured by ROE

CS= Capital Structure

TD = Total Debt to Total Assets
TDTE= Total Debt to Total Equity
STD, = Short Term Debt to Total Assets
LTD = Long Term Debt to Total Assets
Ɛ=Error Term
ROE = Returns on Equity
β1 ,β2, β3, β4 = Co efficient of associated variables

Data Analysis

Table 1: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.729[a]	.532	.490	2.105	2.382

a. Predictors: (Constant), LTD, TDTE, STD, TD
b. Dependent Variable: ROE

Table 2: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	226.527	4	56.632	12.781	.000[b]
	Residual	199.393	45	4.431		
	Total	425.920	49			

a. Dependent Variable: ROE
b. Predictors: (Constant), LTD, TDTE, STD, TD

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.118	.568		.208	.836
	TD	-.017	.016	-.132	-1.066	.292
	TDTE	.061	.075	.091	.810	.422
	STD	.827	.154	.610	5.386	.000
	LTD	-.082	.022	-.404	-3.674	.001

a. Dependent Variable: ROE
Source: Generated from the annual reports and accounts using SSPS 20.0

The goodness of fit of the model as indicated by adjusted R-square shows a good fit of the model as seen in the regression results From Table 1. An adjusted R-Square value of 0.490 in Table 1 indicated that the model fits the data well. The total variation in the observed behaviour of Return on Equity (ROE) is jointly explained by the variation in Total Debt to Total Assets (TD), Total Equity to Total Assets (TDTE), Short Term Debts (STD) and Long Term Debts up to 50%. The remaining 50% is accounted for in the residual error term. The Durbin-Watson test was carried out to test for the autocorrelation in the model. The Durbin-Watson value of 2.3 shows that there was no auto correlation in the model, (see Table1).

To test for the overall significance of the model, the ANOVA of the F-statistics was used. The f-statistics of 12.781 shows overall significance of the regression model. F-sig. level of 0.000 is less than 0.05 which suggests that all the null hypotheses are not true. Therefore, capital structure has impacted positively on the profitability of listed manufacturing firms in Nigeria.

From Table 3, the coefficients and the T-values of each variable were stated. As seen from the result, two of the variables are positive implying that the two variables have a positive relationship to the profitability of listed manufacturing companies in Nigeria. The result further reveals that TD has a P-value of 0.292, while TDTE has 0.422 which are more than 0.05 respectively. This implies that the two variables did not contribute significantly to profitability of listed manufacturing companies in Nigeria. On the other hand, STD and LTDhave P-values of 0.000 and 0.001 respectively which is less than 0.05 indicating that they have significant contributions to the profitability of listed manufacturing companies in Nigeria. However, LTD is statistically significant but negatively related to the profitability of listed manufacturing firms in Nigeria.

Discussion of Result

The analysis and test of the research hypothesis on the impact of capital structure on the profitability of listed manufacturing firms in Nigeria shows that capital structure proxy by long-term debt and short term debts have impacted significantly on the profitability of listed manufacturing firms in Nigeria within the years covered from 2015-2019 while total debt ratio and total debt to Equity was insignificant. This finding is in agreement with the works of Gado and Dahiru (2016), who concluded that there exists a significant impact of long-term debt and short-term debt to the profitability of listed manufacturing firms in Nigeria. On the other hand, total debt ratio to total assets and total debt to total equity ratio did not show a significant relationship to the profitability of listed manufacturing firms in Nigeria. The studies of Basit and Irwan, (2017) and Uremadu and Onyekachi (2019) agreed with this finding. The findings show that profitability is negatively related with the endogenous variable leverage, this indicates that increase in firms' profitability will lead to decrease in leverage. In other words, the finding shows that higher profitable firms are not usually high levered in their capital structure mix. The firm's control is still in the hands of equity holders with no dilution of control. Based on the findings of this study and empirical reviews, we concluded that capital structure has a significant impact on the profitability of listed manufacturing firms in Nigeria.

Conclusion and Recommendations

This study examined the relationship between capital structure and the profitability of listed manufacturing firms in Nigeria for the period 2015-2019. The results show a significant relationship with capital structure and profitability when long-term debts and short-term debts are used as variables, of which LTD is negatively related. However, TD ratio and TDTE were insignificant. We conclude that higher tangible firms incorporate more debt in their capital structure. This supports trade-off and pecking order theory. This finding of our studies is in support of many empirical studies such as Nasimi et al, (2016), and many others. It indicates that profitable firms prefer internal finance as compared to external source of financing. This supports the pecking order theory which states that profitable firms hold more cash.

The following recommendations were made among others from the findings of the study:

I.   The regulatory authority such as SEC should make it mandatory for listed manufacturing firms in Nigeria to have some optimum level of leverage in their capital structure financing.

II. SEC should make sure that listed manufacturing firms in Nigeria disclose their report promptly and the external auditors should be mandated to report on the performance of the firms' audit.

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