Effect of Debt Capital on Financial Performance of Listed Pharmaceutical Companies in Nigeria

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Abstract
This study investigated the effect of debt capital on financial performance of listed pharmaceutical companies in Nigeria. The ex post facto research design was adopted for the study with a population of ten (10) listed pharmaceutical companies in Nigeria as listed by the Nigerian Exchange Group in 2021. Data were retrieved from the annual reports of the selected listed pharmaceutical companies for the period 2013 to 2017. Multiple regression analysis was used to analyze the data gathered with the aid of Stata12 statistical software. The study revealed a negative and insignificant relationship between debt capital and profit before tax of listed pharmaceutical companies in Nigeria. it also revealed a positive and insignificant relationship between debt capital and return on assets of listed pharmaceutical companies in Nigeria. Therefore, it was recommended that management of listed Pharmaceutical companies should not adopt aggressive total debt financing policy. This means that the managers of listed Pharmaceutical companies should concentrate on using more current liabilities to finance assets, relative to debt capital. Also, the government should regulate the financial sector through various monetary and fiscal policies in order to reduce the cost of borrowing given that many Pharmaceutical companies rely on external borrowing to finance their cash requirements. As it has shown in this study that debt capital has no significant relationship with firm's performance.

Keywords: *Capital Structure, Financial Performance, Debt Capital, Profit before Tax, Return on Assets.*

1. Introduction

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. It is a general measure of a firms overall financial health over a given period of time and can be used to compare similar firms across the same industry. Kaplan and Norton (1992) argue that, performance can also be assessed on a balanced scorecard of critical success factors through four perspectives financial, customers, internal business processes and learning and growth. Financial performance of pharmaceutical industry can be measured through variety of ratios of which Return on Asset, Return on Equity and New

Interest Margin are the major ones (Murthy & Sree, 2003; Alexandru et al., 2008).

Capital is a critical resource for all firms, the availability of which is a crucial conduction to succeed in pursuing firms strategy, that is, as the WEALTH Maximization of the shareholders is the basic objective of firm, the relevance of capital structure policy of firm has become more attractive as well as has gained momentum among the academician, researchers and financial practitioners. Capital structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources viz, loan, reserves, shares and bonds.

Abor (2005) views the capital structure of a company as the precise mixture of debt and equity use in financing the firm's operations. It represents the major claims to a corporation's assets which includes different types of both equity and liabilities. It's the mix of debt and equity that a company uses to finance its business.

Debt finance as suggested by Staking and Babbel (1995) is a fixed return finance as the cost (interest) is fixed on the par value (face value of debt). It is ideal to use if there's a strong equity base. It is raised from external sources to qualifying companies and is available in limited quantities. It is limited to value of security and liquidity situation in a given country. It is ideal for companies where gearing allows them to raise more debt and thus gearing level.

Cost of capital serves as the benchmark for firm's capital budgeting decisions therefore the optimal mix of debt and equity is imperative to outperform. Shareholders' wealth maximization concept also dictates that institutions choose the optimal mix of debt and equity financing that best serve the ultimate objective of the firm. Capital structure theory in response suggests that institutions establish what is often referred to as a target debt ratio, which is based on various trades-offs between the costs and benefits of debt versus equity (Kochhar, 1997).

Financing the firm's assets is a very crucial problem in every business and as a general rule there should be a proper mire of debt and equity capital in financing the firm's assets. Business activities either profit or non-profit or ended has to be financed before it can exist. Without finance, either primary or secondary, the business cannot perform its function effectively. A business activity has three main primary sources; the first is the sales of ordinary shares, the second is the proceeds from operating activities and the third is out–sourcing, that is borrowing from financial institution either interest bearing or non-interest bearing.

Statement of the Problem

Corporate firms especially pharmaceutical firms in Nigeria are face with the increasingly challenges of making the right mix in their capital structure when making strategic decisions. The issue of finance has been identified as the major reason for firms failing to start or grow. It is pertinent for pharmaceutical firms in Nigeria to make the best choice in financing their activities and grow over time. If it fully equity or debt or a mix of both. This problem of how firms choose and adjust their strategic mix of securities has called for a great deal of attention and debate among corporate financial literature. The interest is due to the fact that the mix of funds (Leverage ratio) affects the cost and availability of capital and thus, firm's investment decisions. It has been observed overtime that some organizations perform better than the other

despite the similarities in the resources available to them in term of assets, human capital and quantity of fund. It can thereby be inferred from the above that there is the need to determine whether high, low or zero leverage, will be the most adequate to enhance financial performance, predicting the level of gearing that can influence firm's financial performance.

Indication from theoretical and empirical studies demonstrates that debt capital has a positive or negative influence on organization performance. However, studies have not reached a consensus on how and to what extent the debt capital of firms' effect on the organization's performance. Furthermore, few available studies in Nigeria such as Adeyemi et al. (2017), Akinlo (2011); Akinyomi (2013); and Akeem et al. (2014) did not focus on pharmaceutical industry. In the light of this, there is no extant empirical studies to the best of my knowledge on financial performance in the context of the Nigeria pharmaceutical companies, which has created a gap in knowledge.

Operational Framework

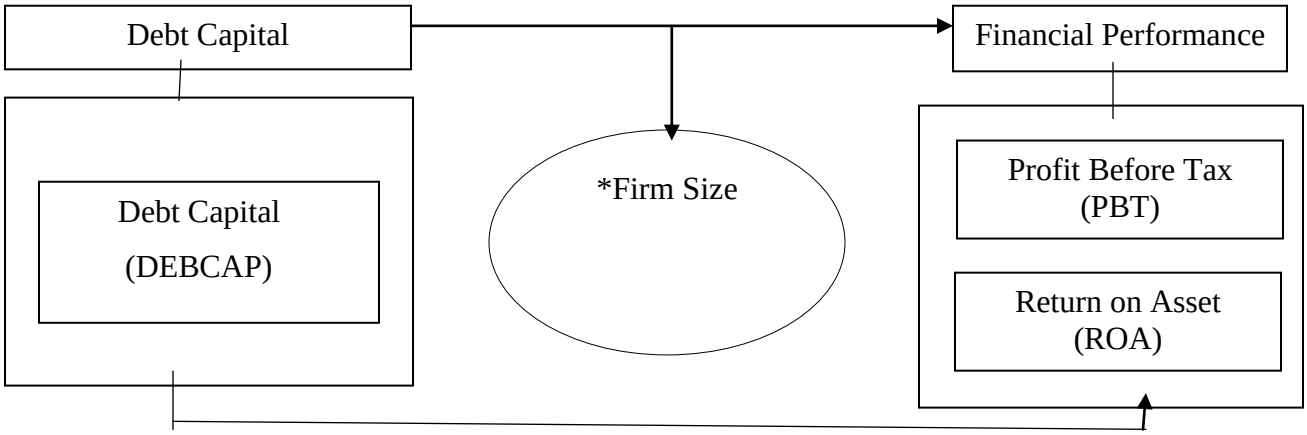

Figure 1: Operational Framework of Capital Structure and Financial Performance of listed pharmaceutical company in Nigeria.

Sources: Madiha et al. (2012); Babalola (2013).

The following research hypotheses were stated in a null form;

$H_0$1 There is no significant effect of debt capital on profit before tax of listed pharmaceutical companies in Nigeria.

$H_0$2 There is no significant effect of debt capital on return on assets of listed pharmaceutical companies in Nigeria.

2. Literature Review

Debt Capital

This is the capital that a business raises by taking out a loan. It is a loan made to a company, typically as growth capital, and is normally repaid at some future date. Debt capital differs from

equity or share capital because subscribers to debt capital do not become part owners of the business, but are merely creditors, and the suppliers of debt capital usually receive a contractually fixed annual percentage return on their loan, and this is known as the coupon rate. However, sometimes the loan is paid back based on a percentage of the company's monthly revenue instead of a fixed interest rate, such as the case with revenue-based financing. Debt capital ranks higher than equity capital for repayment of annual returns. This means that legally, the interest on debt capital must be repaid in full before any dividends are paid to any suppliers of equity. Since lenders are paid off before owners in the event of business liquidation, debt financing entails less risk than equity financing and thus usually commands a lower return (Cheng, 2009).

It can also be called debt financing. Debt financing is capital acquired through the borrowing of funds to be repaid at a later date. Common types of debt are loans and credit. The benefit of debt financing is that it allows a business to leverage a small amount of money into a much larger sum, enabling more rapid growth than might otherwise be possible (Kalpana, 2014).

Financial Performance

According to Metcalf and Titard (1976) Financial performance refers to the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectives being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

There are different financial measures that can be used in order to evaluate the performance of a company. Some of the common financial measures are: revenue, return on equity, return on assets, profit margin, sales growth, capital adequacy, liquidity ratio, and stock prices, among others. Depending on the industry on which the company operates, some financial ratios will be more meaningful than others. In this study that is carried out on listed pharmaceutical companies, the financial performance used are profit tax (PBT) and return on asset (ROA).

Profit Before Tax

Profit before tax it's a performance index that show how efficient a company's management is in the utilization of the resources as its deposal. Profit before tax provides investment analysts with useful information for evaluating a company's operating performance without regard to tax implications. This goes to show the true performance of a company's management in terms of resource utilization. As opined by Donald et al. (2002), profit before tax is referred to as "book profits." This justify the fact that profit before tax shows the physical effort of all factor of production within an organization in an accounting year.

Profit before tax figure is arrived at after operational expenses and cost has been deducted from the revenue of the firm for a given period. The value for profit before tax is extracted from the financial statement.

Return on Assets (ROA)

Marshall (2019) explained Return on Assets (ROA) an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage. ROA is calculated by dividing a company's net income by total assets. As a formula, it would be expressed as:

$$\text{ROA} = \frac{\text{Profit Before Tax}}{\text{Total Assets}} * 100$$

Theoretical framework

The theoretical framework of this study is anchored on the Modigliani-Miller Theory.

Modigliani-Miller Theory

The proponents of this theory are Modigliani and Miller (MM) in 1958. Modigliani-Miller Theory indicates that companies can maximize their value by employing more debt due to tax shield benefits allied with the use of debt. Modigliani and Miller (1963) argued that firm value and firm performance is an increasing function of leverage due to the tax deductibility of the interest payments at the corporate level. However, in the opinion of Brigham and Gapenski (1996), Miller-Modigliani (MM) theory is, probably true in theory, but in practice, bankruptcy costs exist and they increase when equity is traded off for debt. Hence, they argue on an optimal capital structure that is reached when the marginal cost of bankruptcy is equal to the marginal benefit from tax-sheltering provided by the increase in the debt ratio. Many, studies (Akinyomi, 2013; Olokoyo, 2012; Aburub, 2012; San & Heng, 2011) favour the theory that claims a positive relationship between capital structure and firm performance.

Empirical Review

Le et al. (2013) study investigated the impact of capital structure on firm performance in all firms listed in Vietnamese Stock Exchange during the period from 2007 to 2011. They used return on assets (ROA), return on equity (ROE), and Tobin Q to measure firm performance, while to measure capital structure they used short-term debt, long term-debt, and total debt ratios. They found that capital structure has a significant negative impact on firm performance.

Iorpev (2012) study investigated the relationship between capital structure and firm performance of manufacturing companies listed on the Nigerian Stock Exchange. They covered a period of five (5) years from 2005-2009. The study used multiple regression analysis to examine firm performance indicators such as Profit Margin (PM) and Return on Asset (ROA), while, the capital structure variables were, Long term debts to Total assets (LTDTA), Short-term debts to Total assets (STDTA), and Total debt to Equity (TDE). They found that STDTA and LTDTA have insignificant negative relationship with ROA and PM; while TDE has positive relationship with ROA and negative relationship with PM. STDTA is significantly related with ROA while LTDTA is significantly related with PM. The study concludes that capital structure is not a main

determinant of firm performance.

Chechet and Olayiwola (2014) examined capital structure and profitability of Nigerian listed firms from the agency cost theory perspective on a sample of 70 out of 245 firms listed on the NSE for a period of 10 years, 2000 to 2009. The study which adopted panel data methodology approach employed two independent variables (debt and equity) as surrogates of capital structure and profitability as the only dependent variable. The findings revealed that debt ratio is negatively related to profitability and equity has significant and positive impact on firm performance, profitability.

Olokoyo (2012) investigates the overall impact of capital structure (leverage) on performance (return on assets, return on equity and Tobin's Q of 101 firms listed on the Nigerian Stock Market from 2003 through 2007. The study which employed, panel data analysis by using fixed-effect estimation, Random-effect estimation and Pooled Regression Model, revealed that a firm's leverage have a significant negative impact on its accounting performance measure (ROA) and that all the leverage measures have a positive and highly significant relationship with the market performance measure (Tobin's Q). The study establishes that Nigerian firms are either majority financed by equity capital or a mix of equity capital and short-term debt. The study further shows that the maturity structure of debts affects the performance of firms significantly and that the size of the firm has a significant positive effect on its performance.

Akeem et al. (2014) examined the impact of capital structure on performance of 10 randomly selected companies quoted on the Nigerian Stock Exchange. They used the Generalized Least Squares Regression to analyze secondary data from 2003 to 2012. The study used total debt to asset ratio, total debt to equity ratio and long – term debt to capital ratio as capital structure variables and firm age as a control variable revealed a negative influence of capital structure on firm performance peroxide by return on investment and return on asset.

Duliwen and Yong (2009) examined the effect of capital structure on corporate performance of Shanghai & Shenzhen listed companies using a Time series 2003-2009, descriptive statistics and multiple regression was employed for data analysis. The study revealed an insignificant negative correlation between capital structure & corporate performance.

3. Methodology

This study used the ex-post facto research design with a population of ten (10) listed pharmaceutical companies in Nigeria as listed by the Nigerian Exchange Group in 2021 that have consistently submitted their annual reports to the NSE from 2013 to 2017. The entire population was used as the sample size of the study using the census approach. Data were retrieved from the annual reports of the selected listed pharmaceutical companies for the period 2013 to 2017. Multiple regression analysis was used to test the formulated hypotheses with the aid of the STATA12 software.

Model specification

$PBT_{it} = \beta_0 + \beta_1 DEBCAP_{it} + \beta_2 FMZE_{it} + \varepsilon_{it}$ ……. (3.1)

$ROA_{it} = \beta_0 + \beta_1 DEBCAP_{it} + \beta_2 FMZE_{it} + \varepsilon_{it}$ ……. (3.2)

Where:

PBT= Profit before Tax

ROA= Return on Assets

DEBCAP = Debt Capital

FMZE= Firm Size

$_{it}$ = Regression Constant

β_0 = Regression Coefficient

ε = error term

Operational Definition of Variables

Profit before Tax (PBT): It is the profit before tax is deducted. It showcases management performance in terms of effective utilization of resources. The figure of profit before tax was extracted from the income statement of the listed pharmaceutical companies used for the study.

Return on Assets (ROA): This shows how efficient a company is in utilizing its assets to generate the desired profit. In this study, the ROA was calculated mathematically as

$$ROA = \frac{\text{Profit Before Tax}}{\text{Total Assets}} * 100$$

Debt Capital (DEBCAP): This was operationalized in terms of the total debt for the period. This comprised of short-term debt and long-term debt.

Firm Size (FMZE): Firm size is measured as the total asset of the company. Expressed as the natural logarithm of a number (LN) of total assets in excel sheet.

4. Results/findings

Test of Hypotheses

Ho_1 There is no significant effect of debt capital on profit before tax of listed pharmaceutical companies in Nigeria.

Table 1: Regression on the effect of debt capital on profit before tax

Number of obs = 43

F(3, 39) = 5.49

Prob > F = 0.0030
R-squared = 0.4079
Root MSE = 7.1e+05

pbt	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
debcap	-.0004299	.060229	- 0.01	0.994	-.1222546	.1213948
cons	-7840.396	20963.3	-0.37	0.710	-50242.67	34561.88

Source: output from STATA version 12

From table 1 above, the regression result revealed a negative and insignificant effect of debt capital on profit before tax (p-value= 0.994). This means that all other variables held constant, a 1% increase in debt capital leads to a 0.0004% decrease in profit before tax of listed pharmaceutical companies in Nigeria. Consequently, we accept the null hypothesis that "There is no significant effect of debt capital on profit before tax of listed pharmaceutical companies in Nigeria."

Ho_2 There is no significant effect of debt capital on return on asset of listed pharmaceutical companies in Nigeria.

Table 2: Regression on the effect of debt capital on return on asset.

Number of obs = 43
F(3, 39) = 2.82
Prob > F = 0.0514
R-squared = 0.1304
Root MSE = 10.068

roa	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
debcap	5.65e-07	1.01e-06	0.56	0.579	-1.48e-06	2.60e-06
cons	-.8509383	.664254	-1.28	0.208	-2.194519	.4926423

Source: output from STATA version 12

In Table 2 above, the regression analysis shows the effect of debt capital on return on assets. The result revealed a positive and insignificant effect of debt capital on return on assets of listed pharmaceutical companies in Nigeria (p-value= 0.579). This means that a 1% increase in debt capital will result in a 5.65% increase in return on assets all other variables held constant. From the result, we accept the null hypothesis that "There is no significant effect of debt capital on return on asset of listed pharmaceutical companies in Nigeria."

5. Discussion of findings

Debt capital and profit before tax of listed pharmaceutical companies in Nigeria.

The study revealed a negative and insignificant effect of debt capital on profit before tax of listed pharmaceutical companies in Nigeria. This finding is in line with the finding of Bauer (2004) that revealed a negative and insignificant relationship between leverage and profitability. This makes the findings consistent with the pecking order hypothesis rather than the static trade off models. This finding is further corroborated by the findings of Chechet and Olayiwola (2014); Efobi, and Uremadu (2009); Duliwen and Yong (2009) and Hasan et al. (2014) that revealed a negative and insignificant relationship between capital structure and financial performance. This finding is in contrast with the findings of Mohammed et al. (2016) that revealed a positive relation and significant effects on firm's performance. Also, this finding contradicts the findings of Ananiadis and Varsakelis (2008); and Singh, (2013) that revealed that capital structure had a significant effect on the financial performance of the firms.

Debt capital and return on asset of listed pharmaceutical companies in Nigeria.

The study revealed a positive and insignificant effect of debt capital on return on assets of listed pharmaceutical companies in Nigeria. This finding is in line with the finding of Krishnan and Moyer (1997) that revealed corporate performance and capital structure of large enterprises are not statistically significant. This finding is further corroborated by the findings of Ebaid (2009); Huang and Sonmg (2006) that revealed no significant impact on firm's performance as measured by return on asset. This finding is in contrast with the findings of Akinyomi (2013); Patrick et al. (2013); Adesina et al. (2015); Yakubu et al. (2016) and Goyal (2013) that revealed that capital structure as measure by equity and debt has a positive and significant effect on firm's performance (return on asset).

6. Conclusions

This study investigates the effect of capital structure on financial performance of listed pharmaceutical companies in Nigeria. The conceptual frame work consists of measures for capital structure and financial performance which are Equity capital, and profit before tax (PBT) and return on Asset (ROA). While the study was controlled by the size of the firm (firm size). The study anchored on the Miller-Modigliani (MM) theory that suggested that companies can maximize their value by employing more debt due to tax shield benefits allied with the use of debt. From the findings of the study, it concluded that capital structure (debt capital) has an insignificant relationship with financial performance of listed pharmaceutical companies in

Nigeria.

7. Recommendations

The following recommendations were made in respect to the above findings;

1. Management of listed Pharmaceutical companies should not adopt aggressive total debt financing policy. This means that the managers of listed Pharmaceutical companies should concentrate on using more current liabilities to finance assets, relative to debt capital.
2. The government should regulate the financial sector through various monetary and fiscal policies in order to reduce the cost of borrowing given that many Pharmaceutical companies rely on external borrowing to finance their cash requirements. As it has shown in this study that debt capital has no significant effect on firm's performance.

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