



CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF LISTED PHARMACEUTICAL COMPANIES IN NIGERIA

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ABSTRACT: *This study investigated the relationship between capital structure and financial performance of listed pharmaceutical companies in Nigeria from 2013–2017. 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 2013–2017. Multiple regression analysis was used to analyze the data gathered with the aid of Stata12 statistical software. The study revealed a positive and significant relationship between equity capital and profit before tax of listed pharmaceutical companies in Nigeria. It also revealed the existence of a positive and significant relationship between equity capital and return on assets of listed pharmaceutical companies in Nigeria. Therefore, it was recommended that the management of listed pharmaceutical companies in Nigeria should pay more attention to equity capital because it is a major determinant in enhancing profit before tax, and that equity capital should be encouraged so as to boost return of assets of listed pharmaceutical companies in Nigeria.*

KEYWORDS: Capital Structure, Financial Performance, Equity Capital, Profit before Tax, Return on Assets.



INTRODUCTION

A firm's capital structure is the mix of its financial resources available for carrying on the business and is a major determinant on how the business operates. The capital structure of a firm is described as the components of its sources of financing, broadly categorized as equity and debt finance (Brockington, 1990). In general, pharmaceutical companies can choose among many alternative capital structures. According to finance theory, the capital structure affect firm's cost of capital and consequently financial performance (Abor, 2005).

Capital structure is referred to as the ratio of different kinds of securities raised by a firm as long-term finance and debt. These securities include external equity (ordinary shares), internal equity (retained earnings), and preference shares (Margaritis & Psillaki, 2010). Ordinary share capital is raised from the public from the sale of ordinary shares to the shareholders. This finance is available to limited companies. It is a permanent finance as the owner/shareholder cannot recall this money except under liquidation. It is thus a base on which other finances are raised. Ordinary share capital carries a return that is variable, that is, the ordinary dividends. These shares carry voting rights and can influence the company's decision-making process at the AGM. The ordinary shares carry the highest risk in the company (high securities) because of uncertainty of return. Ordinary shares cannot ensure refund and have residual claims.

Sulaiman (2001) argues that capital reserves are raised by selling shares at a premium. The difference between the market price less floatation costs and par value are credited to the capital reserve or through revaluation of the company's assets. This leads to a fictitious entry which is of the nature of a capital reserve, or by creation of a sinking fund. Preference share is also called quasi-equity according to Graham and Harvey (2001) because it combines features of equity and those of debt. Preference share is preferred to ordinary share capital because it is paid dividends first and it is paid asset proceeds first. Unlike ordinary share capital, it has a fixed return and carries no voting rights. It is an unsecured finance and it increases the company's gearing ratio (Myers, 2001).

Statement of the Problem

Corporate firms especially pharmaceutical firms in Nigeria are faced 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 is 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 others despite the similarities in the resources available to them in terms of assets, human capital and quantity of fund. It can therefore be inferred from the above that there is a 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 a firm's financial performance.

Indication from theoretical and empirical studies demonstrates that capital structure has a positive or negative influence on organization performance. However, studies have not reached a consensus on how and to what extent the capital structure of firms' affect 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 industries. In the light of this, there is no extant empirical study 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

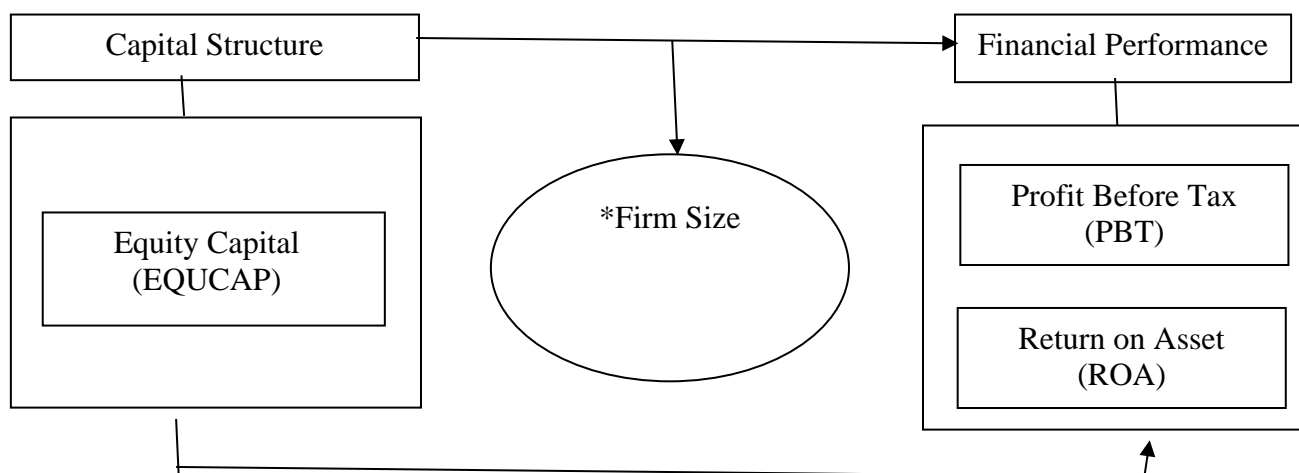


Figure 1: Operational Framework of Capital Structure and Financial Performance of Listed Pharmaceutical Companies in Nigeria

Sources: Akeem et al. (2014); Akinyomi (2013)

The following research hypotheses were stated in a null form:

H₀₁ There is no significant relationship between equity capital and profit before tax of listed pharmaceutical companies in Nigeria.

H₀₂ There is no significant relationship between equity capital and return on assets of listed pharmaceutical companies in Nigeria.

LITERATURE REVIEW

Equity Capital

Equity capital represents the money contributed by owners and investors towards the capital of the company. Equity capital is known as share capital or simply equity. The number of equity share multiplied by the face value of each equity share gives us the equity share capital of the company. Equity financing refers to funds generated by the sale of stock. The main benefit of equity financing is that funds need not be repaid (Akinlo, 2011). However, equity financing is not the non-strings-attached solution it may seem. Shareholders purchase stock with the understanding that they then own a small stake in the business. The business is then beholden to shareholders and must generate consistent profits in order to maintain a healthy stock



valuation and pay dividends. Since equity financing is a greater risk to the investor than debt financing is to the lender, the cost of equity is often higher than the cost of debt (Amidu, 2007).

Equity shares are earlier known as ordinary shares. The holders of these shares are the real owners of the company; they have control over the working of the company. Equity shareholders are paid dividends and after them, the preference shareholders. The rate of dividend on these shares depends on the profits of the company. They may be paid a higher rate of dividend or they may not get anything. These shareholders take more risk as compared to preference shareholders. Equity capital is paid after meeting all other claims including that of preference shareholders. They take risk both regarding dividend and return of capital. Equity share capital cannot be redeemed during the lifetime of the company (Margaritis & Psillaki, 2010).

Financial Performance

According to Metcalf and Titard (1976), financial performance refers to the act of performing financial activity. In a broader sense, financial performance refers to the degree to which financial objectives are being or have 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 a 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 before tax (PBT) and return on asset (ROA).

Profit Before Tax

Profit before tax is a performance index that show how efficient a company's management is in the utilization of the resources at its disposal. 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 justifies the fact that profit before tax shows the physical effort of all factors of production within an organization in an accounting year.

Profit before tax figure is arrived at after operational expenses and cost have 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) as 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:

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

Theoretical Framework

The theoretical framework of this study is anchored on the pecking order theory.

Pecking Order Theory

The proponents of this theory are Myers and Majluf (1984). Pecking order theory states that there is a benefit to financing with internal funds. According to Getahun (2014), the theory assumes that growing firms depend on internal funds more than external funds. Pecking order theory therefore suggests that firms should follow a financing hierarchy in order to minimize information asymmetry between the parties. It states that companies prioritize their source of financing, from internal financing to equity financing, according to the principle of the least resistance, preferring to raise equity as a financing means of last resort (Getahun, 2014). Pecking order theory asserts that internal funds must be used first and only when all internal finances have been depleted, firms can opt for debt. Many studies (Chechet & Olayiwola, 2014; Onaolapo & Kajola, 2010; Akinlo, 2011) favour the pecking order theory. The theory claims a negative relationship between capital structure and firm performance.

Empirical Review

Adesina et al. (2015) examined the impact of post-consolidation capital structure on the financial performance of ten Nigerian banks for the period 2005 through 2012. The study employed profit before tax as a dependent variable, equity and debt as independent variables and ordinary least squares as a regression technique. It revealed that capital structure has a significant positive relationship with the profitability of Nigerian quoted banks.

Vitor and Badu (2012) examined the effect of capital structure on the performance of listed banks in Ghana during 2000 to 2010. The data was collected from Ghana Stock Exchange and annual reports of each bank. The method used was panel data regression. Results showed that the public banks in Ghana have very high debt ratios and the debt level has a negative influence on the bank performance. The research showed a high level of debt on each public bank. It could be seen from the banks that they depend on short-term debt and this led to low bond market activity. The regression results indicated that capital structure has a negative effect on firm performance measured by ROE and firm value (Tobins'Q).

Goyal (2013) conducted a study on the effect of capital structure on the profitability of listed banks in India during 2008 to 2012. The multiple regression analysis was used to determine the relationship between dependent variables (short term debt to total capital, long term debt to total capital, total debt to total capital) and the independent variable (ROA, ROE and earning per shares). The control variables used were firm size (SIZE) and firm asset growth (AG).



Results showed that there is a positive relationship between short-term debt with profitability measured by ROA, ROE and earning per shares (EPS).

Onaolapo and Kajola (2010) investigated the influence of capital structure on financial firm performance applied on non-financial firms listed in Nigerian Stock Exchange according to the period from 2001 to 2007. To examine capital structure, they used debt ratio (DR) and also used return on assets (ROA) and return on equity (ROE) to examine firm performance. They found that capital structure has a significantly negative impact on financial firm performance.

Saeedi and Mahmoodi (2011) examined the effect of capital structure on the performance of the 25 companies in the banking sector listed on the Karachi Stock Exchange in Pakistan during 2007–2011. The study used multiple regression models to examine the relationship between capital structure and bank performance. Performance is measured with ROA, ROE and EPS variables. Capital structure is measured by short-term debt to total capital, long-term debt to total capital and total debt to total capital. The study also used firm size and firm asset growth as control variables. Results showed that there is a positive relationship between capital structure and performance of the banking industry in Pakistan.

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 a 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 and profitability.

Chinaemerem and Anthony (2012) examined the impact of capital structure on financial performance of Nigerian firms using a sample of 30 non-financial firms listed on the Nigerian stock exchange during the 7 year period (2004–2010). Panel data for the selected firms were generated and analyzed using ordinary least squares (OLS) as a method of estimation. The result shows that a firm's capital structure has a significantly negative impact on the firm's financial measures ROA and ROE.

Table 1: Summary of Empirical Literature Reviewed

S/N	Author	Year	Topic	Methodology	Variable used	Statistical tools	Findings
1	Saaed et al. (2011)	2011	Effect of capital structure on the performance of 25 companies in the banking sector in Pakistan	Empirical	Time series 2007–2011	Descriptive statistics	A positive relationship between capital structure and performance of the banking industry in Pakistan



2	Adosina et al. (2015)	2015	Impact of post consolidation capital structure on the finance performance of 10 banks	Empirical	OLS	Time series 2005–2012	Significantly positive relationship with profitability
3	Singh (2013)	2013	Capital structure effects on the profitability of corporate firms in India	Empirical	OLS	Descriptive statistics	That there has been a strong one-to-one relationship between capital structure variables and profitability variables, return on assets (ROA) and return on capital employed (ROCE)
4	Cheng (2009)	2009	Capital structure and financial performance of corporate firms	Empirical	OLS	Descriptive statistics	Both methods of financing (debt and equity) have significant negative effect on operating performance

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

$$PBT_{it} = \beta_0 + \beta_1 EQUCAP_{it} + \beta_2 FMZE_{it} + \varepsilon_{it} \dots\dots (3.1)$$

$$ROA_{it} = \beta_0 + \beta_1 EQUCAP_{it} + \beta_2 FMZE_{it} + \varepsilon_{it} \dots\dots (3.2)$$



where:

PBT = Profit before Tax

ROA = Return on Assets

EQUCAP = Equity Capital

FMZE = Firm Size

α = 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

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

Equity Capital (EQUCAP): This was measured in terms of the total value of equity for the period as obtained from the financial statement of listed pharmaceutical companies in Nigeria.

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.

RESULTS/FINDINGS

Test of Hypotheses

H₀₁: There is no significant relationship between equity capital and profit before tax of listed pharmaceutical companies in Nigeria.

**Table 2: Regression on the Relationship Between Equity Capital and 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]	
equcap	.1362429	.0556001	2.45	0.019	.0237811	.2487047
cons	-7840.396	20963.3	-0.37	0.710	-50242.67	34561.88

Source: Output from STATA version 12

From table 2 above, the result of the data regression on the relationship between equity capital and profit before tax shows a positive and significant relationship between equity capital and profit before tax (p-value = 0.019). It means that a 1% increase in equity capital will bring about a 0.1362% increase in profit before tax, all other variables held constant. We therefore reject the null hypothesis and conclude that “there is a significant relationship between equity capital and profit before tax of listed pharmaceutical companies in Nigeria.”

Test of Hypothesis 2

H₀₂: There is no significant relationship between equity capital and return on asset of listed pharmaceutical companies in Nigeria.

Table 3: Regression on the Relationship Between Equity Capital and 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]	
equcap	9.34e-07	4.03e-07	2.32	0.026	1.19e-07	1.75e-06
_cons	-.8509383	.664254	-1.28	0.208	-2.194519	.4926423

Source: Output from STATA version 12



In Table 3 above, the regression analysis shows the relationship between equity capital and return on assets. The result revealed the existence of a positive and significant relationship between equity capital and return on assets of listed pharmaceutical companies in Nigeria (p -value= 0.026). This means that all other variables held constant, 1% increase in equity capital will result in a 9.34% increase in return on assets. From the result, we reject the null hypothesis and therefore concluded that “There is significant relationship between equity capital and return on asset of listed pharmaceutical companies in Nigeria.”

DISCUSSION OF FINDINGS

Equity Capital and Profit Before Tax of Listed Pharmaceutical Companies in Nigeria

The study revealed a positive and significant relationship between equity capital and profit before tax of listed pharmaceutical companies in Nigeria. This finding may be as a result of the perception that an internally generated fund that has no cost of capital will enhance the performance of an organization if available. This finding is in line the finding of Saaed et al. (2011) that revealed a positive and significant relationship between capital structure and performance of the banking industry in Pakistan. This finding is further corroborated by the findings of Adosina et al. (2015) that revealed a positive and significant relationship between capital structure and corporate performance. This finding is in disagreement with the findings of Soumadi and Hyajeh (2010) and Huang and Sonmg (2006) that revealed a no significant relationship between capital structure and corporate performance.

Equity Capital and Return on Asset of Listed Pharmaceutical Companies in Nigeria

The study revealed the existence of a positive and significant relationship between equity capital and return on assets of listed pharmaceutical companies in Nigeria. This finding is in line with the finding of Singh (2013) that there is a strong one-to-one relationship between capital structure variables and profitability variables like return on assets (ROA) and return on capital employed (ROCE). In their study, capital structure was found to have a significant influence on profitability. This finding is in contrast with the finding of Cheng (2009) that revealed that equity and debt financing has no significant impact on operating performance of firms.

CONCLUSION

This study investigates the relationship between capital structure and financial performance of listed pharmaceutical companies in Nigeria. The conceptual framework consists of measures for capital structure and financial performance—which are equity capital, 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 pecking order theory that suggested that firms should follow a financing hierarchy in order to minimize information asymmetry between the parties; companies should prioritize their source of financing, from internal financing to equity financing. From the findings of the study, it concluded that capital structure (equity capital) has a significant relationship with financial performance of listed pharmaceutical companies in Nigeria.



RECOMMENDATIONS

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

1. Management of listed pharmaceutical companies in Nigeria should pay more attention to equity capital because it is a major determinant in enhancing profit before tax.
2. Equity capital should be encouraged so as to boost return of assets of listed pharmaceutical companies in Nigeria.

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