

## THIN CAPITALIZATION AND FINANCIAL PERFORMANCE OF LISTED HEALTH COMPANIES IN NIGERIA

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### ABSTRACT

*The study examined thin capitalization and financial performance of listed health companies in Nigeria. The objectives of the study among others where; ascertain the relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria. Determine the relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria. Determine the moderating effect of firm size on the relationship between capitalization and financial performance of listed pharmaceutical companies in Nigeria. The study employed an ex-post-facto and correlational research design. The population and sample size of this study consisted of 7 listed Pharmaceutical (Healthcare) companies on the Nigeria Exchange Group from (2006 – 2020). The instrumentation was secondary data, The formulated research questions were analyzed with descriptive statistics. The hypotheses were tested using the Ordinary Least Square (OLS) Model regression analysis with the aid of E-view (10). Findings of the study were that there is no significant relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria. There is no significant relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria. Also, firm size does not significantly influence the relationship between Tax Planning Strategies and the Financial Performance of listed Pharmaceutical Companies in Nigeria. Hence the study recommends among other that, firms should ensure that proper analysis of strategies, cost, and benefits therefrom is done before embarking on it. Also, to reduce abuse of privileges, shelters and loopholes in the tax law.*

**Keywords:** *thin capitalization, financial performance, and profit after tax, earnings per share and firm size.*

### INTRODUCTION

The healthcare industry in Nigeria is one of the fastest-growing sectors of the nation's economy. The industry market value and contribution to market capitalization is estimated at N50bn presently; no doubt they have and are still making significant contributions to the improvements of human health in the country (<https://ngxgroup.com>, 2022). In relation to financial performance of listed firms in Nigeria, and healthcare manufacturing companies inclusive, a major challenge that confronts them comes amidst the following: high corporate tax rate, multiple taxations, and poor tax planning (Oyeshile & Adegbe, 2020; Appah, 2022). However, its theoretical that one of the means firms actualize the effective tax planning objective is through thin capitalization. Because of debt financing requires interest payment to the holder (tax allowable expenses), firms employ a thin capitalization strategy in the management of tax liability.

Hence, thin capitalization refers to a situation whereby an enterprise employs more debt than equity to finance its business activity (highly geared). The effect of thin capitalization on taxation is that enterprises with high debt funding would enjoy tax reliefs on interest charges unlike dividend. This is because interest is tax deductible and paid before the profit of the borrowing company is determined (Maccarthy & Abolo, 2019). Ezejiolor, and Ezenwafor (2020), A company is said to be thinly capitalized when the level of its debt is much greater than its equity capital, i.e. its gearing, or leverage, is very high. An entity's debt-to-equity funding is sometimes expressed as a ratio. For example, a gearing ratio of 1.5:1 means that for every ₦1 of equity the entity has ₦1.5 of debt. A company is typically financed (or capitalized) through a mixture of debt and equity. Thin

capitalization refers to the situation in which a company is financed through a relatively high level of debt compared to equity. A company is operating with thin capitalisation if the size of the paid-up capital is considered small or low compared with its debt capital or the size of its operation (Ibiloye, 2019). The rationale for thin capitalisation is reducing taxable earnings through the deductibility of interest on a loan.

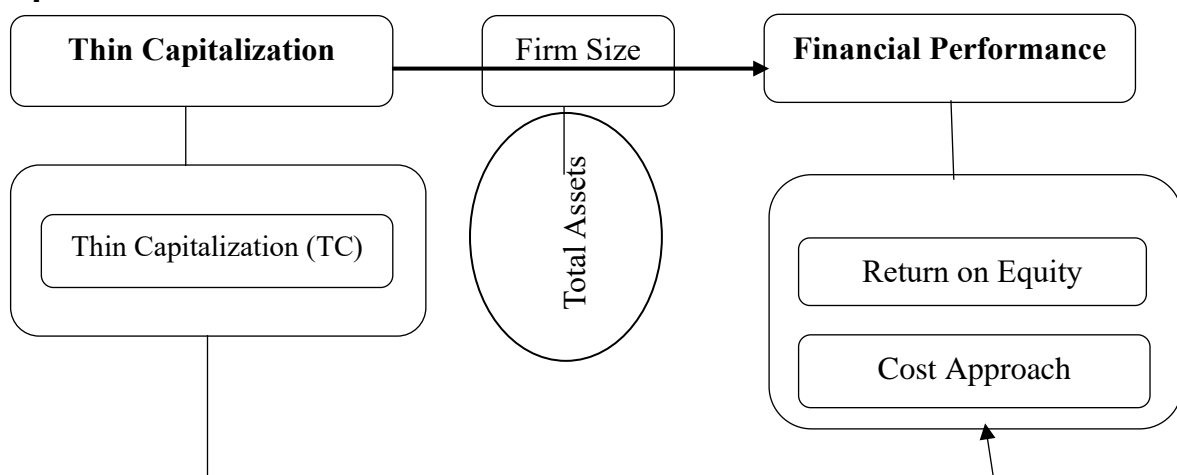
### Statement of Problem

Thin capitalization as a strategy address some of the challenges faced by corporate organizations in terms of tax liability and how its impacts the organization's profitability, it appears pharmaceutical companies are yet to fully harness their potential. Even though there have been arguments about the significant impact of thin capitalization in the reduction of tax burden when integrated fully in to the strategic plans of many business organizations, little has been heard of its implications for pharmaceutical companies' performance in Nigeria literature. With views as above, it has become very imperative to carry out a study on how thin capitalization impact on financial performance of listed pharmaceutical companies.

Thus, several empirical studies have been carried out on the influence of tax planning strategies on financial performance in Nigeria, and the results are generally mixed. Amongst authors that argued positively in favor of tax planning as a key to boosting the value of the firm are Armstrong, et al., (2012); Gamlath and Rathinranee (2013); Kiabel and Akenbor (2014); Nanik and Ratna (2015); Zhang, et al., (2016); Nwaobia, et al., (2016); Ogundajo and Onakoya (2016); Salehi, et al., (2018); Kibari and Wahome (2018); Oyeshile and Adegbe (2020); Erasmus and Uwikor (2020); Wang (2021); Olayiwola (2021); etc. Conversely, Kawor and Kportorgbi (2014); Ftouhi, et al., (2014); Dada and Adetola (2017); Olaoye and Bamisaye (2018); Simeon, et al., (2019); in their separate studies maintained that corporate tax planning strategies do not increase profitability and value of the firm. The mixed results of these prior studies could be attributable to differences in corporate tax planning strategies, jurisdictional characteristics, tax laws, income patterns of the firms as well as institutional differences.

The preceding paragraph is a shred of evidence that several related studies have been conducted, however out of the many studies, no one examined thin capitalization strategy and financial performance to the best of the researcher knowledge, and to say the least, none of the prior studies was centered on listed pharmaceutical companies in Nigeria, thus leaving conspicuous gaps in the literature. Therefore, makes this study arguably the first on thin capitalization strategy and financial performance centered on pharmaceutical companies in Nigeria.

### Conceptual Framework



**Figure 1.1** A Conceptual Framework of the Relationship between Thin Capitalization (TC) and Financial Performance.

### Aim and Objectives of the Study

This study aims to investigate the relationship between thin capitalization and the financial performance of listed pharmaceutical companies in Nigeria

1. ascertain the relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria.
2. determine the relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria.
3. determine the moderating effect of firm size on the relationship between capitalization and financial performance of listed pharmaceutical companies in Nigeria.

### Research Hypotheses

**H0<sub>1</sub>:** There is no significant relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria.

**H0<sub>2</sub>:** There is no significant relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria.

**H0<sub>3</sub>:** Firm Size does not significantly influence the relationship between capitalization and financial performance of listed pharmaceutical companies in Nigeria.

### Conceptual Framework Review

When a company is financed through a relatively high level of debt compared to equity, such a company is said to be thinly capitalized (Pratama, 2017). According to the Organization for Economic Cooperation and Development (2012), thin capitalization can be defined as a strategy used by businesses to maintain a high level of debt relative to equity in order to benefit from the tax laws that allow interest on debt to be deducted as an allowable expense for tax purposes. Companies found in the situation above are often said to be 'highly geared or leveraged. Thin capitalization is a strategy employed by businesses to organize their finances so that their debt-to-equity ratio is high (Oyeshile & Adegbe, 2020). A high level of debt financing options by firms results in the payment of high-interest expenses amount to the debt holders. Oyeshile and Adegbe (2020) provided a diagrammatical explanation of the distinction between equity and debt as painted in thin capitalization, and is presented in figure 1 below:

**Figure 2. 1 Equity and Debt distinction**

	EQUITY	DEBT
	Own resources	Other party resources
Financier (provider of funds)	Shareholders → Payment = equity contribution	Lenders → Payment = loan
Financed (recipient of funds)	Company Return to financier = dividends or increase in share value	Company Return to financier = interest Normally a deductible expense in the jurisdiction of the payer

Source: Thin Capitalization Adopted from OECD, 2018.

A careful look at the definitions of the concept raises the question of what constitutes debt and equity. In the ordinary context of business, debt and equity have separate meanings distinct from what is meant when it comes to tax-related matters. Debt refers to any financing instrument, such as a bond or a loan that entitles the holder to a fixed, periodic return, commonly referred to as interest. Its holder does not have a stake in the company but is only entitled to an interest. On the other hand, Equity gives the holder ownership interest in the underlying entity. In this discussion, the term equity is used to refer to more than just shares or stocks. We recall that during the development and running stages of a business, both shares and debt are used as sources of funding. It is also not an uncommon scenario to find businesses in their formation stage dabble into debt that culminates in interest payment that forms part of the capitalization of the company in combination with equity. Blouin, et al., (2014), explained that it is possible to incur debt together with the acquisition of property or products, resulting in interest payments due to untimely payment of the price. Buettner (2012), explains that, because debt financing requires interest payment to the holder, which also is a tax-deductible expense, firms employ a thin capitalization strategy in the management of tax liability. To maintain the working capital required by a company to be able to pay suppliers, salaries, and other running expenses, debt may be incurred.

The distinction between debt and equity sources of a firm's finance is in tax treatment. Interest payments to debt holders are normally deductible business expenses for the purposes of calculating taxable income by the taxpayer. Payments related to equity, on the other hand, are often non-deductible. Therefore, thin capitalization arises when debt finance contributes much more to a company's capital structure than equity finance. However, the question begging for an answer is why a business would choose debt financing and become undercapitalized.

Akabom and Ejaba (2018) explaining the meaning of thin capitalization also noted that corporate tax benefits are among the reason firms consider the high leverage option because the more interest paid, the less its pays as tax. Buettner, et al., (2012), posited that there are two approaches to designing thin capitalization rules: specific rules and non-specific rules. For the specific rules, there is an explicit restriction of internal debt while nonspecific rules on the other hand mostly restrict debt in general. Mathew (2016), went further to show how some countries have defined thin capitalization as a safe harbour. He accordingly stated the debt/equity ratio in some countries as follow:

- i. USA, France– 1.5:1.
- ii. Canada, Ghana– 2:1.
- iii. Netherland, Australia, Japan, South Africa, Kenya– 3:1.
- iv. China–Financial Institutions 5:1, others 2:1.
- v. Germany–deductibility of interest of up to 30%

From the foregoing, it is safe to state that thin capitalization is a good measure of tax planning as many business organizations have deployed it for tax management. Rohaya, et al., (2010) corroborated this fact in their study and opined that highly leveraged companies are able to endure higher effective tax rates because of greater investment in fixed assets and lower investment in inventory. The views were the same with Otuya and Omoye (2021), and Nwaobia, et al., (2016). Thin Capitalization is calculated as the ratio of debt to equity.

$$\text{Thin Capitalization} = \frac{\text{Debt}}{\text{Total Equity}}$$

Thin Capitalisation is one of the anti-avoidance mechanisms, which is prevalent in almost all the major countries including Australia, Canada, France, Germany, Italy, Japan, UK, and USA. It is mainly applied to bourn the debt financing cost (interest) which is a tax-deductible expenditure in most countries. Thin capitalisation brings about tax avoidance practice that affects the level of income tax that accrued to the government. From the perspective of firm's finance strategy, thin capitalisation is a financial technique that multinational companies adopt to avoid tax on their investment portfolio abroad.

## Financial Performance

Financial performance (reflected in profit maximization, maximizing return on assets and maximizing shareholder return) is based on the firm's efficiency (Barbosa & Louri, 2015). According to other authors (Barbosa and Louri 2015; Vernimmen 2019), the assessment of financial performance is based on the return on investment, residual income, earnings per share, dividend yield, price/earnings ratio, growth in sales, market capitalization, etc. 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 firm's overall financial health over a given period of time and can be used to compare similar firms across the same industry. Kaplan and Norton (2015) 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.

The measurement of performance is dependent upon the information introduced in the measurement system and the instruments employed. The classical indicators used in financial analysis to measure performance have been the return on investment, leverage, capital efficiency, liquidity, cash flow, inventory turnover, receivables turnover ratio. According to Richard (2019), corporate performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). In organization performance encompasses three specific areas of firm outcomes: financial performance (profits, return on assets, return on investment, etc.); product market performance (sales, market share, etc.); and shareholder return (total shareholder return, economic value added, etc. Organizational effectiveness captures organizational performance plus the myriad internal performance outcomes normally associated with more efficient or effective operations and other external measures that relate to considerations that are broader than those simply associated with economic valuation (either by shareholders, managers, or customers), such as corporate social responsibility (Kenton & Scott, 2020).

## Measures of Financial Performance

### Profit After Tax (PAT)

Profit after tax (PAT) is referred to as the net profit available for shareholders after paying all expenses and taxes by the business concern. Tax is an integral part of all ongoing businesses. After the payment of all necessary operating expenses, interest on loans, etc the business is left with a profit upon which taxes are calculated. After payment of taxes, the entity is left with a profit known as profit after tax. This is a common and broadly used financial performance indicator in terms of profitability. Evidence abounds in the literature on the importance of this variable in profitability analysis. Olaoye and Bamisaye (2018), in their study to ascertain the impact of deferred tax on the financial performance of firms with specific analysis on the effect of both deferred tax asset and deferred tax liability on firms' performance, employed profit after tax to measure financial performance. They posited that deferred tax assets and deferred tax liability exert a negative impact on the performance of firms.

Profit after tax is derived as:

$$\text{PAT} = \text{revenue less cost of sales and other allowable expenses, and tax expense.}$$

### Earnings Per Share (EPS)

This is a popular and widely used financial performance indicator. Earnings are the net benefits of a corporation's operations. Put it differently, it is the amount on which a company income tax is due and after the payment of all taxes, it is referred to as net income after taxes. Written evidence indicates there is much obsession amongst analysts and researchers on the use of EPS as a financial performance variable which according to scholars, carefully presents in clear terms earnings generated for shareholders (Ohlson & Juettnner-Nauroth, 2005; Taboga, 2011). In the views of Adkins, et al., (2010), the neat summarization of the earnings generated for shareholders through EPS is the reason for the obsession. Earnings remain a major driver of a firm's share prices in certain conditions surrounding them can indicate whether the company will be profitable, successful, and

sustainable in the long run (Hanlon, 2005). In the same vein, Graham, et al., (2005), reported that the majority of financial executives in the United State of America were of the opinion that earning per share is the most important performance measure after their survey of about four hundred financial managers. They noted that the wave of the importance of EPS results from its usefulness to both outsiders and management in terms of strategic decision making, management performance incentive schemes, and acquisitions.

According to, Oyeshile and Adegbe (2020), see earnings per share as the net earnings of a firm that is attributable to the equity holders of the firm and reported that a firm's tax planning is positively related to its earnings per share after their study to evaluate the effect of corporate tax planning on the financial performance. Similarly, Otuya and Omoye (2021) and Nwaobia, et al., (2016), also employed earnings per share to measure financial performance in their separate studies. They reported a significant and positive relationship between tax planning and firm financial performance.

Earnings per share are derived by the simple calculation of dividing a firm's net profit by the number of common shares outstanding.  $\text{Net Profit} / \text{Number of common shares}$ . According to Ali, (2015), earnings per share shows the relationship between how much money a firm produces and what is due to each share. It is a common metric deployed to calculate a firm value ratio and a fundamental element in deciding a share price.

$$\text{Earnings per share} = \frac{\text{net profit}}{\text{No of shares outstanding}}$$

### Firm Size

Tax planning generally is a professional activity and because professionalism is involved, its execution demands requisite resources, skill, and competence. With a view as above, it is safe to postulate that Firm size and capacity in terms of human resources available to the firm will play a major role that could directly relate to the extent of the firm's tax planning activities (Nwaobia, 2014; Nwaobia, et al., 2016). According to Khaoula, et al., (2013) and Rego (2003) firms with a large capacity of resources are able to achieve economies of scale via tax planning strategies and have the resources and incentives to decrease group tax. They maintained that these classes of firms have sufficient resources and better opportunities to undertake tax planning strategies by utilizing the tax incentives provided to them via the provisions of the tax law (Ftouhi, et al., 2014). The views were not different as Nomura (2017) who investigated the determinants of effective corporate tax rates in Japan using the latest financial data from listed companies also stated that larger firms are confronted with the challenges of higher effective tax rates. An effective tax planning strategy will reduce a firm's ETR, to the extent that it falls below the statutory tax rate.

The debate on how the size of a firm affects the ability of such a firm to initiate and coup with tax planning activities has been won. Md-Noor, et al., (2010), submitted that not all companies irrespective of the type of business have the same opportunities to carry out tax planning. It follows therefore that not all companies have the capacity to carry out tax planning. However small firms without resources and capacity but with a strong desire have the option of outsourcing though not without an enormous outflow of funds for payment of the attendant professional fees. Large firms employ tax experts to manage their tax departments and are able to design and execute robust tax planning schemes for their firms (Ftouhi et al., 2014). Setiadharna and Machali (2017), posited that a big firm size is an indication of growth because it gives a positive signal to investors which leads to an increase in firm value. Firm size is calculated or derived by the natural logarithm of total assets. It is an important control variable used by analysts and some of the notable ones are Kawor and Kportorgbi (2014).

$$\text{Firm Size} = \text{Natural Logarithm of Total Assets.}$$

## Theoretical Review

### Static Trade-off Theory (Modigliani and Miller, 1963)

Static trade-off theory was propounded Modigliani and Miller in 1963 which stated that firms' debt payments are tax-deductible because the risk involved are less by considering debt over equity. It simply means sourcing finance through debt is cheaper compared to source of finance through equity. Kyereboah-Coleman (2007) explained Modigliani and Miller model that firms' capital structure is a determinant factor to firms' market value and cash flow. It was further explained that the firms' profit value increases through the use of more debt. The theory further considers the ratio of increase in both debt and profitability as a gain which is an advantage to the firm and interest induced tax shield; it simply suggested the use of debt as substitute to equity. According to Voulgaris, et al., (2000), the leverage benefit of profitability of firms are based on cash inflow improvement and the interest in which tax deductible are charged. The theory revealed that at a point when there is balance in the present value of costs of bankruptcy, firm's borrowing policy will result to marginal value of tax advantage. Hence, it is advantageous for firms to adopt thin capitalization by usage of more debt in financing projects and investment than equity because it reduces tax liability.

## Empirical Reviews

Ifeoma (2022), Examine thin capitalization and firms' financial performance: Evidence from selected multinational and non-multinational firms in Nigeria. Secondary data was obtained from the annual reports of the firms from 2006 to 2020. Thin capitalization was proxy with debt-to-equity ratio, firms' financial performance was proxy with return on invested capital, while tax burden and firms' size were used as control variables. Data was analysed using descriptive statistic, unit root test, co-integration and panel data regression. The findings of this study concluded that thin capitalization had effects on firms' financial performance in both multinational and non-multinational firm in Nigeria. Hence, it was recommended that Nigeria government should introduce thin capitalization rules and other forms of tax avoidance strategies need to be properly checked from both multinational and non-multinational firms to ensure that effective tax rate is paid.

Nugroho and Suryarini (2018), studied the determinant of thin capitalization in multinational companies in Indonesia for 2014-2016. purposive sampling was used to select 40 companies, while Ordinal Least Square (OLS) was used as the analytical technique. The results showed that multinationalism tax haven utilization, tax uncertainty and firm size have a significant positive effect on thin capitalization. In a similar work of Jatmiko and Husodo (2018), the impact of thin capitalization on capital structure was examined for 2010 to 2017. Panel data regression was used for analysis and the results of the study showed that thin capitalization rule reduces the use of debt in the capital structure; also, the enactment of this rule increases the use of related party debt in the capital structure. Akabom and Ejabu (2018), evaluated the effects of thin capitalization and international law on performance of multinational companies in Nigeria for 2012-2016. Samples were drawn from 17 multinational companies quoted on the Nigerian stock exchange, while multiple regressions analysis was adopted. Their findings indicated that thin capitalization is revenue stripping techniques but it affects performance of multinational companies in Nigeria.

Merlo, et al., (2020), examined the impact of thin-capitalization rules on the location of multinational firms' foreign affiliates. Using information on nearly all new foreign investments of German MNCs, the study provides a number of new and interesting insights on how thin capitalization rules affect the decision of where to locate foreign entities. It was found out that stricter thin capitalization rules were found to negatively affect location choices of MNCs. In a recent work by Mooij and Liu (2021), the study considered what cost is the real effects of thin capitalization rules. panel data on multinational companies in 34 countries during 2006-2014 was explored. The study estimated that the size of adverse investment effect can be large; dependent on the statutory corporate tax rate and the tightness of the safe-haven ratio. Also, it discovered that negative investment effects are

more pronounced for highly-levered firms for which thin capitalization rules are more likely to be binding.

Erasmus and Uwikor (2020), investigated the relationship between tax planning strategies and the financial performance of quoted banks in Nigeria. The study adopted the ex post facto research design. Tax planning strategies were proxied by effective tax rate, thin capitalization, and capital intensity while financial performance was proxied by return on equity, earnings per share, and net interest margin. The population of this study consists of fourteen quoted banks in Nigeria. Secondary data was obtained from audited annual financial reports of quoted banks in Nigeria from 2006 to 2019. The study adopts the use of descriptive statistics for univariate analysis while hypotheses were tested using an ordinary least square regression statistical tool with the aid of E-view 10 econometric statistical software. The findings show that thin capitalization have a negative and insignificant impact on earnings per share of quoted banks in Nigeria. Empirical evidence revealed that thin capitalization, have a positive and significant impact on the net interest margin of quoted banks in Nigeria. The study concludes that tax planning strategies reduced tax liabilities leading to the financial performance of quoted banks in Nigeria and thus recommended that Bank should adopt thin capitalization and optimally utilize the best options that improved financial performance. Oyeshile and Adegbe (2020), carry out a study to evaluate the effect of corporate tax planning on the financial performance of quoted food and beverages firms in Nigeria. The study adopted an ex-post facto research design with a population of fifteen (15) quoted food and beverages firms on the Nigerian Stock Exchange and used also as the sample for ten years period, 2008 to 2018. The dependent variable was returned on capital employed and return on assets while the independent variable was proxied as effective tax rate, capital intensity, and thin capitalization. The data was obtained from the financial statements of the sampled firms and were analyzed using descriptive and influential statistics. The result of the study shows that thin capitalization have no relationship with financial performance measured with return on capital employed of quoted food and beverages firm, there is a significant positive relationship between the later and return on assets of the industry. Nwaobia, et al., (2016), examined the effect of tax planning strategies on firm liquidity in Nigeria. The study adopted an ex-post facto research design, and used secondary data from published financial statements of the sampled companies covering 154 firm-year observations were obtained. The dependent variable was firm liquidity measured by current ratio while the independent variable was proxied with capital intensity, thin capitalization, lease option, and industrial sector incentives. Firm size was employed as the control variable. Data obtained were analyzed using descriptive and regression analysis. The result reveals that thin capitalization exert negative effects on firm liquidity while. They recommended that appropriate measures and skills should be applied to determine the right mix of strategies that would reduce tax liability and increase firm liquidity.

## **METHODOLOGY**

The study employed an ex-post-facto and correlational research design. The population and sample size of this study consisted of all listed Healthcare companies on the Nigeria Exchange Group. The population includes 7 listed Healthcare companies on the Nigerian Exchange Group as of 31<sup>st</sup> December 2020, after delisting 2 others (Evans Medical and Nigeria German company) in July of that same 2020 (<https://www.ngxgroup.com>), within a specified period (2006 – 2020). We adopted this period due to the availability of data and the very reason that the span of time would permit a valid conclusion. The instrumentation was secondary data. The formulated research questions were analyzed with descriptive statistics. The hypotheses were tested using the Ordinary Least Square (OLS) Model regression analysis with the aid of E-view (10).

**Measurement of Variables**

Variables	Variable Time	Measurement	Sources
Profit after tax (PAT)	Dependent Variable	Sales less cost of sales, interest, and other allowable expenses	Olaoye and Bamisaye (2018)
Earnings per share (EPS)	Dependent Variable	Profit after divided by No of Outstanding shares	Adeduro, et al., (2020); Olaoye and Bamisaye (2018); Ali (2015)
Thin Capitalization (TC)	Independent Variable	Debt divided by total equity	Otuya and Omoye (2021); Oyeshile and Adegbe (2020); Nwaobia, et al, (2016);
Firm Size (FMS)	Control Variable	Log of total assets	Timothy, et al., (2020); Imuetinyan, et al., (2019)

Source: Researcher's Field Work, 2023

**Model Specification**

In this study, there are two main constructs; the independent variable and the dependent variable. Thin Capitalization (TC) as the independent variable is proxied by thin-capitalization (TC), and while the dependent variable is financial performance (FP) measured with profit after tax (PAT) and earnings per share (EPS) and these were controlled by firm size (FS). The model for the variables is denoted in the explanatory equations below:

$$\text{Financial Performance} = f(\text{Thin Capitalization}) \text{-----} (1)$$

As noted in the literature, there are firm-specific features that are likely to affect the degree of thin capitalization tax planning by companies. In order to control the influence of these firm-specific features, the model was further specified as:

$$\text{Financial Performance} = f(\text{Thin Capitalization, Firm Features}) \text{-----} (2)$$

Since financial performance is represented by two proxies of profit after tax (PAT) and earning per share (EPS) we recast equation (2) by decomposing it as follows:

$$\text{PAT} = f(\text{TC}) \text{-----} (2a)$$

$$\text{EPS} = f(\text{TC}) \text{-----} (2b)$$

To meet their respective empirical form, equations (2a) and (2b) are therefore restated into the basic panel econometric form as below:

$$\text{PAT} = \beta_0 + \beta_1 \text{TC}_{it} + \beta_2 \text{FS}_{it} \text{-----} 3(a)$$

$$\text{PAT} = \beta_0 + \beta_1 \text{TC}_{it} + \beta_2 \text{FS}_{it} \text{-----} 3(b)$$

Where:

PAT = Profit After Tax

EPS = Earnings per Share

TC = Thin Capitalization

FS = Firm Size (FS) as moderator

e = error term

i = cross-sectional variable

t = time series variable

For the effect of the moderator variable (FS) on the relationship, we created an interaction term model:

$$\text{FP} = \beta_0 + \beta_1 \text{TPS}_{it} + \beta_2 \text{FS}_{it} + \beta_3 \text{TPS}_{it} * \text{FS}_{it} \text{-----} 4$$

Where  $TPS*FS$  = interaction term

## Data Analyses and Results Interpretations

### Univariate Descriptive Analysis

**Table 1: Descriptive Statistics for Profit After Tax; Earnings per Share; Thin Capitalization; Firm Size**

	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
TC	0.146089	0.295	4.855	-7.868	1.49	90
FS	7544532	2855750	42862000	223907	8973629.00	90
EPS	24.51	14.5	746	-486	155.07	90
PAT	360301.1	114746	2961000	-464094	740609.90	90

The descriptive statistics in Table 1 is for all measures and dimensions of the dependent and independent variables. Thin capitalization relates to the extent of debt in a company's capital structure - more especially where the debt component in capital structure is much greater than the equity component. Thin capitalization had a mean value of 0.146 with a standard deviation of 1.49. The maximum and minimum values were 4.855 and -7.868 respectively while the median observation was 0.295.

Firm size (FS) measured in terms of size of assets had a mean value of 7,544,532 with maximum and minimum values of 4,286,200 and 223,907 respectively. Earnings per share (EPS) had a mean value of 24.51 implying that companies in the sample had average earnings per share of N24.51 (NGN). The maximum earnings per share for the companies in the period was 746 while the minimum was -486. Thus, the median range for earnings per share was 14.5 which implies a wide dispersal in earnings per share for the companies. This is further corroborated by the large standard deviation of 155.07. Finally, profit after tax (PAT) had a mean value of 360,301.1 with maximum and minimum values of 2,961,000 and -464,094.

### Panel Least Squares (Fixed Effects Model)

Tables 2 and 3 presents the results of Panel Least Squares (Fixed Effects Model) for measures of financial performance and dimensions of tax planning.

**Table 2 Panel Least Squares (Fixed Effects Model) for Profit After Tax; Thin Capitalization; Firm Size**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.325797	4.716265	1.553305	0.1245
LNTC	-0.057023	0.103162	-0.552749	0.5820
LNFS	0.288987	0.343993	0.840094	0.4035

R-squared: 0.620411; F-statistic: 12.58511; Prob. (F-statistic): 0.0000; Durbin-Watson statistic 2.062543

Table 2. shows the panel least squares (Fixed Effects) estimation result for profit after tax firm age; thin capitalization and firm size. Thin capitalization (LNTC) had a negative relationship with profit after tax (LNPAT). The coefficient of regression for the relationship between the variables had a value of -0.057023 with the implication that for every unit of further capitalization deterioration, profit after tax is predicted to decrease by -0.057023. Again like in the cases discussed earlier, the relationship between the variables was not statistically significant with a probability of the t-statistic value of 0.5820.

Furthermore, in all, about 62.04% of the variations in profit after tax (LNPAT) of pharmaceutical companies in Nigeria can be explained by corporate tax planning activities measured in terms of capital intensity (LNCI); firm age (LNFA); thin capitalization (LNTC); effective tax rate (LNETR); and the moderating variable - firm size (LNFS). The probability of f-statistic with a value of 0.0000 indicates that the model is a good fit for the research data. Finally, the Durbin-Watson statistic with a value of 2.062543 is indicative of the near absence of auto-serial correlation in the stated model.

**Table 2: Panel Least Squares (Fixed Effects Model) for Earnings Per Share; Thin Capitalization; Firm Size**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.456792	4.637693	1.823491	0.0721
LNTC	0.093181	0.101444	0.918544	0.3612
LNFS	-0.144201	0.338262	-0.426298	0.6711

R-squared: 0.483057; F-statistic: 7.19525; Prob. (F-statistic): 0.0000; Durbin-Watson statistic: 1.631596

Table 2 shows the panel least squares (Fixed Effects) estimation result for earnings per share; thin capitalization and firm size. Thin capitalization (LNTC) is also shown to have a positive relationship with earnings per share (LNEPS). The coefficient of regression for the relationship between the variables had a value of 0.093181 with the implication that for every unit of further capitalization deterioration, earnings per share are predicted to increase by 0.093181 units. Again like in the cases discussed earlier, the relationship between the variables was not statistically significant with a probability of the t-statistic value of 0.3612.

Effective tax rate (LNETR) had a negative relationship with earnings per share (LNEPS). The coefficient of regression for the relationship between the variables gave a value of -0.127692 - implying that a unit increase in effective tax rate is predicted to result in a -0.127692 units decreases in earnings per share of listed pharmaceutical companies in Nigeria. The relationship between the variables is further shown to be statistically significant as the probability of t-statistic with a value of 0.0461 was less than the critical probability limit of 0.05 - thus implying effective tax rate is an important predictor and determining factor of earnings per share of listed pharmaceutical companies in Nigeria.

In all, about 48.31% of the variations in earnings per share (LNEPS) of pharmaceutical companies in Nigeria can be explained by the corporate tax planning activities measured in terms of capital intensity (LNCI); firm age (LNFA); thin capitalization (LNTC); effective tax rate (LNETR); and the moderating variable - firm size (LNFS). The probability of f-statistic with a value of 0.0000 indicates that the model is a good fit for the research data. Finally, the Durbin-Watson statistic with a value of 1.631596 is indicative of a minimal problem of auto-serial correlation in the stated model.

## Test of Hypotheses

### Hypothesis one

**Ho1: There is no significant relationship between Thin Capitalization and Profit after Tax of listed Pharmaceutical Companies in Nigeria.**

**Table 3: Hypothesis 1**

Critical T-Statistic	1.987
Critical Probability of t-Statistic	0.05
Calculated t-Statistic	-0.552749
Calculated Probability of T-Statistic	0.5820
Number of Observation	90

Hypothesis one in Table 3 shows that the calculated t-statistic for the relationship between thin capitalization and profit after tax had a value of -0.552749 with a probability of the t-statistic value of 0.5820. On the other hand, the critical t-statistic gave a value of 1.987 and critical probability of t-value of 0.05. A close observation indicates that the calculated t-statistic is less than the critical t-statistic. This implies that the null hypothesis is not rejected. Thus, it is concluded that there is no significant relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria. This result is further corroborated by the calculated probability of the t-statistic (0.5820) which is higher than the critical (default) probability value.

### Hypothesis two

**Ho<sub>2</sub>: There is no significant relationship between Thin Capitalization and Earnings per Share of listed Pharmaceutical Companies in Nigeria.**

**Table 4: Hypothesis 2**

Critical t-Statistic	1.987
Critical Probability of t-Statistic	0.05
Calculated t-Statistic	0.918544
Calculated Probability of t-Statistic	0.3612
Number of Observation	90

Hypothesis two in Table 4 shows that the calculated t-statistic for the relationship between thin capitalization and earnings per share had a value of 0.918544 with a probability of the t-statistic value of 0.3612. On the other hand, the critical t-statistic gave a value of 1.987 and critical probability of t-value of 0.05. A close observation indicates that the calculated t-statistic is less than the critical t-statistic. This implies that the null hypothesis is not rejected. Thus, it is concluded that there is no significant relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria. This result is further corroborated by the calculated probability of the t-statistic (0.3612) which is higher than the critical (default) probability

**Hypothesis 3: Firm Size does not significantly influence the relationship between Tax Planning Strategies and the Financial Performance of listed Pharmaceutical Companies in Nigeria.**

### Moderating Variable Analysis

**Table 4:**

Panel EGLS Random Effects Model for the Relationship between Financial Performance and thin capitalization, and the moderating variable (Firm Size and Tax Planning Strategies)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.722528	4.542714	-0.159052	0.874
TPS	1.492954	1.026828	1.453947	0.1496
FS	1.104058	0.313637	3.520183	0.0007
TPSXFS	-0.104622	0.074441	-1.405427	0.1635

R-squared: 0.138392; F-statistic: 4.604458; Prob. (F-statistic): 0.004896;  
Durbin-Watson statistic: 1.847772

From table 3: it is observed that thin capitalization (TC) as a single variable is positively related to financial performance - thus, increasing the use of thin capitalization is predicted to lead to improvement in financial performance. However, the relationship between the variables was not statistically significant considering that the probability of the t-statistic of 0.1496 was more than the critical probability limit of 0.05. On the other hand, firm size had a statistically positive relationship

with financial performance. The moderating factor calculated as a product of firm size and thin capitalization (TC\*FS) had a non-significant negative relationship with financial performance - implying that the effect of the moderating variable on the relationship between financial performance and thin capitalization of listed pharmaceutical companies in Nigeria is not statistically significant. This is further affirmed by the low coefficient of determination (R-squared) value of 0.138392 which implies that corporate tax planning, firm size, and corporate tax planning multiplied by firm size (TPS\*FS) is only about 13.84%.

**Table 5 Summary of Hypotheses Results**

S/N	Hypotheses	Computed T-statistic	Probability of T-statistic	Critical T-statistic	Sign of B Coefficient	Critical P-Value	Decision
1	Ho1	-0.552749	0.582	1.987	Negative	0.05	Do Not Reject Null Hypothesis
2	Ho2	0.918544	0.3612	1.987	Negative	0.05	Do Not Reject Null Hypothesis
3	Ho3	-1.4054	0.1635	1.987	Negative	0.05	Do Not Reject Null Hypothesis

Findings of the study were that:

HO<sub>1</sub>: That there is no significant relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria.

HO<sub>2c</sub>: There is no significant relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria.

HO<sub>3</sub>: Firm Size does not significantly influence the relationship between Tax Planning Strategies and the Financial Performance of listed Pharmaceutical Companies in Nigeria.

## CONCLUSIONS AND RECOMMENDATIONS

Nigeria, being a country without TCRs makes thin capitalization strategy more beneficial to multinational firms than non-multinational firms because it reduces the effect of tax burden through the usage of more debt than equity in their capital structure and through tax haven. Thus, there is no significant relationship between thin capitalization and profit after tax of listed pharmaceutical companies in Nigeria. There is no significant relationship between thin capitalization and earnings per share of listed pharmaceutical companies in Nigeria. Firm Size does not significantly influence the relationship between Tax Planning Strategies and the Financial Performance of listed Pharmaceutical Companies in Nigeria. Hence the study recommends among other that, firms should ensure that proper analysis of strategies, cost, and benefits therefrom is done before embarking on it. Also, to reduce abuse of privileges, shelters and loopholes in the tax law, the Revenue should ensure less complexity in the tax law and regulations.

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