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CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS MANUFACTURING FIRMS IN NIGERIA

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ABSTRACT

This study investigated the effect of capital structure on financial performance of listed industrial goods manufacturing firms in Nigeria. The study developed three specific objectives, three research questions as well as three hypotheses. The study adopted ex-post facto research design and population of the study consists of Twelve (12) industrial goods manufacturing firms listed on the Nigerian Exchange group as at 31st December 2022. Ten (10) listed industrial goods manufacturing firms were selected to constitute the sample size employing purposive sampling technique for a period of years (2013 – 2022) was collated. The source of data collection was secondary data sources which were extracted from the annual reports and accounts of the firms studied. The data collected was analysed using descriptive statistics, unit root test, diagnosis test and Panel least square regression analysis with the help of eviews 12. The regression results showed that, there is a significant effect of equity capital, debt capital and retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria. The study generally concluded that there is a significant effect of capital structure and financial performance of listed industrial goods manufacturing firms in Nigeria from 2013 to 2022. The study recommended amongst others that listed industrial goods manufacturing firms in Nigeria should use more of debt capital because it increases their financial performance in term of earnings per share.

Keywords: Equity capital, debt capital, retained earnings and earnings per share

INTRODUCTION

The effect of capital structure on financial performance is considering of argumentative topic in literature of corporate finance and that sparked the financial economists whether to be financial or non financial firms. The global economy is witnessing investments movements, especially in recent decades couple with consistent of Jordan economy which developed as a result of its openness on the outside world, and this in turn led to expansion the operations and activities of Jordanian firms, therefore it requires financial sources to finance these operations and activities (Mustafa & Osama, 2022). Due to this Jordan economy statement on financial sources, capital structure has become the optimal source of fund in business operation, capital structure has been considered as one of the most important factors in firm financing policy due to its crucial role in corporate performance (Gambo et al., 2016). Capital structure refers to the combination of investment funds contributed by numerous investors and shareholders in form of debt and equity. It is considered as permanent investment collected through different sources of long-term debt and preferred stock (Rasheed et al., 2022). Capital structure is a decision on how a firm is financed, which is a complex task often subjected to the management and suppliers of fund. It connotes how a firm finances its asset through the combinations of equity and debt (Evbayiro-Osagie & Enadeghe, 2022). Capital structure decision remains a crucial decision by financial manager to ensure effective performance of the firm. According to Akintoye (2016) Capital structure decision is important for any business establishment arising from the need to maximize the wealth of business stakeholders and because of the fact that such decision has a significant impact on the firms' ability to compete in the competitive atmosphere. To effectively maximize the firm performance, management carefully analyze the capital structure

decision to achieve optimality. Corporate managers always try to arrive at and employ the optimal capital structure that will guarantee better returns on investment (Abata et al., 2017). So, to obtain optimum capital, the managers will have to act in the best interest of shareholders in such a way that they will have enough, but not excess free cash flow.

Statement of the Problem

The issue of how companies choose and adjust their strategic mix of securities has sparked a lot of discussion and debate in the corporate financial literature. Adeoye and Olojede (2022) stated that the problem of choosing between equity and debt confronts many firms, especially in funding their long term worthwhile investment opportunities. A firm contemplating to raise funds through the issue of debt must ensure that the earnings to be generated with such funds must at least be at equilibrium to the cost of debt. If the earnings that are generated fall below the cost of such funds, it will reduce the earnings due to shareholders because holders of debt instruments have prior claims to income before the equity holders. To realize the desired results, listed natural resources companies in Nigeria and even in other sectors need to plan for an optimum capital structure. In the manufacturing sector it is observed that the association amid capital structure and performance is for a matter of substantial deliberations for equally scholars and practitioners (Olaoye & Adesina, 2022). Strategic management look towards capital structure because it is related with a corporation's capability to satisfy numerous stakeholders demands. The problem of capital structure, therefore, arises from determining the quantum of each source of finance that will yield optimum return with minimal risks. It is essential to comprehend how organization's financing methods impacts their performance. Another problem of choosing capital structure in term of long term debt faced by firms is funding their long term investment opportunities. To finance the larger volume of a debt depends on the amount of interest on debt, financial distress cost, income taxes, imperfections in the market, taxes that are refuse to pay and corporate income etc. Long term debt will bring about increase in the desire of the firm when there is a decrease in the rate of interest. When there is an increase in leverage will provide an upsurge in financial distress. An increase in leverage of the firm will lead to firm's stock unattractive to investors and this is as a result of increase in financial distress. Firms might find difficult to satisfy a required service obligation, which could lead not only administrative expenses and legal expenses but also bankruptcy.

Due to these challenges in the choice of capital structure decision, prior studies such as Ashraf et al. (2017), Ajibola (2018), Salam and Shourkashti (2019), Adeoye and Olojede (2019), Tanko et al. (2021), Bindu (2021), Ayo and Muba (2021), Nwafor et al. (2022), Olaoye and Adesina (2022), Mustafa and Osama (2022), Alhaji (2022), Lawan et al (2022), Meshack et al (2022), Evbayiro-Osagie and Enadeghe (2022), Olaniyi et al. (2022), Idolor and Omehe (2022), Hossain et al. (2022), Ikin et al. (2022), Marwan et al. (2023), Obumneme et al. (2023), Kim et al. (2023) investigated the impact, effect and relationship between capital structure and financial performance in different sector of firms in Nigeria and global. With their result and mix findings, there seems to be a gap. Therefore, this present research aims to fill this gap through an empirical investigation into the effect of capital structure on financial performance of listed industrial goods manufacturing firms in Nigeria.

Research Objectives

The aim of the study was to investigate the effect of capital structure on financial performance of listed industrial goods manufacturing firms in Nigeria. Specifically, the objectives of the study are to:

i. determine the effect of equity capital on earnings per share of listed industrial goods manufacturing firms in Nigeria;
ii. determine the effect of debt capital on earnings per share of listed industrial goods manufacturing firms in Nigeria;

iii. ascertain the effect of retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria.

Research Questions

The following research questions were used for the study

i. What is the effect of equity capital on earnings per share of listed industrial goods manufacturing firms in Nigeria?
ii. What is the effect of debt capital on earnings per share of listed industrial goods manufacturing firms in Nigeria?
iii. What is the effect of retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria?

Hypotheses

The following hypothesis were raised for the study

H_{01}: There is no significant effect of equity capital on earnings per share of listed industrial goods manufacturing firms in Nigeria;

H_{02}: There is no significant effect of debt capital on earnings per share of listed industrial goods manufacturing firms in Nigeria;

H_{03}: There is no significant effect of retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria.

REVIEW OF RELATED LITRATURE

Conceptual Review

a. Capital Structure: Habimana (2014) defined capital structure as the proportion of debt and equity that the firm uses to finance its business. Dada and Ghazali (2016) described capital structure as a system in which equity as well as debts are employed for funding the firm's activities to yield optimum returns for the stakeholders to maximize firm's returns given a level of risk. Suardi and Noor (2015) observed that capital structure is basically a firm's financial framework. They went further to define capital structure as a combination between debt and equity capital maintained by a firm. They also continued that capital structure is a mixture of various long-term sources of funds and equity shares including reserves and surpluses of an enterprise. Adeoye and Olojede (2022) define capital structure as the integration of various sources of funds within or outside the firms' terrain in financing its worthwhile investments or projects with positive net present value. It implies how a firm finances its overall operations and sustains its growth by using different sources of funds. Olaniyi et al (2022) explained capital structure as a various ways of financing firms' operations; that is basically debt, equity, or both. The mix of long-term fund like debt, debenture, bond, preferences and equity share capital is capital structure. Meshack et al (2022) define it as the technique an establishment applies for financing based on a blend of long-term capital (ordinary and preference shares, debentures, loans, loan stock, etc.) in addition to short-term obligations like overdraft and other payables. According to Evbayiro-Osagie and Enadeghe (2022), capital structure refers to the percentage of long term funds (debt or equity) released or approved to embark on the activities of a business.

b. Equity Capital: Equity, is the money that is delivered to a company's regular shareholders after all of the company's short-term and long term obligations have been met in full (Sunday and Samson 2019). After the resolution of the claims made by preference shareholders, ordinary shareholders have the right to receive returns. The information on the firm is available to all shareholders, and the shareholders' votes give them total control over the activities of the company. According to Akinleye and Akomolafe (2019), equity is a kind of capital that is used by most companies. This form of capital allows the ownership of the firm to be gradually distributed among the shareholders. This is the value that would be returned to the shareholder in the event that all

assets were sold off and all obligations were satisfied. Equity capital is shareholder money available for business operations (owners' fund), typically made up of two categories namely contributed capital and retained earnings. Furthermore, contributed capital this is the money raised or spent in the business organization such as stocks ownership. Sibilkov (2009) stated that equity provides companies the opportunity to acquire funds without borrowing. This means that the money acquired in the form of equity will not be paid back since there belong to the owners of the company. Investors who acquired ownership rights (shares) in the company hope to recoup their investment from future earnings. The owners of the company have the opportunity to take part in sharing the profits of the company in the form of dividends or future capital gains. Conversely, if the company makes a loss, the shareholders have limited liability. This means that the shareholders will only lose the amount they invested in the company (Sibilkov, 2009).

c. Debt Capital: Dare and Sola (2018) defined debt as an organization's borrowing of cash to operate its activities. One of the advantages of using debt as a source of money is that when the loan is paid off, the connection ends and no more responsibilities exist. Onaolapo and Kajola (2018) confirm this by stating that debt entails borrowing from a third party while maintaining ownership. Debt refers to a contract between a debtor (borrower) and a creditor (lender), which may take the form of leases, bonds, notes, certificates, debentures, and mortgages (Akinleye & Akomolafe, 2019). Alhaji (2022) noted that debt is one of the major components in the capital structure of companies. It acts a means of obtaining funds for their business operations. It represents any agreement between a lender and a borrower. Debt instrument includes notes, certificates, bonds, debentures, mortgages and leases etc. The major attribute of debt funding is that the amount borrowed in addition to the interest, must be paid back to the providers of the fund at the agreed period of time. The agreed interest rate which must be paid on the borrowed money is usually set out in the contract agreement between the company and the fund provider. If the borrower does not fulfill their obligations set out in the contract, it can negatively affect their credit rating, which in turn can make it more difficult for the company to obtain funds for future investment which in return can result in financial failure (Nwafor et la., 2022). Even if a company suffers loss and they are unable to make the scheduled payments, they still owe debt obligation to the lenders.

d. Retained Earnings: Retained earnings is the profit generated from the business in the previous years that a company keeps to be used for reinvestment purposes which in turn strengthens the company balance sheet while serving as a seed for expansion and further growth. Investopedia (2020) defined retained earnings as the amount of net income left over for the business after it has paid out dividends to its shareholders. A firm's dividend policy is its long term financial strategy with regards to deciding how much earnings to pay out as against retaining them for investment in the firm. Retained earnings lead to division of profits between dividend payment to shareholders and reinvestment in the firm. Hence, there are no transaction and bankruptcy costs associated with retained profits. Retained earnings is a technique of financial management under which all profit after tax is not distributed amongst the shareholders as dividend but a part of profits is retained or reinvested in the firm. They are also called earned surplus, retained capital or accumulated earnings (Rasheed et al., 2022). Retained earnings are the most important sources of financing growth of a firm. The level of internal funds conveys information about firm's financial performance. Firms pay lower dividends, reinvest more of their earnings, and provide a greater percentage of their total returns in the form of capital gains. Firms with a few major investment opportunities would limit paying out a larger percentage of their earnings. For this reason, higher dividends are paid in stable, low-growth industries. By contrast, firms with lots of investment opportunities are likely to pay low dividends because they have profitable uses for the capital.

e. Financial Performance: A criterion variable is another name for a dependent variable. However, the terms are not exactly interchangeable: a criterion variable is usually only used in non-

experimental situations. Measures of financial performance take a variety of forms. These measures differ from each other on several dimensions, and many issues concern the choice of which particular financial measure to employ. For example, measures may be absolute, return-based, internal, and external, a level for a single period, a mean or a growth rate over several years, or a variability about a mean or a trend. Numerous indicators in measuring firm performance are mainly accounting based measures from financial statements as net profit margin, operating profit margin, return on equity, return on total capital, return on asset, earnings per share, price earnings ratio, sustainable growth rate (Nzotta, 2018), while volatility in returns and stock market returns are also employed as performance measures of firms performance (Nassar, 2017). Tobin's Q assessment of performance is also explore by some researchers which are combination of market performance and accounting assessment. A firm's financial performance refers to its ability to generate new resources from day to day operations over a given period (Bora, 2008). It involves enhancing shareholders' wealth and profit making which are among the major objectives of a firm (Mustafa & Osama, 2022). Accounting ratios derived from the balance sheet and income statement and also from data on stock market prices, are used to measure how better off a shareholder has become over time (Abata et al., 2017). The growth in firms' sales, the improvement in their profit margin, their capital investment decisions and capital structure decisions mainly influence the shareholder's wealth (Ajibola et al., 2018). Various indicators have been used to measure the financial performance of the firms by various scholars. The various ways of measuring company's financial performance are reflected in the company's ratios of Return on Investment (ROI), Return on Assets (ROA), Return on Equity (ROE), value added, among others which measure whether the owners' objectives are being met; the objectives of increasing shareholders' wealth through investing in business (Gathara et al., 2019). Therefore, financial performance is a general measure of a firm's overall financial health over a given period, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Gathara et al., 2019).

f. Earnings Per Share: Earnings per share is defined the profit in pence attributable to each equity share, based on the consolidated profit of the period after tax and after deducting minority interests and preference dividends, but before taking into account extraordinary items, divided by the number of equity shares in issue and ranking for dividend in respect of the period. Earnings per share (EPS) is a ratio that shows how much profit (return) obtained by investors or shareholders per share by dividing net income after tax with the number of ordinary shares outstanding. Earnings per share is the amount of income earned on a share of common stock during an accounting period (Major, 2019). Earnings per share can be used as an indicator of the company's success in managing the company. So that earnings per share is one way to measure success in achieving profits for shareholders in a company. EPS is used to see the development of the company's operations, determine the market price of the stock, and determine the amount of dividends to be distributed (Marwan et al., 2023) The growth rate of Earnings per Share (EPS) can be shown from the value of EPS for the period on the upcoming period and expressed as a percentage (%). The EPS can be formulated as follows:

$$\text{Earnings per share} = \frac{\text{Net income}}{\text{Number of shares of stock}}$$

Earnings per share is very important for investors in measuring the success of management in managing a firm. EPS can reflect the profits obtained by the firm in utilizing existing assets in the firm. High earnings per share reflect the level of effectiveness and efficiency of the firm's operations in managing the firm, thereby affecting investors to invest in the firm. Investments made by an actor in the form of purchases of company shares, but on the contrary if EPS are low, investors will not be interested in the firm. Then in addition to EPS, investors do an analysis of the capital invested in the company including ROE.

Theoretical Review

Modigliani and Miller's Trade off Theory

Modigliani and Miller's (1958) study gave a substantial boost to the development of a theoretical framework that has since been used by most financial studies (Abor, 2015). Modigliani and Miller (1958) concluded that capital structure is irrelevant to determining a firm's value (Ebaid, 2009). Modigliani and Miller's proposition is built on the assumption of a perfect market where there is no tax and bankruptcy disasters. As a response to this statement, the trade-off theory and pecking order theory were introduced. These theories were developed in opposition to the unrealistic assumption of Modigliani and Miller's proposition of perfect capital structure. These theories were developed to explain the rules of debt and equity in firms' capital structure performance in the real capital structure market founded on tax and bankruptcy disasters. In addition to the theories that explained choices of capital structure, other theories have focused on ethics and the way managers use capital structure. The main purpose of a manager is to maximize the value of the firm. However, issues arise when this central purpose conflicts with the goals of other parties involved, such as shareholders and stakeholders. This leads to the question of who should be given more attention when seeking to maximize the value of a firm: internal parties (such as employees) or external parties (such as society). The following section introduces the theories that outline capital structure choices and the responsibilities of managers towards the internal and external beneficiaries of a firm. The theory believed that firm value can be increased when firms effectively use their assets and it is assumed irrelevant if the assets originate from internal capital or external capital (Chen & Chen, 2011). Thus, Modigliani and Miller's Trade off theory of leverage believed that there are advantages attached to leverage in capital structure when the optimum capital structure is gotten. The Trade-off is idea that a company considered to choose how much of debt finance and how much of equity finance by balancing the costs and benefits of both source of finance. Trade-off theory identifies tax benefit from debt finances in the sense that interest paid on debt is tax free. They suggested under the trade-off theory that firm should employ more of debt in order to take advantage of tax shield, which will increase value. Under the M&M capital structure irrelevance theory assumes no taxes, that are tax shield is not considered, unlike the trade-off theory of leverage, where taxes, and tax benefit of interest payment are recognized.

Empirical Review

Empirical review entails and appraisal of other authors studies on a subject matter with the aim of identifying gaps and filling them appropriately. Literature is replete with capital structure and performance but has often produced conflicting findings. This section groups the literature into studies done in developed and developing countries as well as in Nigeria.

Marwan et al. (2023) investigated the impact of capital structure decisions on firm performance in Jordan (2010–2018). The dependent variable was market share while the main independent variables were the book value of total debt ratios, and firm-specific factors such as firm size, firm age, firm growth, and market-to-book value of equity served as control variables. The study used a quantitative research method using panel data analysis of 830 firm-year observations. Random effects model was employed to analyze the capital structure-performance nexus. The study finds that the book value of capital structure has a significantly positive relation to a firm's market share. The firm size, sales growth, and market-to-book value of equity had a significantly positive association with market share. Firm age did not meaningfully contribute to operating performance. Another important finding was that the strength of a positive relationship between the book value of total debt ratios and market share depends on the size of a firm and is mostly higher for larger-sized firms.

Obumneme et al. (2023) examined the impact of capital structure on the financial performance of Nigerian oil and gas companies. The study used an ex-post facto research design. Based on the

data's availability at the time of the inquiry, the study used an easy sampling strategy to gather secondary data. These data covers the years 2011 through 2020 and were compiled from the annual financial reports of five Nigerian oil and gas companies. Descriptive statistics and panel regression analysis were used to analyze the data. The short-term debt to total asset, long-term debt to total asset, total debt to total equity, and return on asset variables were investigated as proxies for capital structure and financial performance, respectively. The analysis' findings shows that while long-term debt to total assets has a negative significant influence on return on assets, short-term debt to total assets and total debt to total equity had positive insignificant impacts. It was suggested that, managers of oil and gas companies should reduce the amount of long-term debt they have because doing so has a negative effect on their performance.

Kim et al. (2023) determined the impact of capital structure on the profitability performance of ICT Firms using data envelopment analysis. In addition, this study applies a Tobit regression and Kruskal-Wallis one-way ANOVA to identify the impact of leverage, liquidity, and firm size, which are major capital structure factors influencing FV. The paper yields three main results. First, in the ICT industry, small and medium companies tend to have better profitability efficiency than companies of other sizes. Second, only small and medium ICT manufacturing companies' profitability efficiency is positively impacted by the current ratio. Third, only mid-sized service companies' profitability efficiency is positively impacted by the debt-equity ratio. The results have policy and practical implications for improving the FV of ICT companies.

Nwafor et al. (2022) investigated the effect of capital structure on profitability of listed pharmaceutical companies in Nigeria. Ex-post facto research design was utilized while secondary sources of data derived from the pooled data collected from annual financial report of four listed pharmaceutical companies. The data collected was analysed using descriptive statistics, correlation analysis and pooled ordinary least square regression analysis. The study revealed that total debt ratio (TDR) was found to be negatively related to profitability of pharmaceutical firms in Nigeria; while Debt equity ratio (DER) was positively related to profitability of pharmaceutical firms in Nigeria. The study recommends that pharmaceuticals companies in Nigeria should use the less level of debt because it decreases their profitability. Rather, the firms should rely more on their internal source of finance because it is the cheap and reliable source of finance.

Ezuma (2022) 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 boast return of assets of listed pharmaceutical companies in Nigeria.

Idolor and Omehe (2022) investigated the effect of capital structure on the financial performance of quoted deposit money banks in Nigeria. The study employed a cross sectional time series secondary data covering the period of seven years (2015-2021) and it was extracted from the audited financial statement of ten (10) banks listed on the floor of Nigerian stock exchange. The descriptive statistics, Pearson moment correlation and multiple linear regressions were used. The

correlation results showed that capital structure is negatively correlated with financial performance (ROA and ROE). Result from panel regression revealed that debt to equity though significant, impacted negatively on return on assets and return on equity, asset tangibility significantly impacted return on asset but insignificantly impacted return on shareholder's equity and also Age have a significant impact on return on asset and insignificant effect on return on equity. The study concluded that capital structure have a negative effect on the financial performance of deposit money banks in Nigeria and recommended that appropriate proportion of capital should be tailored towards viable investment opportunities for maximum return of shareholders wealth and increase in value of the firm.

Hossain et al. (2022) investigated the relationship between capital structure and profitability of food industry from an agro-based emerging economy perspective. The study compiled panel data food and allied companies, representing 64% of total population, listed in Dhaka Stock Exchange and administered ordinary least square (OLS), fixed effect model (FEM), and random effect model (REM) estimate to test the impact of capital structure on the profitability of listed food companies in Bangladesh. The current study usage three proxy variables as the measure of profitability, viz., return on assets (ROA), return on equity (ROE), and earnings per share (EPS). The study demonstrated that short term leverage has a significant negative impact on ROA (OLS model) and a strong positive impact on ROE (REM estimation) of the listed food and allied firms. The finding of study help to develop understanding of corporate managers, investors, policy makers, and academics about the relationship between optimum financing mix and financial performance of food industries and provides valuable insights from an agro-based emerging economy perspective.

METHODOLOGY

Research Design

Research design is define as the scheme outline or plan that is used to generate answers to the research problems. Ex-post facto and longitudinal research designs were used. The choice of Ex-post factor design was justified because the study relied on historical data, while the use of panel data justifies our selection of longitudinal design, which is a hybrid of time series and cross sectional data.

Population for the Study

The population of the study consists of twelve (12) industrial goods manufacturing firms listed on the Nigerian Exchange Group. According to Gomez-Meija et al., (1987) pooling performance over a five-year time span reduces variability and provides a better long term indicator. In addition, it provides a more reliable and valid measure of firm performance than annual measures. Also the researcher used a sample period that represented long term conditions implied in the chosen time period from 2013 to 2022. This study was limited to companies listed in the Nigerian Exchange Group because of greater availability and reliability of data than those not listed.

Sample Size and Sampling Techniques

The sample size of Ten (10) industrial goods manufacturing firms listed on the Nigeria Exchange Group selected via purposive sampling method. Sample was chosen based on those companies who were listed within the period of the study (2013- 2022). Some of the firms listed were after the study period (2013) and data were not available for the period hence they were eliminated in the sample selection. However, the total number of firms used represents 95% of firms in the industrial goods manufacturing subsector in terms of number, capital outlay, market capitalization, asset size and earnings. Companies included in the analysis are; Dangote Cement Company, LaFarge Wapco Plc, CCNN Plc, Berger Paint Plc, Greeif Nigeria Plc, Premier Paint Plc, Meyer Plc, CAP Plc, Cutix Plc, and Beta Glass Plc.

Sources of Data
This study is based on secondary data obtained from financial statements of industrial goods manufacturing firms listed on the Nigerian Exchange Group from 2013-2022. The data-set for this study were obtained from financial statements of the Ten (10) companies listed on the Nigerian Exchange Group from 2013 to 2022. Ten (10) industrial goods manufacturing firms in Nigeria were selected for this study.

Measurement of Variables
The variables of the study were measured using the procedures employed by Abubakar (2016) and Pandey (2010). Table 1 presents the variables and the procedure of measurement. The dependent variables constitute earnings per share while the independent variables include equity capital, debt capital and retained earnings.

Table 1 Measurement of variables

Dimensions/Measures	Category	Abbreviation	Measurements	Authors Source
Debt Capital	Independent Variable	DEBTC	This is the total debt value disclosed in the statement of financial position. It was transformed by log of total debt	Major (2019), Evbayiro-Osagie and Enadeghe (2022), Olaniyi et al. (2022)
Equity Capital	Independent Variable	EQTYC	This is the total equity value disclosed in the statement of financial position. It was transformed by log of total equity	Idolor and Omehe (2022), Hossain et al. (2022), Ikin et al. (2022),
Retained Earnings	Independent Variable	RETEA	This is the total retained earnings disclosed in the statement of financial position. It was transformed by log of retained earnings	Ezuma (2022), Marwan et al. (2023), Obumneme et al. (2023), Kim et al. (2023)
Earnings Per Share	Dependent Variable	EPS	(Net Income -Preferred Dividend)/ Weighted average common stock outstanding. But for the purpose of this study EPS were extracted direct from P or L account of the companies used.	Nguyen and Nguyen (2020) and Hossain et al (2022)
Firm Size	Controlling-Variable	FS	Log of total assets	Hasan et al. (2014) and Hossain et al (2022)

Source: *Compiled by Researchers (2023)*

Model Specification
In order to investigate the effect of capital structure on financial performance of listed) industrial goods manufacturing firms in Nigeria from (2013 to 2022), we develop the Multiple Linear Regression analysis using E-View 12. In line with the study objective and measurement of variables above, the required functional effect to test the developed hypotheses is presented as follows:

Model: Earnings Per Share (EPS)
EPS = f (DEBTC, EQTYC, RETEA, FS) ……1
This can be written in Panel Least Square (PLS) form as:

$EPS_{it} = a_o + a_1DEBTC_{it} + a_2EQTYC_{it} + a_3RETEA_{it} + a_4FS_{it} + U_t$.....2

$a_1>0$; $a_2>0$; $a_3>0$; $a_4>0$

Where: EPS = earnings per share, as proxy for financial Performance
DEBTC = debt capital as proxy for capital structure
EQTYC = equity capital as proxy for capital structure
RETEA = retained earnings as proxy for capital structure
FS = Firms size as a Proxy for controlling Variable
t = time period under study
a_o = constant
a_1-a_4 = parameter or coefficient of explanatory variable
u = error term

Method of Data Analysis

This study adopted descriptive statistics, Unit Root Test and Panel Least Square (PLS) multiple regression with the aid of Microsoft Excel and E-View 12. First, Microsoft Excel was employed to interpolate the raw data extracted based on the variables adopted for this study and the formula to be apply in calculating the measurement. Secondly, the data analysis was executed in three distinct stages. Firstly, a univariate (or descriptive) analysis was executed, followed by bivariate analysis and lastly, multivariate analysis.

ANALYSIS AND DISCUSSION OF RESULTS

Descriptive Statistic (Univariate Analysis)

Univariate analysis is a basic kind of analytical technique for statistical data. However, the data contains just one variable and does not have to deal with the relationship of a cause and effect. The main objective of the unvariate analysis is to describe the data in order to find out the patterns in the data. This is done by looking at the mean, median, standard deviation, Skewness, Kurtosis. Jargue- Bera and Probability etc.

Table 2 Descriptive Statistics of the Variables

	EQTYC	DEBTC	RETEA	EPS	FS
Mean	15.16007	13.74233	15.11619	10.67880	16.00039
Median	14.35840	12.57798	14.06449	3.095000	14.93850
Maximum	26.55448	21.83347	23.32215	118.9000	26.60031
Minimum	4.477337	8.459140	11.79239	0.010000	12.09610
Std. Dev.	3.286125	3.209801	2.724616	20.28600	2.744941
Skewness	0.306423	1.037588	1.379442	3.403631	1.332070
Kurtosis	4.683958	3.323843	4.192449	15.72917	4.828966
Jarque-Bera	13.38039	18.38014	37.63907	868.2108	43.51151
Probability	0.001243	0.000102	0.000000	0.000000	0.000000
Sum	1516.007	1374.233	1511.619	1067.880	1600.039
Sum Sq. Dev.	1069.063	1019.979	734.9297	40740.64	745.9356
Observations	100	100	100	100	100

Source: Author's Computation using E-Views, 12

The descriptive statistics of the test variables is provided in Table 2. It can be observed that the financial year for which the financial information has been collected ranges between 2013 -2022 of ten listed industrial goods manufacturing firms in Nigeria constituted an observations period of 100(10 x 10). The equity capital (EQTYC) of the listed industrial goods manufacturing firms having Mean value of 15.16 with Standard deviation 3.28 and it ranges between the Mini (4.47) and Max (26.55). The debt capital (DEBTC) of the listed industrial goods manufacturing firms having Mean value of 13.74 with Standard deviation 3.20 and it ranges between the Mini (8.45) and Max (21.83).

Also, the retained earnings (RETEA) of the listed industrial goods manufacturing firms having Mean value of 15.11 with Standard deviation 2.72 and it ranges between the Mini (11.79) and Max (23.32). It can be said that the equity capital is more consistent compared to retained earnings and debt capital of the listed listed industrial goods manufacturing firms since it has the highest Mean value, Standard Derivation, and Maximum value. Furthermore, the earnings per share of listed industrial goods manufacturing firms in Nigeria had a Mean value of 10.67 with Standard deviation 20.28 and it ranges between Mini (0.01) and 118.90. Size of the firms in terms of the total assets converted to its logarithm equivalent shows a Mean value of 16.00 and Standard deviation 2.74 and it ranges between Mini (12.09) and 26.60.

The skewness statistics indicated that all the three dimensions of capital structure (DEBTC, EQTYC and RETEA) and financial performance of EPS as well as FS are positively skewed which shown the variables has a long right tail. According to the information provided by kurtosis showed that all the variables debt capital (DEBTC), equity capital EQTYC), retained earnings RETEA), earnings per share (EPS) and firm size (FS) have leptokurtic values, which suggest that the variables are higher than the kurtosis value of (3) that is clearly mesokurtic. Finally, the Probability of the Jarque-Bera stat for all the variables DEBTC, EQTYC, RETEA, EPS and FS was less than 0.05 implying that the data on these variables were not normally distributed, hence, the researcher need to carry out a normality and diagnostics test to confirm the normality of the variables before further estimation.

Unit Root Test

Table 3 Results from the Augmented Dickey Fuller Unit Roots Test

	DEBTC	**EQTYC**	**RETEA**	**EPS**	**FS**
Level	0.580	0.2421	0.2376	0.0222	0.0007
1st difference	0.0015	0.0001	0.0026	-	-
Order of integration	1(1)	1(1)	1(1)	1(0)	1(0)
Remarks	Stationary	Stationary	Stationary	Stationary	Stationary

Source: Authors Computation using E-Views, 12

The stationarity properties of the data were examined using the Augmented Dickey-Fuller tests. From table 4.2 above, all the three variables that represent capital structure (DEBTC, EQTYC and ERTEA) were not stationary at levels, hence they were converted to 1st difference after which they were stationary at 1st difference. But the one variable that represent financial performance EPS) as well as firm size (FS) were stationary at levels, hence the researcher need not carry out further unit root.

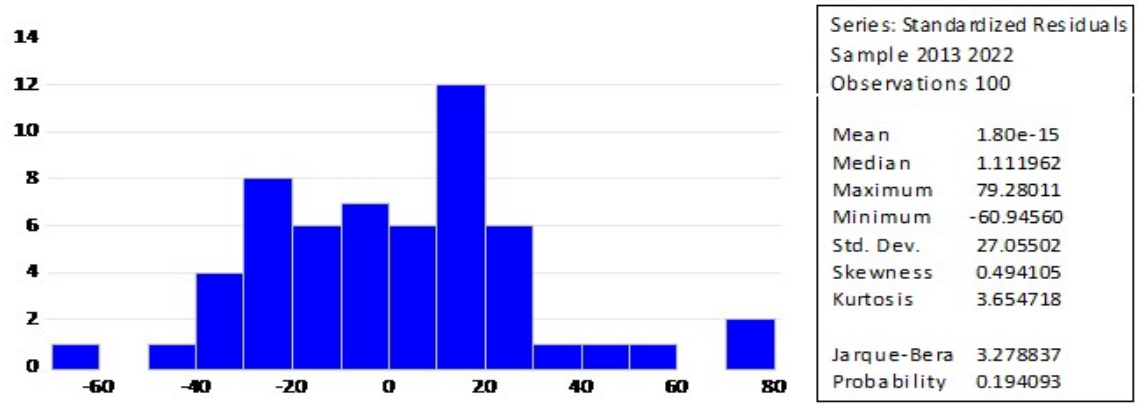
Diagnostic Test Results

The following sections discuss the results of the diagnostic tests that were conducted to ensure whether the data fits the basic assumptions of the classical linear regression model. The implication of the test, limits therein, test results and their discussion are also presented.

Normality Test

The normality test was conducted to establish whether the observed values follow a normal distribution. The Residual histogram normality test was used to establish whether the observed values of the variables on the estimation of the fixed model are normally distributed. The results of the Residual histogram normality test are presented in figure 1

Figure 1: Histogram of Residuals on Model



Source: Authors Computation using E-Views, 12

The figure 1 above disclosed diagnostic test using normality test of residuals histograms as criteria for decision. The result indicates that the skeweness value is positive implies that the model has long right tail, the kurtosis value is greater than 3 that is clearly mesokurtic and finally, Jarque-Beta probability value is greater than 0.05 (>0.05) and this means that that the residuals are normally distributed hence fixed effect regression model can be estimated.

Table 4. Regression Analysis of the Model

Dependent Variable: EPS
Method: Panel Least Squares
Date: 07/30/23 Time: 00:53
Sample: 2013 2022
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.26229	11.40151	2.654237	0.0093
EQTYC	-2.003878	0.994384	-2.015196	0.0467
DEBTC	-3.438005	1.454820	-2.363183	0.0201
RETEA	3.839701	1.993369	1.926237	0.0520
FS	0.387827	0.108953	3.559552	0.00058

R-squared	0.842681	Mean dependent var	10.67880
Adjusted R-squared	0.715890	S.D. dependent var	20.28600
S.E. of regression	19.07434	Akaike info criterion	8.773743
Sum squared resid	34927.72	Schwarz criterion	8.877950
Log likelihood	-434.6871	Hannan-Quinn criter.	8.815917
F-statistic	5.325670	Durbin-Watson stat	1.773587
Prob(F-statistic)	0.001945		

Author's Computation Using E views 12

Results in table 4.12 above showed that R^2 = 0.842 and adjusted R^2 = 0.715 that measured the proportion of the variations in earnings per share (EPS) of dependent variable attributed to equity capital (EQTYC), debt capital (DEBTC) and retained earnings (RETEA) of independent variables implied that, the dependent variable explained 71% (percent) of the variations in to equity capital

(EQTYC), debt capital (DEBTC) and retained earnings (RETEA) of independent variables. The remaining variation of 28.5% is the error term that attributed to other factors not included in the model. The F-statistic, 5.325 with a Prob (F-statistic) value of 0.001 showed that the model satisfies the overall goodness-of-fit statistical test. This means that EPS measures of financial performance were are able to explain EQTYC, DEBTC and RETEA of capital structure in sample. The Durbin-Watson Statistic of 1.773 explained that the model does not contain serial correlation which affirmed that the unit root test runed in table 3 is adequately tested.

Statistical Test of Hypotheses

Decision Rule

Significant/probability value (Pv) < 0.05 (level of significance = conclude significant influence.

Statement of Hypotheses Under The Model

H_{01}: There is no significant effect of equity capital on earnings per share of listed industrial goods manufacturing firms in Nigeria;

H_{02}: There is no significant effect of debt capital on earnings per share of listed industrial goods manufacturing firms in Nigeria;

H_{03}: There is no significant effect of retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria.

Decision: The results in table 4 disclosed the coefficient and t-Statistics of the estimated marginal effect of equity capital (EQTYC) on earnings per share (EPS) of listed industrial goods manufacturing firms in Nigeria. The coefficient and t-statistics of equity capital (EQTYC) was -2.003 and -2.015, indicating that equity capital (EQTYC) negatively affects earnings per share (EPS) of listed industrial goods manufacturing firms in Nigeria. An increase in equity capital (EQTYC) by 1 unit will lead to significant decrease in earnings per share (EPS). This negative effect is significant since the absolute value of P-value (0.0467) was less than 0.05. This simply indicated that the null hypothesis (**H_{01}**) is rejected and the alternate hypothesis (**H_{a1}**) was accepted .Therefore, it was concluded that there is a significant effect of equity capital on earnings per share of listed industrial goods manufacturing firms in Nigeria.

Furthermore, table 4 disclosed the coefficient and t-Statistics of the estimated marginal effect of debt capital (DEBTC) on earnings per share (EPS) of listed industrial goods manufacturing firms in Nigeria. The coefficient and t-statistics of debt capital (DEBTC) was -3.43 and -2.363, indicating that debt capital (DEBTC) negatively affects earnings per share (EPS) of listed industrial goods manufacturing firms in Nigeria. An increase in debt capital (DEBTC) by 1 unit will lead to significant decrease in earnings per share (EPS). This negative effect is significant since the absolute value of P-value (0.020) was less than 0.05. This simply indicated that the null hypothesis (**HO_2**) is rejected and the alternate hypothesis (**HA_2**) was accepted .Therefore, it was concluded that there is a significant effect of debt capital on earnings per share of listed industrial goods manufacturing firms in Nigeria.

Finally, the results in table 4 disclosed the coefficient and t-Statistics of the estimated marginal effect of retained earnings (RETEA) on earnings per share (EPS) of listed industrial goods manufacturing firms in Nigeria. The coefficient and t-statistics of retained earnings (RETEA) was 3.839 and 1.926, indicating that retained earnings (RETEA) positively affect earnings per share (EPS) of listed industrial goods manufacturing firms in Nigeria. An increase in retained earnings (RETEA) by 1 unit will lead to significant increase in earnings per share (EPS). This positive effect is significant since the absolute value of P-value (0.052) was equal to 0.05. This simply indicated that the null hypothesis (**HO_3**) is rejected and the alternate hypothesis (**HA_3**) was accepted. Therefore, it was concluded that there is a significant effect of retained earnings on earnings per share of listed industrial goods manufacturing firms in Nigeria.

CONCLUSIONS AND RECOMMENDATIONS

This study ascertained the effect of capital structure and financial performance of listed industrial goods manufacturing firms in Nigeria from 2013 to 2022. Based on the data analysis, and discussion of findings; the following conclusions are drawn: The study generally concluded that there is a significant effect of capital structure and financial performance of listed industrial goods manufacturing firms in Nigeria from 2013 to 2022. Other inclusions are;

1. Equity capital had significant effect with return on assets of listed industrial goods manufacturing firms in Nigeria,
2. Debt capital had significant effect with return on assets of listed industrial g oods manufacturing firms in Nigeria,
3. Retained earnings had significant effect with return on assets of listed industrial goods manufacturing firms in Nigeria,

Based on the summary of findings and conclusions above, the following recommendations were made:

1. It is recommended that listed industrial goods manufacturing firms in Nigeria should use more of debt capital because it increases their financial performance in term of earnings per share.
2. It is also recommended that listed industrial goods manufacturing firms in Nigeria should use more of equity capital because it increases their financial performance in term of earnings per share.
3. Listed industrial goods manufacturing firms in Nigeria should use less level of retained earnings because it may decrease their financial performance in term of earnings per share.

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