Capital Structure and Financial Performance of Nigeria Pension Sector Companies. The Pecking Order Theory Perspective

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ABSTRACT

The study empirically examined Capital Structure and Financial Performance of Nigeria Pension Sector Companies using the Pecking Order Theory Perspective. The study used return on assets (ROA), return on equity (ROE) and earnings per share (EPS) as dependent variables, equity ratio of total equity and total assets (TETA) was used as independent variable, while liquidity ratio of current assets and current liabilities (CACL) and Firm size using companies' total assets (TA) were used as control variables. The data were sourced between 2020 and 2024 from annual reports and accounts of Pension fund administrators (PFAs) and Pension Fund Custodian (PFCs) regulated by the National Pension Commission in Nigeria. Using descriptive statistics, correlation, and ordinary Least Squares (OLS) regression, the study analyzed pooled panel data for fourteen sampled Nigerian Pension sector firms. The study revealed that capital structure exerts a significant and adverse influence on Pension Fund firms' performance in Nigeria thereby confirming that pecking order theory is valid in Nigerian as it relates to Pension Fund administrator and Custodian firms. The study therefore recommends that pension firms prioritize internally generated funds (retained earnings), when financing profitable investment opportunities before resorting to debt and, ultimately, external equity. This approach can reduce the financial risks and costs associated with external financing and improve sustainable financial performance.

Keywords: Capital structure, Earnings per share, Financial Performance, Liquidity ratio, return on assets, return on equity.

INTRODUCTION

The relationships between capital structure and financial performance of firms have been a subject of discussion amongst scholars of finance since the 1950s. Capital structure is generally described as the combination of debt and equity that make up the capital base of an organization. Financing and Investment decisions are major decision faced by managers of firms. Companies assets can either be financed through internally generated funds (equity) or external generated funds (debt) sources depending on the preference of the stakeholders that takes decision on the company as both internal and external sources of financing capital structure both have their "pros and cons" and as such choosing an optimum capital structure that maximize firms value as a result on embarking on profitable ventures with good positive NPV is a vital strategic decision organizations have to make. This decision is vital as it affects the performance of the company.

Capital structure is a significant aspect of corporate finance, and it has attracted a lot of interest among professionals, academic and other stakeholders especially as regards arriving at an optimum capital structure ratio and the impact of such on the performance and growth of companies.

The pecking order theory by Myers produces real insight into the theory of capital structure decision. This logic is based on the level of risk associated with each finance option in order of less riskiness i.e. retained earnings, low risk secured debt, unsecured debts then equity. For a purely equity-financed firm, the whole of its after-tax cash flows (profit) is a benefit to the shareholders inform of dividends and retained earnings. However, firms with certain percentage of debts in their capital structure shall devote a portion of the profit after tax to servicing such debt.

Pecking order theory tries to avoid the adverse signals given out by either equity or debt financing (in terms of whether shares are over or under valued), by relying as much as possible on internally generated finance (retained earnings) and when that is not enough to accommodate the need they can use debt until debt capacity

is reached and only then move to equity (Lumby & Jones, 2007).

Performance as a concept is used to express the accomplishment of a given task with efficiency and effectiveness. Firm performance can be defined and measured in terms of profitability, growth, market value, total return on shareholders, economic value added, customer satisfaction, and also based on the stakeholders' expectations (Carroll, 2004). The common goal of the company is to maximize shareholder value, since shareholders provide capital with the expectation that it will be deployed to business ventures with positive NPV which will in turn increase the wealth of shareholders. Increase in wealth is the main if not the sole source of benefit from company ownership. Wealth can be defined as capacity to consume or simply as money or cash. Implying that management need to take decisions that will maximize shareholders' purchasing power.

Shareholders' wealth maximization is normally translated to mean maximizing the current worth of the company shares. Financial performance of a firm relates to its motive to maximize profit to shareholders, stakeholders and assets (Chakraborty, 2016). Financial measures are indication of financial performance of a firm, and these include return on assets, return on equity, return on investments, earnings per share among others. Capital structure and firm performance are expected to be correlated and have influence on each other.

The pension sector has total of 20 Pension Funds Administrators (PFAs), 3 Pension Fund Custodians (PFCs) and 3 Closed PFAs. The PFAs manages retirement savings account (RSA) of contributing members by investing in National Pension commission approved investments and growing the investment with returns, this is done at a fee as approved by the pension commission. Competition is very intense among the PFAs as they all put in efforts to ensure they have substantial RSA funds in their custody to boost their income, which is mainly in form of fees accrued to them as fees are either as a percentage of funds under management or as a percentage of the income earned on funds under management. The custody and disbursements of the funds sit with the PFCs. The total fund under management across the pension sector as of December 2024 was NGN22.51 trillion (PenCom, 2024). Most of the players in the sector are mostly equity-financed with low gearing. This paper relates to other previous studies on capital structure and financial performance in Nigeria. Most of these studies are either in the manufacturing or financial industry (banks) but little or no work has been done to focus specifically on the pension sector. It is against this backdrop that the study empirically examined the relationship between capital structure and financial performance of the companies operating within the Nigeria Pension sector as regulated by National Pension Commission with specific factors that relate in one way or the other to the sector by testing the pecking order theory of capital structure.

LITERATURE REVIEW

Capital Structure

Capital structure is the mix of different sources of long-term finances such as equity shares, preference shares, debentures, long-term loans and retained earnings. Capital structure is essential to how a firm finances its overall operations and growth by using different sources of funds. Financing decisions generally facilitate the survival and growth of a business enterprise, which calls for the need to channel efforts of business towards realizing efficient decision, which will protect the shareholder's interest. Capital structure decision is therefore very critical and fundamental in the life of a business. This is not only to maximize profit to the shareholders but also due to the impact such a decision has both on sustainability and its ability to satisfy external objectives (Chechet & Olayiwola 2014). An efficient capital structure is crucial for balancing risk and return, enhancing financial stability, and maximizing profitability. A firm's risk profile is heavily influenced by capital structure decisions, with debt providing financial leverage that amplifies returns and raises financial risk (Richard, Halkawt, Leviticus, Bright & Hayford, 2025).

Maximization of shareholders' wealth is the objective of financial decisions with the assumption that the company is a transmission vehicle for the transmission of resources from shareholders into investment and back to the shareholders in return and this generally takes the form of cash. Finance decisions are economic, or

resource allocation decisions and the economic unit of account is cash, hence decisions are evaluated in terms of their cash flow impact (Lumby & Jones, 2007).

There are several factors that determine firms' choices of appropriate capital structure. The most popular factors in capital structure studies are size, profitability, collateral values, non-debt tax shields, financial distress and the internal cash deficit (Voutsinas & Meyer, 2025). Some organizations have enough earnings to undertake their desired investment without taking debt while others may not want to take debt as they prefer to be debt free. Business size and cash flow availability also influence capital structure decisions of firms.

Capital Structure in Pension Fund Administration and Pension Custodian Firms

The capital structure of Pension Fund Administration and Pension Funds Custodian Firms is predominantly influenced by regulatory requirements and industry-specific operational considerations. Regulatory capital requirements necessitate the maintenance of adequate equity capital. Furthermore, high liquidity demands encourage conservative financing policies aimed at preserving financial stability and meeting stakeholder obligations. Consequently, PFAs rely extensively on retained earnings as a sustainable source of finance, resulting in capital structures that are generally characterized by low leverage and strong equity positions. Such financing arrangements promote regulatory compliance, financial resilience, and long-term operational sustainability.

Financial Performance

Financial performance of a firm is its capacity and ability to generate sustainable profits. Measuring firm performance using financial analysis has been a traditional tool for investors, decision-makers, creditors, and other stakeholders (Delen, Kuzey and Uyar, 2013) because many specialists consider that firm performance is quite the same with financial performance. In increasingly competitive markets, firms must identify and manage resources efficiently to maintain or improve financial performance. To optimize value, firms often seek the most cost-effective financing sources, balancing internal sources like retained earnings with external sources such as loans and equity capital (Adu and Abimboye, 2025).

The performance of a firm has to do with how effectively and efficiently it is able to achieve the set goals which may be financial or operational. The profitability of a firm measures its gains over its operative years. The financial performance of a firm relates to its motive to maximize profit both to shareholders and on assets (Chakravarthy, 1986).

Financial performance measures such as return on assets show firms effectiveness in terms of maximizing shareholders' wealth which is the core objective of companies**.** Most commonly used financial performance measurements in relation to capital structure by researchers are ROA and ROE. This study includes EPS as an additional performance measure to assess the implications of financing decisions for shareholders.

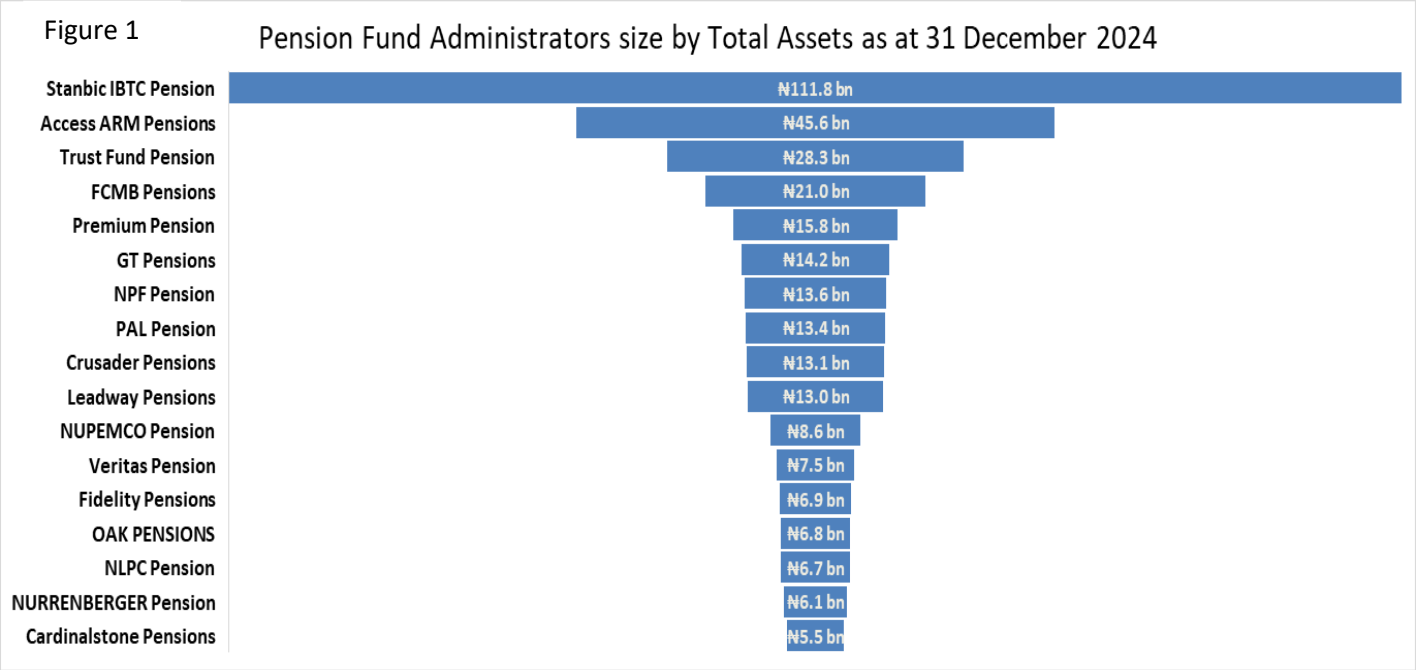
Higher ROA are indication of effective management of assets of the company. Net profit attributable to shareholders is known as ROE, and shareholders are interested in higher ROE. Earnings per share (EPS) indicate how much profit each outstanding share of common stock has earned, the higher a company's EPS, the more profitable it is considered to be.

The relationship between risk and return is of utmost importance in making finance decision (Lumby & Jones, 2007). The increase in debt will lead to increase in amount risk (Financial risk) borne by shareholders and as a result, shareholders will require additional reward in terms of compensation. The reward for risk taken is the return on investment which in terms of equity capital is dividend yield plus % capital growth. One of the immediate measures of reward for risk taking is provided by EPS. The risk and return trade off in capital structure is viewed in terms of the impact on the gearing ratio and EPS, hence the inclusion of EPS as part of dependent variables in the study.

Firm's Size

The size of a firm has been viewed as one of the specific characteristics that determine its capital structure. Rajan and Zingales (1995) states that: Larger firms tend to be more diversified. Firm size affects job satisfaction, investment opportunities, and the capacity to withstand financial shocks (Adu and Abimboye, 2025). Size in this study is represented by Total Assets (defined as company total fixed assets plus total current assets). Size is included as an independent variable, because it is associated with survival.

Figure 1



Note. Authors Compilation 2026

To provide industry context, firm size within the Nigerian pension industry can be illustrated using total assets and AUM. Stanbic IBTC pension is the leader in the pension sector in terms of size measured based on both Total assets and Assets under management (AUM) with a total asset of close to NG112 billion and AUM over NGN7 trillion. The sector total fund under management as at the year ended 2024 is NGN22.51 trillion (PenCom, 2024).

Figure 2

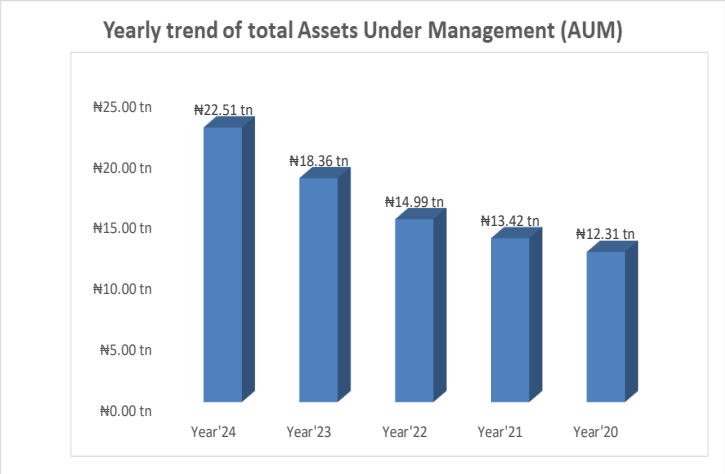
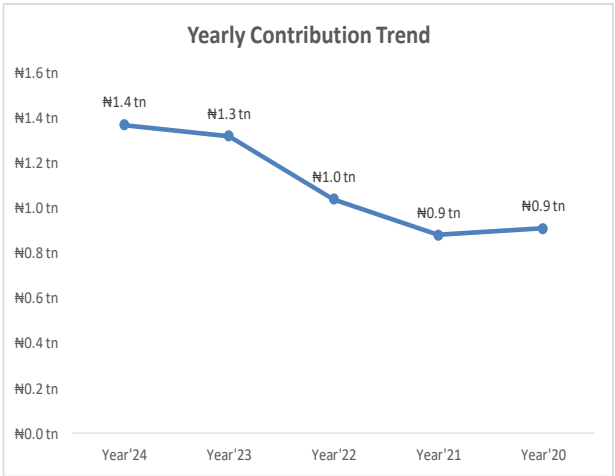


Figure 3



Note. National Pension Commission (PenCom) - Authors compilation and analysis 2026

Theoretical Framework

There have been different variants of capital structure theories since the advent of the traditional and Modigliani and Miller theories from the 1950s. The arguments for and against the earlier theories led to the growth and development of other capital structure theories such as Agency cost theories, Trade off theory and Pecking order theory. Researchers have conducted a series of investigations to validate or refute the concepts embedded in these theories especially as it relates to the relationship that exists between capital structure and firms' financial performance.

Traditional Theory

Traditional ideals, which believed that if the proportion of debt continues to increase, it will get to a stage where it will increase the financial risk which in turn will influence the decision of ordinary shareholders in requesting for higher returns on their investments. According to the traditional theory, the value of the firm can be increased initially, or the cost of capital can be decreased by using more debt as the debt is a cheaper source of funds than equity. Thus, optimum capital structure can be reached by a proper debt-equity mix. Beyond a particular point, the cost of equity increases because increased debt increases the financial risk of the equity shareholders. The advantage of cheaper debt at this point of capital structure is offset by increased cost of equity. After this there comes a stage when the increased cost of equity cannot be offset by the advantage of low-cost debt. Thus, overall cost of capital, according to this theory, decreases up to a certain point, remains unchanged for moderate increase in debt thereafter, and increases or rises beyond a certain point. Even the cost of debt may increase at this stage due to increased financial risk. Traditional view concludes that some gearing will be advantageous, but not too much and just what is optimal gearing ratio is a matter of trial and error.

Modigliani and Miller Theory

Modigliani and Miller 1958 relating to zero corporate tax regime, and their subsequent work in 1963 relating to a standard corporate tax regime have a different view from the traditional ideals. Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words, Modigliani and Miller approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm. Modigliani and Miller presented the case for the irrelevance of capital structure. Modigliani and Miller (1958) irrelevance theory posits that capital structure doesn't affect firm value. They attribute debt's benefits to tax shields and a lower cost of capital, potentially increasing returns to equity holders.

Modigliani and Miller approach is based on the following important assumptions:

i. There is a perfect capital market.
i. There are no retained earnings.
ii. There are no corporate taxes.
iii. The investors act rationally.
iv. The dividend pay-out ratio is 100%.
v. The business consists of the same level of business risk.

Modigliani and Miller 1961 concludes that companies should gear up as much as possible and that under specific assumptions of personal tax regime, which may or may not be valid that the capital structure decision has no impact on value of company and so is irrelevance from the point of view of shareholder's wealth (Lumby & Jones, 2007).

Trade Off Theory

The trade-off theory stipulates that firms have an optimum level of capital structure which maximizes their value. This optimal capital structure is determined by the tax advantages of debt finance and by the financial distress and agency conflicts costs that arise implying that firms maintain target leverage ratios. The trade-off theory predicts that there is an optimal level of capital structure for each firm derived from the tax benefits of debt and the financial distress (bankruptcy) costs that it creates. The theory states that efficient capital mix depends on

the benefits that can be derived from a particular source of financing as well as the costs involved. For instance, debt financing has tax relief benefits while bankruptcy costs should be considered along the line. Considering the cost-benefit analysis of the option, decisions on capital mix will have a strong effect in influencing the company's performance. This theory argues that while investment decision and firm assets are held constant, an optimal capital structure is attained when the tax benefit of debt equals to leverage associated costs which include financial distress, bankruptcy and agency (Myers, 2001). The theory assumes the existence of different target leverage for different firms due to firm's specific factors and also believes that firms are already at their presumed targets (Myers, 2001). The trade-off theory indicates that firms with high profits will enjoy the benefit of tax shield by the increased use of borrowed funds without any risk of distress financially, thus presupposing that a particular firm can make use of a high level of debt in their capital structure (Kausar, 2014). Critics of the theory is that it assumed that there is no cost of adjustment, it also ignores the impact of retained earnings on the capital structure as this earning that is retained may have no cost or risk (Frank & Goyal, 2019). The Trade-Off Theory of Capital Structure stands as the most extensively examined and validated framework within corporate finance theory. The theory serves as a useful capital structure framework though with some criticism because it requires firms to calculate debt benefits precisely and distress costs accurately (Shiro & Biiranee, 2025).

Agency Cost Theory

The Agency Cost theory states that an optimal capital structure is attainable by reducing the costs resulting from the conflicts between the managers and the owners. The theory hypothesis holds the view that the only control measure to reduce agency cost and force the managers to act more in the interest of the owners is the introduction of debt and increasing it higher than equity. If the ratio of debt is higher in firm's finance structure, the fear of liquidation, debt servicing, insolvency which may result in loss of job to the managers will lead to reduction in the cost, lead to efficiency and finally improve the firm's performance. We can therefore deduce that from the agency cost theory, equity should impact negatively on profitability while higher debt relative to equity in the debt ratio should impact positively on profitability. The theory opines that capital structure that is optimal is achieved at the point where the benefit accruing to debt financing offsets the agency cost of borrowing or debt financing (Brendea, 2018). However, this theory was criticized that it only described the processes of the behavior of human beings and does not reflect the overall motivation behind the behavior of different people (Baumuller, 2007).

Pecking order Theory

Myers and Majluf (1984) postulated that firms' managers prefer internal available fund first rather than external debt. It favors retained earnings, then debt then equity as the last choice and following strict dividend policies. The Pecking order theory concludes that company capital structure decisions are not determined by trade-off consideration of the costs and benefit of using debt as postulated by Modigliani and Miller (Lumby & Jones, 2007). The theory is based on first identifying the amount of finance required to undertake all profitable / positive NPV projects that have been identified by the company and the amount of retained earnings available and the debt capacity of the company. Pecking Order model ignores concept of capital structure that is optimal and did put the effect of tax shield into consideration (Frank & Goyal, 2019).

The Pecking order theory is based on the idea of asymmetric information between companies' managers and external investors. This may lead to investors reading signals into most financing decisions that either the share price is overvalued on stock market, or the cost of debt is too low. Managers will want to avoid possibility of giving this undesirable signal by using retained earnings, after exhaustion then they consider external finance. There is no well-defined target debt equity mix in pecking order theory because there are two types of equity, internally and external, one at the top of the pecking order and one at the bottom. Myers, 1984 stipulates that firms will always prefer to use internal rather than external finance due to the fact that internal finance does not suffer from informational asymmetry problems.

The Pecking order theory explains why most profitable firms generally borrow less**,** not because they have low target debt ratios but because they don't need outside money. Less profitable companies' issues debt because they do not have internal funds sufficient for their capital investment programs and because debt financing is

first on pecking order of external financing. Highly profitable firms with limited investment opportunities work down to low debt ratios.

Researchers on capital structure have suggested that Pecking order work best for large, mature firms that have access to public bond market (Brealey, Myers, Allen and Mohanty 2012), but this study is not completely in agreement with this assertion as even smaller companies in pension sector made reasonable profit with good retained earnings during the period of the study. The study supports the assertion that more profitable companies would use less debt because of the greater availability of retained earnings, companies can build up cash reserves (held in form of marketable securities) so that if at any future point in time, the retained earnings are insufficient then they can use it – hence why most low leverage PFA are highly liquid with high liquidity ratios averaging ratio 6:1 for the period under review implying they can meet their current obligations easily.

The pecking order theory stresses the value of financial slack. Having financial slack means having cash, marketable securities, readily saleable real estate, ready access to debt market or to bank financing, as without sufficient slack, the firm may be caught at the bottom of the pecking order and be forced to choose between issuing undervalued shares, borrowing and risking financial distress, or passing up positive NPV investments opportunities. Though there is also an aspect of managers having unnecessary financial slack too.

Empirical Review

Different researchers have produced conflicting and divergent views on capital structure and financial performance empirical analysis globally. The reasons for the divergence might be as a result of sample size, selected industry / firms and statistical analyses adopted. It could also be as a result of variables used as the dependent and independent variables.

This study follows the pecking order theory as theoretical framework; the theory posits that there is no capital structure that is optimal. The choice of this theory is to test applicability of the theory to the relationship that exists between capital structure and firm performance of firms such as the Pension sector which are zero or low geared and see the impact on the performance of firms in the sector. It is expected that financing business using mostly internally generated funds is expected to influence earnings positively as costs associated with borrowings will be eliminated, which in turn improves business performance.

The results of this work will give a clear direction on the impact of capital structure on firm performance using pecking order framework, thereby updating existing studies in this regard. The outcome of the study will be useful to the regulatory authorities, especially National Pension Commission (PenCom), government, investors and managers (principals) and the findings and recommendations of the study will form part of the benchmark for assessing this highly regulated firms and also help in boosting the growth of the firms which impeccably translate to shareholders' wealth maximization.

Rajan and Zingales (1995) in their study find out that more profitable firms have low debt ratio. The study was carried out on large International listed firms in Canada, France, Germany, Italy, Japan, United Kingdom and USA using financial data for the period from 1987-1991. The study used leverage as dependent variable calculated as total debt to total assets while four independent variables were used to analyze the determinants of capital structures across the G-7 countries: the tangibility of assets, market-to-book ratio, logarithm of sales as a size proxy, and a measure of profitability. The result found that profitability is negatively correlated with leverage while size is positively correlated with leverage using the Ordinary Least Squares estimates.

Richard et al 2025 examined the impact of optimal capital structure on financial performance among 750 non-financial firms listed on the New York Stock Exchange across 17 sectors from 2013 to 2022. They based their analysis on different levels of equity and debt financing ratios. Their investigation was guided by the tradeoff theory with data analysed using random effect, fixed effect, and two-step Generalized Method of Moments (GMM) estimation techniques. The study revealed that equity ratio consistently showed a negative and significant effect on ROE suggesting that higher equity relative to total assets lowers profitability from the perspective of equity holders; debt-to-capitalization ratio had a positive and significant impact on ROE suggesting that a greater proportion of debt compared to total capital is linked to higher profitability from the

viewpoint of equity holders; long-term debt-to-capitalization ratio was found to have a negative and significant impact on ROE suggesting that a higher proportion of long-term debt compared to total capital is linked to worse profitability from the viewpoint of an equity holder; debt-to assets ratio exhibited a positive and significant impact on ROE suggesting that when the debt amount is higher than the overall assets, it leads to greater profitability for equity holders; long-term asset ratio had a negative and significant impact on ROE suggest that having a larger proportion of long-term assets compared to total assets is linked to reduced profitability from the standpoint of equity holders. Their results indicated that strategic use of debt has a positive effect on both ROA and ROE when applied to projects with returns exceeding borrowing costs.

Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001) examined capital structure in developing countries. They analyzed capital structure choices of firms in 10 developing countries including India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan, and Korea using annual accounts for 100 largest publicly traded companies in each country from 1980 to 1990. They used capital structure ratio of firm's total book-debt ratio as its total liabilities divided by total liabilities and net worth as dependent variable and return on assets (ROA) as the earnings before interest and tax divided by total assets as measures of profitability as one of the independent variables. Using cross-sectional regression analysis of the variables, the study revealed that profitability has negative relationship with capital structure and the relationship is highly significant. The study pointed out that the importance of profitability is related to the significant agency and informational asymmetry problems in these countries, and to the relatively undeveloped nature of their long-term bond markets. They found that the variables that are relevant for explaining capital structures in the developed countries are also relevant in developing countries, despite the profound differences in institutional factors across these developing countries. Debt ratios in developing countries seem to be affected in the same way and by the same types of variables that are significant in developed countries and also that country specific factors clearly matter as much as the financial variables. The study concludes that the more profitable the firm, the lower the debt ratio, regardless of how the debt ratio is defined and also that profitable firms have less demand for external financing. This finding is consistent with the pecking order hypothesis.

Olushola, Mengze, Chimezie and Chinedum (2022) assessed the impact of capital structure on firm performance in Hong Kong using data of listed companies on Hong Kong Stock Exchange. Their study was conducted among a sample size of 202 largest listed companies with data analysis over (5) five years' period between 2014 to 2018. Using a panel data model approach, they used return on assets a proxy for performance, while total debt was used as proxy for capital structure. Their result shows that the relationship between total debt ratio and return on assets is significantly positive.

Schulz (2017) used the panel data of small and medium-scale firms in Netherland to evaluate the effect that capital structure has on their performances between 2008 and 2015. The research utilized the panel regression method, and the results showed a negative and significant relationship between capital structure and return on assets (performance measure), and this strongly supports the theory of pecking order.

Al-Nsour and Jresat (2018) investigated the effect of capital structure on the performance of Jordanian Industrial Public Shareholding Companies Listed in Amman Stock Exchange (ASE), for a period of ten years (2007-2016). Multiple regression analysis was used to examine the effect of capital structure measured by debt ratio, debt-to-equity ratio, on performance measured by return on assets and return on equity. The outcome of their results indicated a negative statistical relationship between return on assets and debt ratio and also return on assets and debt-to-equity ratio.

Anarfo (2015) observed that there exists no relationship that is significant between elements of capital structure and firm's performance in Africa. The relationship between debt ratios and return on assets which is a measure of profitability is negative, indicating that when banks performs well they would have a lot of retained earnings and will therefore depend less on debt since they can rely on their retained earnings to finance their operations, and this confirms the pecking order theory. His study was to examine the determinants of capital structure of banks in Sub-Sahara Africa.

In Nigeria, several research has been carried out on capital structure and financial performance mostly focusing on manufacturing companies. Abubakar and Ahmad (2025) investigated the impact of various capital

structure components (Equity ratio, Debt ratio and Debt to Equity ratio) on the Return on Equity (ROE) of listed industrial goods companies in Nigeria from 2012 to 2021, they used ordinary least squares (OLS) regression to analyze their pooled panel data. The outcome of their empirical analysis revealed that equity ratio has a positive but statistically insignificant impact on Return on Equity (ROE) while the debt-to-equity ratio (DER) shows a negative and statistically significant effect on ROE. Their study concludes that a high debt-to-equity ratio negatively impacts ROE and cautioned against relying solely on debt to boost shareholder returns recommending maintaining a balanced capital structure to optimize profitability and create sustainable value in the Nigerian industrial goods sector.

Shiro and Biirane (2025) investigated capital structure determinants in Nigeria listed FMCG firms using the tradeoff theory analysis. Their research examines secondary data from audited annual reports of 20 companies between 2014 and 2023 with the aid of correlation analysis and panel regression models. The study used Debt-to-Equity (D/E) ratio as capital structure, ROA and ROE as measure of profitability. They also include asset tangibility, firm size, tax rate, growth opportunities and liquidity in their analysis. The result shows that leverage has significant positive relationships with asset tangibility together with firm size and tax rate while profitability and liquidity maintain negative associations. The study suggests that FMCG financial managers should first use internal funds when profitability and liquidity are strong yet strategically borrow debt when the company has sufficient tangible assets. They affirm that individual company characteristics determine capital structure choices effectively while validating the relevance of Trade-Off Theory for emerging market conditions.

Adu and Abimboye (2025) applied fixed effects and pooled OLS regression models to investigate the relationship between capital structure and financial performance among fifteen Nigerian insurance firms listed on the Nigerian Exchange Group between 2008 and 2022. Short-Term Debt to Total Assets, Long-Term Debt to Total Assets and Equity to Total assets were used as measures of capital structure while performance was proxied by return on equity. Their findings revealed that short-term debt positively and significantly impacted ROE, while long-term debt and equity negatively affected profitability. They recommended that financial managers are encouraged to strategically utilize short-term debt as a tool to enhance firm profitability. However, this must be done within prudent limits to prevent liquidity constraints and to maintain investor confidence and suggests the need for caution in long-term borrowing decisions. Also firms should consider less risky financing options, such as retained earnings or moderate equity financing, to support sustainable growth while minimizing financial distress.

Ogan, Ugwoke, Kornom-Gbaraba, Ozor and Ugwoke (2024) used the technique of multiple regression analysis to evaluate what constitute an appropriate mix of capital structure for manufacturing firms in Nigeria from 2019 to 2023 in relation to the effect on financial performance. Their study comprised of 86 quoted firms under the manufacturing sector in Nigeria sourced from 10 manufacturing firms that made the sample. The outcome of their study was that total debt to total equity and long-term debt to total asset both have negative influence on return on assets while Total Debt to Total Asset have a positive influence on return on assets. Ogbuji and Adegbite (2024) investigated the relationship between Capital Structure and Financial Performance of Consumer Goods Manufacturing firms in Nigeria. Using data from Nigeria exchange group from 2001 to 2020 with the aid of correlation matrix. Their findings outcome was that capital structure ratio and equity ratio show significant positive relationship with return on assets, while debt ratio and firm size have significantly negative relation with return on assets. They recommend that firms in Nigeria consumer manufacturing sector strive to maintain an optimal capital structure in order to improve financial performance and increase shareholders' wealth. Sunday and John (2024) examined the effect of capital structure on the profitability of manufacturing firms in Nigeria for a period of 17 years between 2006-2022. They investigated the effect of total equity capital on the profitability of manufacturing firms in Nigeria and also examined the effect of total debt capital on the profitability of manufacturing firms in Nigeria. Data of three randomly selected manufacturing firms listed on the Nigeria Exchange Group were sourced from the firms' published financial reports for the period under study and were analyzed using Panel Least Square Regression technique. Their study concluded that total equity capital is a significant factor in explaining the profitability of manufacturing firms in Nigeria and also that total debt capital has a significant and positive effect on the profitability of manufacturing firms in Nigeria.

Ogieva and Ogiemudia (2019) examined Capital Structure and multinational firms' performance in Nigeria, they used annual reports of multinational firms in Nigeria between 2008 and 2017 with the use of correlation analysis

and panel regression techniques. Their findings revealed that capital structure is significant and negatively affects multinational firms' performance in Nigeria.

Akeem, Terer, Kiyanjui and Kayode (2019) used the technique of regression to ascertain capital structure effect on firm performance within the pecking order framework. The results showed that the relationship between firm performance and the debt-to-equity ratio is negative.

Gaps in the Empirical Literature Review

This study focuses on Nigeria Pension sector companies. Prior to this research, a comprehensive investigation into the effect of capital structure on the profitability of specifically Pension firms' companies in Nigeria between 2020 and 2024 had not been undertaken. No previous studies have been done specifically on firms that is not leverage (that comprise only with the mix of equity or retained earnings i.e. zero leverage or the capital structure has high proportion of equity with very little debt contribution) and most research work focused on manufacturing companies with debt as substantial part of their capital structure. Moreso, examining the sector using pecking order framework are rare in Nigeria.

Previous studies mostly used ROA or/and ROE as dependent variables. This study uses the combination of ROA, ROE and EPS in a study, the use of this combination together as performance proxies is rare. All these performance indicators will be examined in conjunction with the capital structure in this study. Accordingly, this study examines 12 Pension fund administrators and 2 pension fund custodians covering a five-year period from 2020 to 2024. These companies were chosen because of availability of financial data throughout the period of the study.

METHODOLOGY

Sources of Data

This study adopted an "ex-post facto" research design. This design was appropriate because it examines relationships between variables after the events have occurred, focusing on analyzing the impact of pre-existing capital structures on profitability outcomes. Secondary data from the annual financial statements of Pension Fund administrators and Pension fund custodians were used. A five-year assessment from 2020 to 2024 to capture pre and post capitalization in Pension sector and more so to capture most updated financial statement of stakeholders in the sector. They include Access ARM Pensions, CardinalStone Pensions, Crusader Sterling Pensions, FCMB Pensions, Fidelity Pension Managers, Guaranty Trust Pension Managers, Leadway Pensure, Nigerian University Pension Management, NLPC Pension Fund Administrators, Norrenberger Pensions, NPF Pensions, OAK Pensions, Pensions Alliance, Premium Pension, Stanbic IBTC Pension Managers, Tangerine APT Pensions, Trustfund Pensions, Veritas Glanvills Pensions, Citizens Pension, UBA Pension Custodian, First Pension Custodian and Zenith Pension Custodian. The study sampled 14 Companies that have their financial statement available up to date till 31st December year 2024.

Population and Sample size of study

The study population includes all the stakeholders in the Pension Sector (PFAs (20) and PFCs (3)) excluding closed PFAs (CPFAs) which are Pension schemes in the private sector existing prior to the introduction of the Contributory Pension Scheme (CPS) in June, 2004. The study sample is made up of total of 14 companies (12 PFAs and 2 PFCs) which have their audited account available and up to date to year 2024. The sample size was used mostly based on availability of data using the purposeful sampling technique in the selection for the study.

Model specification

The regression model is in line with what was adapted by Ogan et al., 2024 while the econometric model is consistent with the model adapted by Ogbuji, I. & Adegbite, E. (2024), Olaoye, C.O and Adesina, O.D (2022). The Ordinary Least Squares (OLS) regression method was primarily employed for the econometric estimations using panel data analysis. Baltagi (1995) pointed out that panel data are better able to study the dynamics of adjustment, are more informative and control for individual heterogeneity.

Regression models to incorporate study variables are:

ROA= f (TETA, CACL, TA)

ROE= f (TETA, CACL, TA)

EPS= f (TETA, CACL, TA)

The econometric models used in the study are stated below: In order to estimate the coefficients of independent variables, the panel data regression is expressed in linear form as follows:

$ROA_{it} = \beta 0 + \beta 1 TETA_{it} + \beta 2 L_CACL_{it} + \beta 3 L_TA_{it} + e_{it}$

$ROE_{it} = \beta 0 + \beta 1 TETA_{it} + \beta 2 L_CACL_{it} + \beta 3 L_TA_{it} + e_{it}$

$L_EPS_{it} = \beta 0 + \beta 1 TETA_{it} + \beta 2 L_CACL_{it} + \beta 3 L_TA_{it} + e_{it}$

Where:

ROA = Return on Assets; ROE = Return on Equity; EPS = Earnings Per Share; TETA (Equity Ratio) = Total Equity to Total Asset; CACL (Liquidity Ratio) = Current Assets to Current Liabilities; TA (Firm size measures) = Total Assets; e = Error term and *it* = Firm i at time t, β1- β3 = Coefficients of explanatory variables indicating their relationships to the observable variable.

ROA, ROE and EPS are dependent variables as proxies for performance measurements, TETA is the proxy for capital structure, CACL proxy for liquidity while TA is the proxy for firms' size. These variables were selected as financial metrics because of the peculiarity of Pension sector and also because they are critical to decision making by various stakeholders: shareholders, managements, creditors, bankers, investors, statutory regulators and others.

The variables were measured according to their respective accounting and economic definitions. Return on Assets (ROA), Return on equity (ROE) and Total Equity to Total Assets (TETA) were measured in percentage. Earnings per share (EPS), current ratio (CACL) and Total Assets (TA) were transformed using their natural logarithms and are represented as L_EPS, L_CACL and L_TA respectively. The logarithmic transformation was applied to moderate differences in firm scale and facilitate econometric interpretation. Percentage variables were retained in their original forms. Transformations were applied according to the characteristics of individual variables rather than solely to standardize their units of measurement.

A priori expectation

The priori expectation is that equity ratio, liquidity level and size should have direct impact on firms' financial performance. This is based on the assumption that the capital structure mix majorly comprise of equity with minimal or zero debt. Total fund under management is positively related to performance of firms as the funds from retiree savings account (RSA) holders are used for different investments opportunities by PFAs and they earn income based on the fund's performances.

Table 1 Measurement variables

ROA	Return on Assets (%)	Profit after Tax (PAT)/Total Assets i.e (capital employed)	Dependent
ROE	Return on Equity (%)	Profit after tax/Equity	Dependent
EPS	Earnings Per Share	Profit after Tax / Number of Ordinary shares	Dependent
TETA	Equity Ratio (%)	Total Equity / Total Assets	Independent
CACL	Liquidity ratio	Current Assets to Current Liabilities	Independent

TA	Total Assets	Company total Fixed and current Assets	Independent

Note. Authors Compilation 2026

Method of data Analysis

The study employed the random effect and the fixed effect regression analysis of ordinary least square (OLS) techniques using panel data analysis conducted using E-Views 13.0 statistical software program. Panel data method was selected because it effectively combines time-series data (2020-2024) for each of the selected companies, allowing robust examination of the relationship between capital structure and profitability while accounting for both firm-specific and time-invariant characteristics (Baltagi, 2008).

RESULTS AND DISCUSSION OF FINDINGS

Descriptive Statistics

Table 4.1: Descriptive statistics and interpretation

	ROA	ROE	EPS	TETA	TA	CACL
Mean	0.1754	0.2322	3.2166	0.7831	19.5687	6.1409
Median	0.1948	0.2514	1.3477	0.7823	12.0778	3.8852
Maximum	0.2955	0.4189	31.4051	0.9762	111.79	40.5186
Minimum	0.022	0.0241	0.0207	0.362	1.3915	0.7894
Std. Dev.	0.0681	0.099	6.1399	0.1111	22.7518	6.2966
Skewness	-0.3961	-0.2352	3.273	-0.6934	2.6256	3.2587
Kurtosis	2.3005	2.2874	12.8424	4.5339	9.4394	16.0827
Jarque-Bera	3.2576	2.1265	407.526	12.472	201.366	623.094
Probability	0.1962	0.3453	0	0.002	0	0
Sum	12.2773	16.2534	225.165	54.8189	1369.81	429.866
Sum Sq. Dev.	0.3204	0.6766	2601.2	0.8517	35717.5	2735.63
Observations	70	70	70	70	70	70

Source: Author's computation using E-views, 2026

The table above presents the summary of descriptive statistics:

ROA measures how efficiently a company uses its assets to generate profits. ROE measures how much profit a company generates for every unit of shareholders' equity and how well a company's management is using investors' money to generate profit. The higher the ROA (which measures the efficiency of assets utilization) and ROE (which measures effectiveness of managing invested funds), the better for the company. EPS represents the portion of a company's profit allocated to each outstanding share, higher EPS demonstrates a company's ability to generate profits for each share, signaling good financial health and performance.

The average for ROA of 17.54% suggests that pension funds firms are efficiently managing their assets to generate income while the average ROE of 23.22% indicate firms are giving reasonable returns to invested capital holder for the years under review. The standard deviation for ROA is 6.81 while the standard deviation for ROE is 9.9. These results indicate relatively moderate dispersion in the two profitability measures. The average EPS is 3.22, the minimum value is 0.02 while the maximum EPS is 31.41, suggesting reasonable earnings in terms of dividend and capital growth to equity owners of the company. The standard deviation for EPS is 6.14.

The Jarque-Bera normality test shows probabilities values of 0.1962, 0.3453 for ROA and ROE respectively. At the 5% level of significance, the null hypothesis of normality cannot be rejected for ROA and ROE. However, EPS, TETA, TA and CACL probability values of 0.0000, 0.0020, 0.0000 and 0.0000 respectively are below

0.05. The variation between minimum and maximum values are significant as seen in the table above. ROA, ROE and TETA variables skewed to the left thereby having a long tail to the left from it mean implying presence of more extreme low value outliners which pull the mean downward. EPS, TA and CACL variables skewed to the right thereby having a long tail to the right as indicated by their skewness positive value.

ROA and ROE have kurtosis 2.30 and 2.29 (<3, platykurtic), indicating thinner tails than a normal distribution (fewer extreme values). In contrast, EPS (12.84), TETA (4.53), TA (9.44), and CACL (16.08) all exceed 3, implying leptokurtic (fat-tailed) distributions. Higher kurtosis means a greater chance of outliers. EPS's kurtosis is very high (12.84), consistent with the presence of extreme earnings values (31.4 maximum). TETA's kurtosis (4.53) reflects that a few firms have low equity ratios, TA's kurtosis of 9.44 indicate the presence of extreme total assets values (111.79bn maximum) while CACL's kurtosis (16.08) reflects that a few firms have high liquidity ratios (40.52 maximum). EPS, TETA, TA and CACL all have P-value less than 0.05 rejecting normality as expected from their high kurtosis.

Equity ratio (TETA) measures the proportion of equity to total assets. The average is 78.23% indicating that sampled companies in the Nigeria Pension sector are lowly geared, meaning they mostly rely on equity financing. The percentage represents the proportion of equity in relation to the total assets. The minimum is 36.20% while the maximum ratio is 97.62%.

Firm size (TA) is measured by Total assets. The mean value of 19.57bn indicates the average size in the sampled sector in terms of their fixed assets plus current assets. The minimum value is 1.39bn and the maximum value is 111.79bn.

Firms' liquidity (CACL) was measured by current ratio which is current asset divided by current liabilities. The average is 6.14 indicating that sampled Pension sector companies are very liquid, hence why they have high equity ratio as they mostly rely on internally generated funds for their financing needs. The minimum value is 0.79 and the maximum value is 40.52, indicating high liquidity ratio in the sector.

Correlation Coefficient

The correlation coefficient (r) measures the strength and direction of the linear relationship between two variables.

Table 4.2: Correlation Matrix and Interpretation

Correlation t-statistic Probability	ROA	ROE	EPS	TETA	TA	CACL
ROA	1.0000 - -					
ROE	0.9523 25.7279 0.0000	1.0000 - -				
EPS	0.4885 4.6163 0.0000	0.4925 4.6662 0.0000	1.0000 - -			
TETA	-0.3438 -3.0187 *0.0000*	-0.5944 -6.0956 *0.0000*	-0.1889 -1.5861 *0.1174*	1.0000 - -		
TA	0.4398 4.0385 *0.0001*	0.4227 3.8460 *0.0003*	0.9454 23.9322 *0.0000*	-0.1428 -1.1190 *0.2382*	1.0000 - -	
CACL	-0.4705 -4.3969 *0.0000*	-0.5570 -5.5303 *0.0000*	-0.2081 -1.7543 *0.0839*	0.6695 7.4316 0.0000	-0.1802 -1.5107 *0.1355*	1.0000 - -

Source: Author's computation using E-views, 2026

Correlation test was done to examine the relationships among the three independent variables: equity ratio (TETA), Firms size (TA) and liquidity ratio (CACL) vis-a-vis their relationships with the dependent variables:

return on assets, return on equity and earnings per share. The above table shows the correlation coefficient between ROA, ROE and EPS as dependent variables and independent variables of TETA, TA, CACL used in the study. The correlation matrix shows the direction of relationship and relative strength between all variables under investigation. Capital structure (TETA) and Liquidity (CACL) have a strong relationship that is negative with respect to financial Performance measures of ROA, ROE and EPS as shown by their corresponding Pearson correlation coefficients (r): TETA to ROA r = -0.34, TETA to ROE r = -0.59, TETA to EPS r = -0.19. The relationship of ROA and ROE are significant as indicated by the probability value of 0.0036 and 0.0000 while relationship of EPS is non-significant with p-value of 0.1174. CACL to ROA r = -0.47, CACL to ROE r = -0.56, CACL to EPS r = -0.21. The relationship of ROA and ROE in respect to CACL are significant as indicated by the probability value of 0.0000 while relationship of EPS to CACL is non-significant with p-value of 0.0839. Total Assets (TA) and financial performance measures of ROA, ROE and EPS have relationships that are positive and significant as seen in the above descriptive analysis table. The correlation matrix further revealed the absence of multi-collinearity among variables, since there is no correlation coefficient among variables that exceed 0.80.

The implication of this is that equity ratio (TETA) has indirect influence on the level of firm's financial performance measures of ROA, ROE and EPS. This suggests that there is tendency for sampled firms in the Pension sector with higher TETA to have lower ROA, ROE and EPS. This corroborates the findings of Akeem et al., (2019), Ogieva and Ogiemudia (2019), Schulz (2017) and Al-Nsour and Jresat (2018). The result also shows that higher total Assets ratio may be associated with higher financial performance in terms of ROA, ROE and EPS while liquidity of firms measured by current asset divided by current liability (CACL) may not be associated with higher financial performance measured by ROA, ROE and EPS.

Panel regression

$ROA_{it} = \beta 0 + \beta 1 TETA_{it} + \beta 2 L_CACL_{it} + \beta 3 L_TA_{it} + e_{it}$

$ROE_{it} = \beta 0 + \beta 1 TETA_{it} + \beta 2 L_CACL_{it} + \beta 3 L_TA_{it} + e_{it}$

$L_EPS_{it} = \beta 0 + \beta 1 TETA_{it} + \beta 2 L_CACL_{it} + \beta 3 L_TA_{it} + e_{it}$

Table 4.3.1 Hausman Test

Correlated Random Effects - Hausman Test: ROAit = β0 + β1TETAit + β2L_CACLit + β3L_TAit +eit			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.2175	3	0.2389

Correlated Random Effects - Hausman Test: ROEit = β0 + β1TETAit + β2L_CACLit + β3L_TAit +eit			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.4277	3	0.3303

Correlated Random Effects - Hausman Test: L_EPSit = β0 + β1TETAit + β2L_CACLit + β3L_TAit +eit			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.4720	3	0.0236

Sources: Author's computation using E-views, 2026.

The table above shows that chi-squared statistics are 4.2175, 3.4277 and 9.4720 for ROA, ROE and EPS as dependent variables respectively, with degrees of freedom of 3 for all the dependent variables. The p-value for ROA is 0.2389 while the P-value for ROE is 0.3303, both are greater than the significant level usually set as 0.05. This implies that random effect model is consistent and efficient, and there is no statistically significant difference between the random effects and correlated random effects model in terms of their consistency and efficiency. We can conclude based on the above analysis that random effect model is appropriate for both ROA and ROE as dependent variables in the study and not appropriate for EPS as dependent variable as p-value of EPS is 0.0236 which is lower than 0.05.

Table 4.3.2 Fixed and Random Effect Regression

Cross section fixed effect
Dependent Variable: ROA
Method: Panel Least Squares
Sample: 2020 2024
Periods included: 5
Cross-sections included: 14
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.1709	0.0614	2.7843	0.0074
TETA	-0.0352	0.0831	-0.4240	0.6733
CACL	0.0078	0.0143	0.5459	0.5874
TA	0.0081	0.0077	1.0426	0.3019

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.8556	Mean dependent var	0.1754
Adjusted R-squared	0.8120	S.D. dependent var	0.0681
S.E. of regression	0.0295	Akaike info criterion	-3.9982
Sum squared resid	0.0463	Schwarz criterion	-3.4522
Log likelihood	156.9383	Hannan-Quinn criter.	-3.7813
F-statistic	19.6285	Durbin-Watson stat	1.6021
Prob(F-statistic)	0.0000		

Source: Author's computation using E-views,2026.

Cross section random effect
Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Sample: 2020 2024
Periods included: 5
Cross-sections included: 14
Total panel (balanced) observations: 70
Swamy and Arora estimator of component variances

Variable	Coefficien	Std. Error	t-Statistic	Prob.
C	0.1769	0.0598	2.9554	0.0043
TETA	-0.0446	0.0798	-0.5591	0.5780
CACL	-0.0023	0.0130	-0.1794	0.8581
TA	0.0146	0.0070	2.0880	0.0407

Effects Specification

	S.D.	Rho
Cross-section random	0.0543	0.7714
Idiosyncratic random	0.0295	0.2286

Weighted Statistics

R-squared	0.0715	Mean dependent var	0.0415
Adjusted R-squared	0.0292	S.D. dependent var	0.0303
S.E. of regression	0.0298	Sum squared resid	0.0587
F-statistic	1.6930	Durbin-Watson stat	1.3063
Prob(F-statistic)	0.1770		

Unweighted Statistics

R-squared	0.2185	Mean dependent var	0.1754
Sum squared resid	0.2504	Durbin-Watson stat	0.3061

Source: Author's computation using E-views,2026.

Cross -sectional random effect test equation:				
Dependent Variable: ROA				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.0891	6.1377	2.7843	0.0074
TETA	-3.5239	8.3116	-0.4240	0.6733
CACL	0.7782	1.4254	0.5459	0.5874
TA	0.8052	0.7723	1.0426	0.3019
Effects Specification				
R-squared	0.8556	Mean dependent var		17.5389
Adjusted R-squared	0.8120	S.D. dependent var		6.8146
S.E. of regression	0.0295	Akaike info criterion		-3.9982
Sum squared resid	0.0463	Schwarz criterion		-3.4522
Log likelihood	156.9383	Hannan-Quinn criter.		-3.7813
F-statistic	19.6285	Durbin-Watson stat		1.6021
Prob(F-statistic)	0.0000			

Source: Author's computation using E-views,2026.

Random effect model is appropriate for ROA as dependent variables in the study based on the p-value of 0.2389 which is higher than 0.05 as shown in hausman test in Table 4.3.1. The intercept term (C) has coefficient of 17.0891, which is statistically significant. This suggests that even in the absence of independent variables, there is positive relationship between the intercept term and ROA. Independent variables of TA and CACL have statistically non-significant positive relationship with ROA while TETA has non -significant negative relationship with ROA. The random effect shows clearly that approximately 85.56% of total systematic change in Pension sector firm performance is explained by all the variables that are independent put together as shown by the R square value of 0.8556. And after adjusting for degree of freedom, 81.20% of total systematic variation in firm performance is still explained by the model as shown by the Adjusted R2 bar of 0.8120. This means that the model does have a tight fit of the regression line as only 14.44% of total change in dependent variable was not explained by the model. Despite the insignificance of the individual coefficients, the model is jointly significant at 5% level of significance as indicated by the value of F-statistics which is 19.63 when compared to its probability value of 0. 0000.This suggests that independent variables, as a group have significant effect on predicting ROA. Result of random effect analysis above suggest that TETA has negative relationship with ROA while TA and CACL have positive relationship with ROA. The model provides a good fit to the data, explaining a substantial portion of the variance in ROA. The D.W statistics value of 1.6021 which is approximately 2.0 shows that there is no serial correlation in this result. This means that the findings of this study are useful for policy recommendation.

Cross section fixed effect				
Dependent Variable: ROE				
Method: Panel Least Squares				
Sample: 2020 2024				
Periods included: 5				
Cross-sections included: 14				
Total panel (balanced) observations: 70				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.5124	0.0837	6.1252	0.0000
TETA	-0.4309	0.1133	-3.8032	0.0004
CACL	0.0222	0.0194	1.1409	0.2590
TA	0.0094	0.0105	0.8945	0.3751
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.8730	Mean dependent var		0.2322
Adjusted R-squared	0.8346	S.D. dependent var		0.0990
S.E. of regression	0.0403	Akaike info criterion		-3.3787
Sum squared resid	0.0860	Schwarz criterion		-2.8327
Log likelihood	135.2559	Hannan-Quinn criter.		-3.1618
F-statistic	22.7612	Durbin-Watson stat		1.6048
Prob(F-statistic)	0.0000			

Source: Author's computation using E-views,2026.

Cross section random effect
Dependent Variable: ROE
Method: Panel EGLS (Cross-section random effects)
Sample: 2020 2024
Periods included: 5
Cross-sections included: 14
Total panel (balanced) observations: 70
Swamy and Arora estimator of component variances

Variable	Coefficien	Std. Error	t-Statistic	Prob.
C	0.5126	0.0804	6.3746	0.0000
TETA	-0.4343	0.1081	-4.0189	0.0002
CACL	0.0091	0.0174	0.5201	0.6047
TA	0.0182	0.0094	1.9394	0.0567

Effects Specification

	S.D.	Rho
Cross-section random	0.0673	0.7362
Idiosyncratic random	0.0403	0.2638

Weighted Statistics

R-squared	0.2844	Mean dependent var	0.0600
Adjusted R-squared	0.2519	S.D. dependent var	0.0467
S.E. of regression	0.0404	Sum squared resid	0.1077
F-statistic	8.7438	Durbin-Watson stat	1.3184
Prob(F-statistic)	0.0001		

Unweighted Statistics

R-squared	0.4266	Mean dependent var	0.2322
Sum squared resid	0.3880	Durbin-Watson stat	0.3661

Source: Author's computation using E-views,2026.

Cross -sectional random effect test equation:

Dependent Variable: ROE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	51.2440	8.3661	6.1252	0.0000
TETA	-43.0873	11.3294	-3.8032	0.0004
CACL	2.2167	1.9429	1.1409	0.2590
TA	0.9417	1.0527	0.8945	0.3751

Effects Specification

R-squared	0.8730	Mean dependent var	23.2192
Adjusted R-squared	0.8346	S.D. dependent var	9.9027
S.E. of regression	0.0403	Akaike info criterion	-3.3787
Sum squared resid	0.0860	Schwarz criterion	-2.8327
Log likelihood	135.2559	Hannan-Quinn criter.	-3.1618
F-statistic	22.7612	Durbin-Watson stat	1.6048
Prob(F-statistic)	0.0000		

Source: Author's computation using E-views, 2026.

Random effect model is found appropriate for ROE as dependent variables in the study based on the p-value of 0.3303 which is greater than 0.05 as shown in hausman test in table 4.3.1. The intercept term (C) has coefficient of 51.2440, which is statistically significant. This suggests that even in the absence of independent variables, there is positive relationship between the intercept term and ROE. TETA has a coefficient of -43.0873, suggesting a significant negative relationship with ROE while TA and CACL have statistically positive non-significant relationships with ROE. The R-squared value of 0.8730 indicates that approximately

87.30% of the variance in ROE is accounted by the independent variables. The adjusted R-squared value which considers the number of predictors in the model is 0.8346. The F-statistics is 22.7612 (p=0.00000), indicating that the overall model is statistically significant, indicating that the explanatory variables jointly influence corporate financial performance. Result of random effect analysis above suggest that TETA has a negative relationship with ROE while TA and CACL have positive relationship with ROE. The model provides a good fit to the data explaining a substantial portion of the variance in ROE. The F-statistics value of 22.7612 indicates a significant relationship between ROE and the independent variables. The Dubin-Watson value of 1.6048 signifies absence of serious autocorrelation problems since the value is positive and falls within the acceptable range of 1.5 to 2.5. The probability of 0.0000 indicates a significant relationship at 1% level of significance. These results, therefore, provide evidence that the regression model is well fitted. Overall, the findings demonstrate that capital structure, particularly equity intensity measured by TETA, is the most critical factor influencing ROE. The study therefore concludes that while liquidity and firm size contribute positively to profitability, their impacts are relatively weak, whereas the equity financing structure exerts a significant and adverse influence on shareholders' wealth maximization. These results provide empirical evidence that optimizing the mix of financing sources remains essential for improving corporate financial performance.

Cross section fixed effect
Dependent Variable: EPS
Method: Panel Least Squares
Sample: 2020 2024
Periods included: 5
Cross-sections included: 14
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.2227	0.4436	-2.7562	0.0080
TETA	-0.5544	0.5988	-0.9258	0.3587
CACL	0.0667	0.1019	0.6545	0.5156
TA	0.6899	0.0573	12.0403	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.9847	Mean dependent var	0.1608
Adjusted R-squared	0.9801	S.D. dependent var	1.5092
S.E. of regression	0.2130	Akaike info criterion	-0.0474
Sum squared resid	2.4050	Schwarz criterion	0.4987
Log likelihood	18.6577	Hannan-Quinn criter.	0.1695
F-statistic	213.1571	Durbin-Watson stat	1.6498
Prob(F-statistic)	0.0000		

Source: Author's computation using E-views,2026.

Cross section random effect
Dependent Variable: EPS
Method: Panel EGLS (Cross-section random effects)
Sample: 2020 2024
Periods included: 5
Cross-sections included: 14
Total panel (balanced) observations: 70
Swamy and Arora estimator of component variances

Variable	Coefficien	Std. Error	t-Statistic	Prob.
C	-1.1393	0.4891	-2.3293	0.0229
TETA	-0.6768	0.5927	-1.1418	0.2577
CACL	0.0090	0.0992	0.0906	0.9281
TA	0.7298	0.0555	13.1527	0.0000

Effects Specification

	S.D.	Rho
Cross-section random	0.8191	0.9367
Idiosyncratic random	0.2130	0.0633

Weighted Statistics

R-squared	0.7202	Mean dependent var	0.0186
Adjusted R-squared	0.7075	S.D. dependent var	0.4127
S.E. of regression	0.2232	Sum squared resid	3.2886
F-statistic	56.6299	Durbin-Watson stat	1.2221
Prob(F-statistic)	0.0000		

Unweighted Statistics

R-squared	0.5833	Mean dependent var	0.1608
Sum squared resid	65.4896	Durbin-Watson stat	0.0614

Source: Author's computation using E-views,2026.

Panel Least Squares - Fixed effect:				
Dependent Variable: EPS				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-122.2663	44.3605	-2.7562	0.0080
TETA	-55.4393	59.8807	-0.9258	0.3587
CACL	6.6703	10.1908	0.6545	0.5156
TA	68.9923	5.7301	12.0403	0.0000
Effects Specification				

R-squared	0.9847	Mean dependent var	16.0787
Adjusted R-squared	0.9801	S.D. dependent var	150.9216
S.E. of regression	0.2130	Akaike info criterion	-0.0474
Sum squared resid	2.4050	Schwarz criterion	0.4987
Log likelihood	18.6577	Hannan-Quinn criter.	0.1695
F-statistic	213.1571	Durbin-Watson stat	1.6498
Prob(F-statistic)	0.0000		

Source: Author's computation using E-views, 2026.

The fixed effect model was adopted for EPS as dependent variable as the random effect model was found not appropriate with p-value of EPS of 0.0236 which is lower than 0.05 as indicated by Hausman test in table 4.3.1. The fixed-effects panel regression results indicate that firm-specific factors significantly influence earnings per share. The intercept term (C) has coefficient of -122.2663. TETA has coefficients of -55.4393 suggesting negative relationship with EPS while CACL and TA have statistically positive relationships with EPS at 6.6703 and 68.9923 respectively. The R-squared value of 0.9847 indicates that approximately 98.47% of the variance in EPS is accounted by the independent variables, this indicates strong correlation between the variables as the computed R is more than the 0.875 rule of thumb. The adjusted R-squared value which considers the number of predictors in the model is 0.9801. The high R-squared value (98.47%) and significant F-statistic further indicate that the fixed-effects model provides a strong explanation of variations in EPS across firms and over time. The Dubin-Watson value of 1.6498 signifies absence of serious autocorrelation problem. This suggests that independent variables, as a group have significant effect on predicting EPS. Result of fixed effect analysis above suggest that TETA has a negative relationship with EPS while CACL and TA have positive relationship with EPS. The findings imply that increases in firm size contribute substantially to improved earnings performance, whereas capital structure and liquidity ratios do not independently exert a significant influence on EPS. Therefore, firm growth and asset expansion appear to be more important determinants of shareholder wealth maximization than financing structure or short-term liquidity management within the sampled firms.

The statistical results indicate strong correlations in all the variables in comparison with the 0.875 rule of thumb as they are all within the range. On the average, less than 15% of the variations in the financial performance metrics of ROA, ROE and EPS of selected pension funds firms in Nigeria are explained by total equity financing and total assets ratio of the firms. This showed that the proportion of equity by the firms in Nigeria and total assets ratio values have at least 15% significant influence on the profitability of the firms. This also indicates that there are other variables that influence the variations in the level of profitability of the selected firms. These results, therefore, provide evidence that the regression model is well fitted and that the financial performance fluctuation of the listed firms is significantly influenced by the equity financing and total assets ratio of the firms.

Equity ratios - Total Equity as a percentage of Total Assets						
Company	Year'24	Year'23	Year'22	Year'21	Year'20	**5-year average**
GT Pensions	94.27%	96.65%	97.62%	92.67%	85.47%	**93.34%**
OAK PENSIONS	91.53%	93.63%	94.55%	91.57%	91.82%	**92.62%**
NUPEMCO Pension	88.72%	89.39%	94.91%	90.11%	83.31%	**89.29%**
Zenith Custodian	85.22%	86.71%	88.60%	90.25%	91.64%	**88.49%**
Trust Fund Pension	81.37%	79.41%	87.32%	83.89%	90.83%	**84.56%**

Leadway Pensions	78.77%	74.71%	77.10%	79.58%	81.41%	**78.32%**
First Custodian	76.07%	74.70%	76.82%	78.85%	78.78%	**77.04%**
Crusader Pensions	65.25%	77.45%	76.52%	78.67%	78.30%	**75.24%**
PAL Pension	69.80%	78.16%	78.66%	67.48%	77.52%	**74.32%**
Stanbic IBTC Pension	67.06%	69.53%	75.07%	79.97%	79.84%	**74.29%**
Access ARM Pensions	71.61%	71.24%	76.24%	70.10%	65.50%	**70.94%**
Premium Pension	76.20%	73.43%	67.76%	69.51%	65.56%	**70.49%**
NPF Pension	63.64%	65.33%	72.37%	74.47%	76.36%	**70.44%**
FCMB Pensions	60.26%	61.26%	54.41%	36.20%	72.90%	**57.01%**
Grand Total	76.41%	77.97%	79.85%	77.38%	79.95%	**78.31%**

Source: Author's computation 2026.

The above table shows the capital structure ratio across the Pension sector over a period of five years from 2020 to 2024. This indicates that the average equity to total assets ratio in the sector over the 5 years' is 78.31% with some firms having over 90% showing how low geared firms in this sector are. All the explanatory variables have varied degrees of relationship with Pension firms' performance though with different magnitudes. Capital structure (TETA) has a relationship that is significant with ROE and non-significant with ROA and EPS with negative impacts Pension firm's financial performance. This result therefore confirms the validity of pecking order theory in Pension firms operating in the Nigerian Pension sector.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study investigated the relationship between capital structure and financial performance of sample companies in Nigeria Pension Sector from 2020 to 2024. Capital structure ratio shows negative and significant relationship with financial performance measure of ROE but shows negative but non-significant relationship with ROA and EPS, suggesting that firms in this sector uses retain earnings and liquid asset in financing rather than debt and equity mix, thereby confirming the position of the pecking order theory. This implies that higher equity or debt proportion in capital structure does not necessarily translate to higher financial performance. This is in line with the findings of Ogieva and Ogiemudia (2019), Gabrijelcic, Herman and Lenarcic (2016), and Akeem, Terer, Kiyanjui and Kayode (2019), in their literature.

Total assets as a measure of firms' size has significant and positive relationship with performance measured by EPS but has positive and non-significant relationship with performance proxied by ROA and ROE. The positive relationship between size and performance indicate that larger firms are likely to have higher financial performance, this may be attributed to the fact that income is mostly based on the percentage of funds under management with each Pension fund administrators and custodians and more so there seems to be more trust by RSA holders in larger PFAs because of their sizes measured by their total assets or the RSA funds they manage.

The study also shows that liquidity has non-significant positive effect on the performance of firms in Nigeria Pension sector as measured by ROA, ROE and EPS.

Recommendations

The study recommends that company should strive to ensure capital structure mix that improves their financial performance so as increase the wealth of shareholders. Some mix of debt might have a positive impact on the performance of the firms due to the tax benefits advantage over equity. Firms' size should be expanded for improved performance and future growth of the firms. Since the impact of total asset (TA) is positively related to the performance of Pension sector firms, management should engage in prudent management of cash and other form of assets whether fixed or current so that the effect of total asset on the performance of these firms can be made more impacting. Managers of firms in the pension sector should ensure making use of the internally generated funds (retained earnings) first for investments with positive NPVs and if this source of finance has been exhausted, they resort to the use of debt capital and eventually equity source of financing.

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