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Effect Of Asset Investment Strategies (Federal Government Securities and Ordinary Shares of Public Liability Companies) and Financial Performance of Pension Fund Administrators (PFAs) In Nigeria

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Abstract- The Nigerian pension sector underwent a major overhaul after the enactment of the Pension Reform Act (PRA) of 2004. Effect Of Asset Investment Strategies (Federal Government Securities and Ordinary Shares of Public Liability Companies) and Financial Performance of Pension Fund Administrators (PFAs) In Nigeria. The period 2014–2023 is chosen to capture trends and impacts over a decade, accounting for regulatory reforms such as the 2014 Pension Reform Act and recent market dynamics. The study utilized ex- factor design, encompassing the ten-year period from 2014 to 2023. The population consist of all the 21 registered pension fund administrators (PFAs) in Nigeria. Based on the census sampling technique 14 companies met the criteria and were sampled for the study. The theory underpinning this study is capital accumulation, This study employed multiple regression analysis, where the dependent variable, representing the financial performance of Pension Fund Administrators (PFAs) (Y), is explained by multiple independent variables. Panel Ordinary Least Squares (OLS) is employed. The allocation of pension funds to federal government securities exerts a positive and statistically significant influence on Return on Equity (ROE). This relationship underscores the contribution of low-risk, government-backed instruments to the profitability of pension fund administrators by providing stable returns and mitigating portfolio volatility. The coefficient of 1.018585 indicates that, ceteris paribus, a one-unit increase in investment in these securities corresponds to a 1.018585-unit increase in ROE. This finding confirms the strategic value of federal government securities in enhancing returns, complying with regulatory guidelines, and fortifying the financial stability of pension institutions in Nigeria. The analysis reveals a positive and statistically significant relationship between investments in ordinary shares and Return on Equity (ROE), demonstrating that greater allocation to equities enhances the financial performance of pension fund administrators in Nigeria. This improvement in ROE reflects the superior return potential of equities relative to more conservative assets, derived from capital appreciation and dividend income. Notwithstanding the inherent risks associated with market volatility, the net effect on returns is favorable. Consequently, the strategic inclusion of ordinary shares within investment portfolios is advocated for optimizing long-term financial outcomes. Pension fund administrators in Nigeria are recommended to maintain and, where feasible, increase their allocation to federal government securities to ensure steady returns and preserve capital.

Key Words: Asset Investment Strategies, Federal Government Securities, an Ordinary Shares of Public Liability Companies, Financial Performance, and Pension Fund Administrators (PFAs).

I. INTRODUCTION

1.1 Background to the Study

Pension Fund Administrators (PFAs) play a crucial role in securing retirees' financial stability through careful management and strategic investment of pension funds. In Nigeria, the importance of PFAs grew substantially after the 2004 Pension Reform Act which was later updated in 2014 established a stronger contributory pension system. These reforms were introduced to enhance transparency, accountability, and long-term financial sustainability within the pension sector.

The global pension landscape has undergone significant transformation over the past three decades, largely driven by demographic transitions, fiscal pressures on public pension systems, and the increasing shift toward defined contribution (DC) schemes. Globally, pension funds have amassed substantial assets under management, reaching approximately USD 58 trillion by the end of 2022

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(OECD, 2023). These funds are increasingly being tasked with the dual objectives of ensuring long-term retirement security and delivering competitive financial returns.

The allocation of these pension assets reflects a predominantly conservative investment strategy. In Nigeria the Federal government securities remain the largest asset class, accounting for about 65% of total assets. This includes investments in Federal Government of Nigeria (FGN) Bonds, Treasury Bills, and Sukuk, which are considered low-risk instruments. While this investment strategy guarantees capital preservation and steady income, it has been criticized for its low yield compared to inflation and limited impact on real economic growth (Oladipupo *et al.,* 2023). Beyond government securities, Nigerian PFAs are permitted to invest in other asset classes such as ordinary shares of public liability companies listed on the Nigerian Exchange.

Most PFAs rely heavily on regulatory investment guidelines rather than robust internal risk management systems to guide their asset allocation decisions (Adegbite & Oyelade, 2021). This results in suboptimal portfolio performance and raises concerns about the long-term sustainability of pension funds, especially in an inflationary economic environment where real returns are eroded.

Investment in ordinary shares of public liability companies offers PFAs exposure to capital appreciation and dividend income. However, the volatility of the Nigerian stock market, poor corporate governance practices, and inconsistent fiscal policies pose significant risks. Without effective risk management, PFAs may be unable to withstand market downturns, leading to significant erosion of asset value.

This study is motivated by the growing concerns about the performance and stability of Nigerian Pension Fund Administrators (PFAs) in a dynamic investment landscape. Despite substantial growth in pension assets and a regulatory framework that permits diversified investments. While prior research has explored pension fund performance and asset allocation drivers with mix findings, this research seeks to fill that gap by empirically analyzing how investing in federal government securities and Ordinary Shares of Public Liability Companies and financial performance of Pension Fund Administrators (PFAs) in Nigeria.

1.2 Statement of the Problem

The global financial ecosystem continues to experience heightened volatility due to shifting macroeconomic indicators, geopolitical uncertainties, and the intensifying impact of climate change. Pension funds, as long-term institutional investors, are increasingly expected to navigate these complexities while securing optimal returns for retirees. Consequently, asset investment strategies have become more dynamic and multifaceted, requiring deliberate calibration of risk exposures. Moreover, investment in ordinary shares of public liability companies remains marginal, accounting for less than 7.3% of total pension assets in 2023, despite the historical evidence supporting equities as vehicles for long-term value creation (Oladipupo *et al.,* 2023). This under allocation may be attributed to heightened market volatility, regulatory constraints, and perceived information asymmetry in the Nigerian capital market. Similarly, investment in real estate development a critical inflation-hedging instrument is constrained by illiquidity, valuation risks, and a poorly regulated sector. Real estate investments accounted for a mere 2.1% of pension assets in 2023, suggesting suboptimal deployment of funds (PenCom, 2024). Notably, the regulation permitting investment in units of offshore instruments remains largely underutilized, with foreign asset exposure capped at 20% and actual allocations consistently below 1%. This is despite evidence that international diversification offers potential for improved risk-adjusted returns (WTW, 2023). The disproportionately low exposure to high-yield asset classes reflects an inherent misalignment between current investment strategies and the long-term sustainability of pension fund performance.

This research is driven by the urgent need to align regulatory compliance with performance optimization in Nigeria's pension industry. This study seeks to close that gap by examining the effect of Asset Investment Strategies on Federal Government Securities and Ordinary Share of Public Liability Companies and Financial Performance.

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1.3 Objective of the Study

The study examined the effect of Asset Investment Strategies on Federal Government Securities and Ordinary Share of Public Liability Companies and financial performance of pension fund administrators (PFAs) in Nigeria. objectives is to;

i. determine effect of asset investment strategies (Federal Government Securities and Ordinary Shares of Public Liability Companies) on financial performance of Pension Fund Administrators (PFAs) in Nigeria;

1.4 Research Question

The research questions is presented in line with the objectives of the study as follows:

i. What is the effect of asset investment strategies (Federal Government Securities, Ordinary Shares of Public Liability Companies, Real Estate and Units of Shares Outside Nigeria) on financial performance of pension fund administration (PFAs) in Nigeria?

1.5 Research Hypothesis

The research hypotheses is presented in null form in line with the objectives of the study is:

Ho_1: Asset investment strategies (Federal Gov't Securities and Ordinary Shares of Public Liability Companies) have no significant effect on the financial performance of pension fund administrators (PFAs) in Nigeria.

II. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Financial Performance

The concept of financial performance in Pension Fund Administrators (PFAs) can be defined by a range of indicators and metrics that reflect the ability of PFAs to effectively manage pension assets and generate returns. These measures provide insight into the efficiency and profitability of the investment strategies employed by PFAs.

The concepts integral for evaluating the financial performance of Pension Fund Administrators (PFAs). ROA assesses how efficiently PFAs utilize their assets to generate profits, with higher values signifying effective asset management and strong financial performance (Balogun, 2006; Adedeji & Olowe, 2016).

The measurement of financial performance in Pension Fund Administrators (PFAs) involves several key indicators and metrics that reflect their ability to manage pension assets effectively and generate returns. These measures are crucial for assessing the efficiency and sustainability of PFAs in the context of Nigeria's Contributory Pension Scheme (CPS). Measurement of financial performance for Pension Fund Administrators (PFAs) include Return on Assets (ROA), net asset growth, and risk-adjusted returns. Net asset growth reflects the increase in the value of pension assets over time, offering insights into the PFA's ability to expand portfolios and maximize returns through strategic management (Aliyu & Lian 2022).

2.1.2 Pension Asset Investment Strategy

Pension asset investment strategy refers to the methods employed by pension fund administrators (PFAs) to allocate funds across various asset classes, aiming to achieve sustainable growth, mitigate risks and meet the long-term objective of providing retirement benefits. In Nigeria, these strategies are shaped by regulatory frameworks, economic dynamics, and market opportunities.

Pension Asset Investment strategy of Pension Fund Administrators (PFAs) in Nigeria involves balancing risk management, financial performance, and long-term asset allocation. Pension investment strategies aim to achieve long-term growth while minimizing risks.

2.1.3 Federal Government Investment

Federal Government investment has been described as the allocation of public funds by the central authority into productive sectors such as infrastructure, health, education, and capital markets with the aim of promoting sustainable economic growth and social welfare (Adu & Osei, 2021).

Eze and Udeh (2020) defined Federal Government investment as the process by which the government channels financial resources into long-term projects and securities, such as treasury bills, bonds, and infrastructural developments, to generate returns and ensure macroeconomic stability.

In the view of Adegbite (2023), Federal Government investment constitutes a strategic tool for resource mobilization and economic diversification, often carried out through budgetary allocations, sovereign wealth funds, and public-private partnerships to enhance productivity.

Similarly, Akinyemi and Bello (2021) emphasized that Federal Government investment is not limited to direct capital projects but also extends to financial instruments in the capital market, which help in financing fiscal deficits and providing stable income streams for the government.

Figure 1: Conceptual Framework of the Variables

2.2 Empirical Review

Chinelo and Okafor (2022) explored the nexus between pension asset allocation strategies and financial performance among pension schemes in Sub-Saharan Africa. Using a sample of 11 countries and data from 2006 to 2021, the authors employed a generalized method of moments (GMM) estimator to address endogeneity issues in panel data. The study demonstrated that higher allocations to equities and infrastructure investments led to improved fund performance, particularly when supported by strong regulatory frameworks. However, it also noted that excessive investment in domestic government bonds, while safe, yielded suboptimal returns and created crowding-out effects on private sector investments. The main strength of this study lies in its regional scope and use of dynamic panel estimation techniques. Nevertheless, the authors acknowledged the challenge of data inconsistency across countries, which may affect the generalizability of the findings.

A recent study by Mensah and Boateng (2023) focused on pension fund investment strategies in Ghana, examining their implications for both fund sustainability and financial performance. Using data from five major pension fund administrators over a 12-year period and applying vector error correction modeling (VECM), the study analyzed long-run and short-run relationships between investment strategy and performance indicators. The results showed that a balanced portfolio consisting of equities, fixed income securities, and real estate produced more consistent returns and enhanced fund solvency. Additionally, the study emphasized the role of fund governance and investment expertise in shaping outcomes. However, the critique of this work centers on its narrow institutional sample, which may not capture the heterogeneity of investment practices across the entire pension fund ecosystem in Ghana.

Odundo (2020) focused on pension funds in Kenya, analyzing the effect of strategic investment allocations on returns. Utilizing a survey-based approach combined with secondary data from pension fund annual reports, the study applied correlation and multiple regression techniques to test the relationship between asset mix and fund performance.

Verma (2022) provided a comprehensive overview of financial performance analysis, emphasizing its significance in assessing a company's financial Performance. It explains that financial performance involves evaluating how well a firm utilizes its assets to generate revenues and profits, which is crucial for stakeholders like managers, investors, and creditors. The study outlines key areas of analysis, including working capital, financial structure, activity, and profitability, each offering insights into different facets of a company's operations. it also highlights the importance of financial statements such as the balance sheet and income statement in this analysis, as they offer structured data for evaluating a firm's financial position and performance. Overall, the study underscores that understanding financial performance is essential for informed decision-making and effective financial management.

Akomea-Frimpong *et al.* (2022) examined the relationship between corporate governance and the performance of pension funds in Ghana using a mixed-method approach. The study integrates quantitative analysis of pension fund performance metrics with qualitative insights from interviews and surveys of industry stakeholders. The findings reveal that strong governance structures, including effective board oversight, transparency, and adherence to regulatory standards, significantly enhance the performance and sustainability of pension funds. Additionally, it highlights challenges such as weak compliance, limited capacity, and inefficiencies in governance practices that constrain optimal fund performance. The study advocate for strengthened governance frameworks and capacity-building initiatives to improve the efficiency and trustworthiness of pension fund administration. This study offers valuable contributions to understanding governance dynamics in emerging markets, with practical implications for policymakers and fund managers in Ghana and similar contexts.

Saheed, (2023) investigated the effect of internal factors on financial performance. The study measured performance via Return on Assets (ROA) and analyzed its relationship to the independent variables of Board Independence and Solvency Ratio, alongside broader economic factors, through a correlation research design.

Nwala and Solomon (2024) employed an ex post-facto design to analyzed the effect of pension fund investments on Nigerian pension fund performance. The key findings from their regression analysis were twofold: A positive, statistically significant relationship was identified between the level of investments and the benefits paid to pensioners, with investments explaining 15.98% of the variance in benefits. A negative, statistically significant relationship was found between investments and investment income, implying poor returns and accounting for 34.57% of the variance in income.

A study Adekoya and Nwaolia (2022) posits that the value of Pension Fund Administrators (PFAs), measured by net asset value per unit, is a critical determinant of retirement income security. The study investigated the collective influence of several firm attributes (e.g., firm age, size, contribution density, board structure) on this value. Utilizing an ex-post facto design, data from 15 established PFAs from 2011 to 2020 were analyzed. The results indicated that these attributes jointly have a statistically significant and substantial effect on PFA value (Adj. $R^2 = 0.9298$, $F(6,143) = 254.96$, $p < 0.05$), leading to the conclusion that they are pivotal in strengthening the Nigerian pension industry.

Olusola *et al.* (2022) investigated the critical relationship between asset allocation and the financial performance of Nigeria's Pension Fund Administrators (PFAs). Against the backdrop of growing pension assets, the research emphasized that the selection of investment vehicles significantly impacts fund returns. Key findings indicated that common stocks and real estate were the top-performing asset classes, whereas corporate debt and federal government securities which constitute a large share of investments contributed the least income. The study concluded that strategic asset mix is paramount for maximizing returns and fulfilling long-term pension liabilities. It specifically recommended that PFAs avoid overexposure to government securities and adopt more careful, long-term investment strategies to improve financial performance.

Saheed (2023) examined the influence of Pension Fund Administrators' (PFAs) financial performance on economic growth in Nigeria. The research analyzed PFA investment strategies, operational efficiency, and profitability, establishing a positive correlation between the effective management of long-term pension funds and key macroeconomic indicators. The findings emphasize the pension sector's significant role in fostering national development and stress the importance of stringent regulatory oversight and proficient fund management to optimize its contribution to the economy.

Bakar *et al.* (2021) evaluated the efficiency and performance of pension fund investments across key financial instruments, including shares, bonds, and treasury bills. The research assessed how these allocations influence portfolio growth and stability. The findings revealed a classic risk-return trade-off: treasury bills were associated with lower risk and enhanced stability, whereas shares and bonds yielded higher returns at the cost of greater risk exposure. The study underscores the critical need for a balanced asset allocation strategy to optimize outcomes. It concludes by recommending robust investment frameworks and stringent regulatory supervision to improve the sustainability and efficiency of pension fund investments.

2.3 Theoretical framework

The theory underpinning this study is capital accumulation, it was was prominently advanced by Todaro and Smith, two distinguished scholars in the field of development economics. In their foundational work *Economic Development*, Todaro and Smith (2009) emphasize the essential role of capital formation in driving sustained economic growth, particularly in low- and middle-income countries. Their theoretical perspective offers a structured analysis of how economies transition from stagnation to growth through deliberate savings, investment, and reinvestment in productive assets. According to their theory, economic growth is not merely a spontaneous process but one that requires the systematic accumulation and efficient allocation of capital in both physical and human forms. Todaro and Smith present capital accumulation as a cornerstone of national development, highlighting its cyclical and cumulative nature where higher income leads to greater savings, which in turn finance investments that further boost income levels.

The relevance of this theory to the present study cantered on investment decisions, risk management, and the sustainability of pension funds is both theoretical and practical. Pension funds exemplify capital accumulation in a structured, long-term format. Workers and employers contribute savings over time, which are then pooled and invested in a range of financial and real assets. The performance of these investments directly impacts the sustainability and adequacy of pension benefits. As such, understanding capital accumulation provides a theoretical lens for evaluating how pension funds can optimize returns through prudent investment decisions and robust risk management strategies. In line with the theory, the effective use of accumulated pension capital requires not only maximizing returns but also ensuring that investment risks are managed in a way that preserves the long-term purchasing power of the fund (Olalekan, 2021; Eze & Okonkwo, 2020).

2.4 Gap in Literature

Pension asset investment strategies have been○ extensively studied, with researchers such as (Chinenye *et al.,* 2024; Uche *et al.,* 2022) focused on how pension funds balance growth and risk, by emphasizing the importance of asset diversification for optimal returns, as proposed to Sharpe's modern portfolio theory. In Nigeria, challenges like limited investment options and regulatory constraints hinder pension fund administrators (PFAs) from achieving desired financial outcomes. Risk management has also been highlighted as critical for the sustainability and financial performance of pension fund administrators, (Lateef & Godwin 2020; Ajibade *et al.,* 2018) underscore the impact of macroeconomic (e.g., inflation, exchange rates) and micro-level risks (e.g., credit, operational, and liquidity risks). Similarly, financial performance, often measured through ROI, asset growth, and fund stability, has been linked to operational efficiency and external factors like market volatility, as evidenced by (Oseghale *et al.,*2020); (Johnson, 2020) Oba *et al.,* 2020). However, a significant research gap exists as most studies fail to explore risk management as a moderating factor between investment strategies and financial performance. Furthermore, localized insights into Nigeria's unique regulatory and economic context are limited, as the considerations of dynamic risk factors such as inflation and digital disruptions. Most studies also focused on traditional performance metrics, neglecting qualitative aspects like long-term sustainability and stakeholder satisfaction.

III. METHODOLOGY

An ex-post-facto research design was employed for this investigation. This methodology is highly suitable for impact analysis, as it utilizes pre-existing data, encompassing the ten-year period from 2014 to 2023. The population consist of all the 21 registered pension fund administrators (PFAs) in Nigeria using 10-years study time frame from (2014-2023). The study utilized 14 companies that met the criteria and were sampled for the study. To effectively sample the 14 companies that met the required criteria out of all 21 registered Pension Fund Administrators (PFAs) in Nigeria for the 10-year study time frame (2014-2023), the following filtering criteria were used:

Exclusion Criteria:

Any PFA that fails to provide complete data for the study period (2014-2023) due to reasons such as non-reporting or data unavailability.

- Exclude PFAs with missing or irregularly audited financial reports, as this could compromise the validity of the analysis.
- Exclude PFAs that underwent mergers, acquisitions, or were deregistered during the study period, as their financial data may not accurately reflect the performance of the original entity.
- Exclude PFAs that have faced significant regulatory issues or sanctions during the study period, as their performance may be significantly influenced by these factors.

Based on the above criteria above, only 14 companies met the criteria and were sampled for the study.

Table 1: Variables and Measurement

Variable	Proxy (ies)	Nature of Variable	Measurement	Measurement Source
Investment Portfolio Performance	Return on Equity	Dependent	Ratio of net income to average total assets	Afuberoh & Okoye (2014) Abdulkadir (2016)
Federal Government Securities	FGN BOND	Independent	Proportion of Federal Government Bond to Total Pension Portfolio Investment	Ilodibe & Okonkwo (2024) Nwala& Solomon (2024) Obasa (2023)
Investment in ordinary shares	IOS PLC	Independent	Proportion of Federal Government Bond to Total Pension Portfolio Investment	Kowalewski, (2012) Palaniappan, (2017) Shamsudeen, (2022)

Source: Compile by the Researcher, 2025

This study employed multiple regression analysis and Panel Ordinary Least Squares (OLS) is employed, as it is considered the most suitable technique for handling this sample size compared to other methods.

Model specification

Direct Relationship between pension asset investment strategies and the return on equity of Pension Fund Administrators (PFAs) in Nigeria

$ROEit= \beta_0 + \beta_1 FGBit+ \beta_2 ORDi + {}_e it$

Where: FGB= Federal Government Investment

ORD = Equities of Public Liabilities Companies

ROE = Return on Equity

e=errorterm i = firm t time

IV. DATA PRESENTATION

This section is dedicated to the presentation and analysis of data pertaining to the Effect of asset investment strategies on Federal Government Securities and Ordinary Shares of Public Liability Companies and financial performance of Pension Fund Administrators (PFAs) in Nigeria.

Descriptive Statistics

This section outlines the descriptive statistics for the variables under investigation, Effect of Asset Investment Strategies on Federal Government Securities & Ordinary Shares of Public Liability Companies and financial performance of Nigerian Pension Fund Administrators (PFAs). The presented metrics including mean, standard deviation, minimum, and maximum values characterize the central tendency, dispersion, and range of the data. This summary provides a foundational understanding of the

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dataset's properties and patterns for the core variables before proceeding to inferential statistical testing.

Table 2: *Descriptive statistics*

Variable	Obs.	Mean	Std. Dev.	Minimum	Maximum
FGB	140	0.9551402	0.7018651	0.0375083	3.631174
ORD	140	0.8137269	1.753949	0.0008854	9.88096

Source: Generated using STATA, 2025

From Table 4 above, The Federal Government Securities (FGB) variable reveals a mean value of 0.95, indicating that, on average, Pension Fund Administrators (PFAs) in Nigeria allocate a substantial portion of their investment portfolio to federal government securities. This relatively high mean suggests that government securities remain a preferred and stable investment avenue for PFAs, likely due to their perceived safety, consistent returns, and regulatory encouragement.

The Ordinary Shares (ORD) variable, as presented in Table 4 shows a mean value of 0.81, indicating that, on average, Pension Fund Administrators (PFAs) in Nigeria allocate a modest portion of their investment portfolio to ordinary shares or equities. This suggests a relatively cautious approach towards equity investment, which is understandable given the inherent volatility and market risk associated with stock investments. PFAs, being custodians of long-term retirement savings, may prioritize stability and capital preservation, thereby limiting exposure to the more unpredictable equity market. However, the minimum value of 0.0008 reveals that some firms barely invest in ordinary shares, possibly due to internal risk management policies, limited expertise in equity markets, or a strategic preference for fixed-income or low-risk assets such as government securities.

Table 3: *Correlation matrix*

Variables	ROE	FGB	ORD
ROE	1.0000		
FGB	-0.0816	1.0000	
ORD	0.0407	-0.0966	1.0000

Source: Generated using STATA, 2025

From Table 3 the correlation results show the nature and strength of the relationships between Return on Equity (ROE) and the investment categories, both in their direct forms and when moderated. ROE has a weak negative correlation with Federal Government Investment (FGB) (r = –0.0816) Conversely, ROE shows weak positive correlations with Equities of Public Liability Companies (ORD) (r = 0.0407).

When moderation effects are considered, the results reveal further dynamics. Moderated Federal Government Investment (FGBINT) remains weakly and negatively related to ROE (r = –0.0556), implying that the moderating factor did not improve its relationship with profitability. Similarly, Moderated Equities of Public Liability Companies (ORDINT) shows an almost negligible negative association with ROE (r = –0.0113).

The inter-correlations among the independent variables indicate some strong associations. For instance, Federal Government Investment (FGB) correlates strongly with its moderated form (r = 0.6752), ORD strongly correlates with ORDINT (r = 0.6997), these relationships suggest possible interaction and multicollinearity concerns, which may need to be addressed in regression analysis.

Multicollinearity Test

The Variance Inflation Factor (VIF) is employed to assess multicollinearity in regression analysis. Multicollinearity arises when two or more independent variables in a model are highly correlated, potentially distorting coefficient estimates and undermining the reliability of the results.

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Variance inflation factor

. estat vif

Variable	VIF	1 / VIF
fgb	14.92	0.067006
fgbint	13.92	0.071833
ord	1.38	0.726958
ordint	1.37	0.727828
Mean VIF	6.25	

Heteroskedasticity
Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of roe
H0: Constant variance
chi2(1) = 19.48
Prob > chi2 = 0.0000
Source: Generated using STATA, 2025

The Mean VIF is the average of all the individual Variance Inflation Factor (VIF) values calculated for the independent variables in a regression model. If the Mean VIF is greater than 10, it indicates the presence of multicollinearity among the independent variables. However, if the Mean VIF is less than 10, it suggests the absence of multicollinearity. Based on the Mean VIF of 6.25 obtained from the result above, multicollinearity is absent, as the value is less than 10.

Table 11: Regression Result/ Test of Hypotheses

Variable	Coefficient	Std. Error	t-value	P-value	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
fgb	1.07058	0.1611743	6.64	0.000	0.7514108	1.389749
ord	0.0625667	0.0224123	2.79	0.006	0.0181842	0.1069491
fgbint	-0.0096133	0.0085565	-1.12	0.264	-0.0265574	0.0073308
ordint	-0.0027646	0.0018302	-1.51	0.134	-0.0063888	0.0008597

Statistic	Value
Sigma_u	0.267079
Sigma_e	0.46191671
Rho	0.25055017 (fraction of variance due to (u_i))

F test that all u_i=0: F(13, 118) = 2.45 Prob > F = 0.0057
Source: Generated using STATA, 2025

The results indicate that pension asset investment strategy accounts for 50.55% of the variation in financial performance, measured by Return on Equity (ROE), of Pension Fund Administrators (PFAs) in Nigeria, with the remaining variation attributed to other factors not included in the model. The model is considered a good fit, as evidenced by a Prob > chi² p-value below 0.05.

Federal Government Securities and Financial Performance

The allocation of pension funds to federal government securities exerts a positive and statistically significant influence on Return on Equity (ROE). This relationship underscores the contribution of low-risk, government-backed instruments to the profitability of pension fund administrators by providing stable returns and mitigating portfolio volatility. The coefficient of 1.018585 indicates that, ceteris paribus, a one-unit increase in investment in these securities corresponds to a 1.018585-unit increase in ROE. This finding confirms the strategic value of federal government securities in enhancing returns,

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complying with regulatory guidelines, and fortifying the financial stability of pension institutions in Nigeria.

Investment in Ordinary Share and Financial Performance

The analysis reveals a positive and statistically significant relationship between investments in ordinary shares and Return on Equity (ROE), demonstrating that greater allocation to equities enhances the financial performance of pension fund administrators in Nigeria. This improvement in ROE reflects the superior return potential of equities relative to more conservative assets, derived from capital appreciation and dividend income. Notwithstanding the inherent risks associated with market volatility, the net effect on returns is favourable. Consequently, the strategic inclusion of ordinary shares within investment portfolios is advocated for optimizing long-term financial outcomes.

Discussion of Findings

Federal Government Securities and Financial Performance

The positive and statistically significant impact of federal government securities on Return on Equity (ROE) offers critical insights for the investment strategies of Nigerian pension fund administrators. This finding implies that a greater portfolio allocation to these instruments correlates with enhanced profitability. Federal government securities such as treasury bills, bonds, and other sovereign debt instruments are characterized by their low-risk profile and stable yields, underpinned by government backing. This attributes renders them particularly suitable for risk-averse institutional investors like pension administrators, whose mandate is to preserve contributors' retirement funds while generating sustainable returns.

The positive and significant effect of federal government securities on return on equity (ROE) among pension fund administrators in Nigeria aligns with several empirical studies. For instance, Ogunbiyi and Ihejirika (2020) and Okafor et al. (2021) found that investments in government-backed securities enhance financial performance due to their stability and low risk. Olalekan and Adegbite (2022) also reported consistent ROE growth among pension funds with a strong focus on federal government instruments, while international evidence by Bikker et al. (2010) and Chen and Wong (2020) supports similar outcomes in developed and emerging markets, respectively. However, contrary views exist. Ibe and Agu (2019) argued that overreliance on government securities may limit return potential, especially in low-interest environments. Nwachukwu and Akanni (2021) and Agyemang and Boateng (2022) found that more diversified portfolios, including equities and alternative assets, yielded higher ROE, suggesting the need for a balanced approach to asset allocation.

Investment in Ordinary Share and Financial Performance

The finding that investment in ordinary shares has a positive and statistically significant effect on return on equity (ROE) of pension fund administrators in Nigeria provides valuable insight into the performance dynamics of equity-based investment strategies within the pension industry. This outcome suggests that pension fund administrators who allocate a larger proportion of their investment portfolio to ordinary shares tend to experience improved financial performance. Ordinary shares, while inherently riskier than fixed-income instruments such as government securities or corporate bonds, offer the potential for higher returns through capital appreciation and dividend income. This return-enhancing potential appears to have been realized in the context of Nigerian pension fund investments, as indicated by the significant positive relationship observed in this study. The significance of this finding lies in its implication for portfolio optimization and risk-return balancing strategies. Pension fund administrators in Nigeria have historically leaned towards safer, government-approved investment instruments to mitigate risk and comply with regulatory guidelines. However, the result indicates that a strategic allocation to ordinary shares within the bounds of prudential regulations can substantially enhance profitability. This is particularly important in inflationary environments where returns from fixed-income securities may be eroded over time. Ordinary shares, especially those of fundamentally strong and dividend-paying companies, can act as a hedge against inflation while contributing to long-term capital growth.

V. CONCLUSION AND RECOMMENDATIONS

This study concludes that Nigerian pension fund administrators can enhance their financial performance, investments in federal government securities significantly improve ROE, affirming their strategic value due to their stability, low risk, and reliable returns. Similarly, ordinary shares contribute positively to profitability, offering growth and dividend income despite inherent market risks.

Based on this finding, the following recommendation is provided:
Pension fund administrators in Nigeria are recommended to maintain and, where feasible, increase their allocation to federal government securities to ensure steady returns and preserve capital. However, they should do so within the regulatory investment limits and in consideration of broader portfolio diversification to avoid excessive concentration risk.

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