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EFFECT OF FINANCIAL PERFORMANCE OF PENSION FUND ADMINITRATORS (PFAS) ON ECONOMIC GROWTH IN NIGERIA

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Abstract

The expansion of a nation's national economy is significantly influenced by pension businesses. This study looked at the impact of pension fund administrators' (PFAs') financial performance on Nigeria's economic growth from 2009 to 2021. Return on assets (ROA) and return on equity (ROE) serve as the independent variables. Capital sufficiency and company size served as the control variables, and GDP was used as a stand-in for economic growth as the dependent variable. To ascertain the impact of the financial performance of pension fund administrators (PFAs) on economic development in Nigeria, the study used a correlational research approach. When analysing the panel data, the multiple regression technique—more specifically, robust regression (VCE)—was used. As a result, it was discovered that ROA and GDP are positively correlated; however, ROE and economic growth in Nigeria are negatively correlated and statistically significant. The report recommended that PenCom step up efforts to sign up more workers in the formal and informal sectors so that there would be more pension funds (assets) available for PFAs to manage and invest for better financial performance and, as a result, greater economic growth in Nigeria.

Keywords: PenCom, Random Effect, Fixed Effect, Economic Growth, Pension Fund Administrators

1. INTRODUCTION

Numerous academics have been particularly interested in the pivotal role that pension funds play in economic growth because, in recent years, the pension industry has undergone significant changes in a number of nations, including the United States, the United Kingdom, Australia, Chile, Brazil, and South Africa, among others. This is due to the belief that pensions are a significant concern for current employees, retired employees, and other parties involved in the pension business. Public service is typically associated with low pay, especially

in emerging nations, but retirement benefits make working for a public sector organisation an easy draw for employees. However, these post-retirement hopes have grown more elusive over time and can even be unpredictable, particularly for Nigerian retired civil officials. Additionally, it has been claimed that some elderly people have passed away while waiting in line for their post-retirement payments (ThisDay, 2020). The Pension Reforms Act (PRA) 2014 was passed in response to this pitiful scenario, with the main goal of resolving the shortcomings of the defined benefit pension (old) system. In order to allow the government and employees to each pay 10% and 8% of the reserve for the pension fund, respectively, the Contributory Pension Scheme (CPS) was developed. In contrast, Nigerian Army employees are required to contribute 2.5%, while the employer is required to contribute 12.5% (Ovbiagel, 2015).

By investing pension assets to produce suitable returns for retirees, pension fund administrators (PFAs) play a crucial role in the expansion of the GDP. However, there hasn't been much stability in the macroeconomic climate that the Nigerian pension market operates in. For instance, according to PenCom (2017), the GDP growth rate was 6.96% in 2009, but by 2020, the proportion of economic growth had dropped to an unfavourable rate (-1.79%). Pension regulators, pension fund administrators (PFAs), pension fund custodians (PFCs), and scholars have all taken notice of the GDP's recent skewed growth. The question of whether the financial success of PFAs helps to expand a nation's economy has also recently been a topic of discussion among policymakers, finance experts, and pension scholars (Ledhem & Mekidiche, 2020). This further demonstrates the necessity of continuing to examine the impact of PFAs' financial performance on Nigeria's economic expansion. The following describes financial performance indexes in relation to GDP (economic growth).

Firstly, financial performance indicators like ROA and ROE are used to gauge how effectively an entity can use its assets and equity to produce revenue. The pension contributions and anticipated investment income generated, which must be equivalent to or greater than the pension benefits paid out, support the financial performance, solvency, and stability of a pension fund administrator (Ogungbade et al., 2022). The Contributory Pension Scheme in Nigeria's long-term viability and existence depend on the financial performance (profitability) of pension fund administrators. In order to enhance the efficiency of pension fund administrators (PFAs) in Nigeria, the Federal Government of Nigeria has over the years implemented a number of pension reforms through the enactment of the Pension Reforms Act (2004), which was later repealed, the current Pension

Reforms Act (2014), as well as National Pension Commission (PenCom) circulars. The primary objective of PFAs under contributory pension schemes is to generate returns on invested pension funds that accrue to individual retirement savings accounts (RSA) in accordance with the worker's investment objectives (OECD, 2006). These gains' rates may be expressed as a return on assets (ROA), a return on equity (ROE), or a combination of the two. Despite this, the PFAs' financial performance in terms of ROA and ROE has been hampered by a lack of pension investment opportunities and investment risk (Udom & Nwakanma, 2018). In addition, pension fund managers' bad investment choices, the Pension Regulator's investment restrictions, and the nation's low interest rates are all affecting the financial performance of the pension fund industry in Nigeria (Adekoya, Nwaobia, & Siyanbola, 2022). Such difficulties have a tendency to reduce the pension fund administrators' (managers') contributions to Nigeria's actual gross domestic product (GDP) growth rate.

Secondly, control variables (capital sufficiency and firm size) were employed to account for any bias in the study's model, following research like Thompson (2021), Marshel (2020), Ledhem and Mekidiche (2020), and Murphy and Musalem (2004).

Thirdly, the actual Gross Domestic Product (GDP), which represents the total amount of goods and services generated in a nation, is used to gauge that nation's economic growth (Friday & Micah, 2019). Any government's success is primarily measured by the strength of its economy, which also defines the standard of living that its population will experience. The amount of national savings that could be attained through employee retirement savings is one of the factors that determines economic growth. For instance, the total value of assets held by pension funds was N1.529 trillion as of December 31, 2009 (PenCom, 2017), and it increased to N13.42 trillion as of December 31, 2021 (PenCom, 2022). It is still debated in the literature how well PFAs manage and invest the assets of pension funds to produce acceptable returns for stakeholders and, ultimately, boost GDP.

Last but not least, in Nigeria, retired federal (government) employees are overseen by two different offices: the National Pensions Commission (PenCom) and the Pension Transitional Arrangement Directorate (PTAD). In contrast, each state government has its own Pension Board for handling pension-related matters. Federal pensioners who retired on or before June 30, 2007, are operationally handled by PTAD and automatically fall under the Defined Benefit

Pension Scheme (DBS), whereas those who retired on or after July 1, 2007, fall under the Contributory Pensions Scheme (CPS), which is governed by PenCom but is administered by pension fund administrators (The Sun, 2019). Retirees of the Federal Government of Nigeria can either belong to PTAD (Defined Benefit Pension Scheme) or PFAs under PenCom (Defined Contribution Pension Scheme), depending on their date of retirement. At the beginning of the Pension Reform Act (2004), which was around N2 trillion in 2004, the Federal Government of Nigeria found it difficult to offset the debt resulting from old Defined Benefit Scheme pension benefits (DCS, 2018). Despite enormous progress made by the National Pension Commission (PenCom) in expanding the contributory pension scheme through prudent management, the government has yet to address some significant issues, such as the lack of investments in private securities and asset-backed securities, inadequate risk management, market fluctuations, and negative returns (Imouokhome, 2021). especially the concerns about tightening pension regulations to increase PFAs' profitability. Because of this, the pain and suffering of retirees is made worse when they reflect on their dedication and loyalty while working for the country but find that their right to a pension is denied when they most need it, leading to their deaths while waiting for their retirement benefits (Aibieyi & Oyemwinmina, 2016).

Notably, it is undeniable that pension fund administrators (PFAs) made a significant contribution to the growth of the defined contribution pension scheme in Nigeria following the passage of the Pension Reform Act (2004). When compared to pre-2004 pension plans, which were marked by underfunding, corruption, uncertain government policies on pension affairs, poor record-keeping, and inept staff, retirees' positions have been somewhat improved by PFAs (Bassey, Etim, & Asinya, 2010).

Despite the fact that Nigeria's contributory pension system provides people and the economy with many benefits, it also has several problems, including corruption carried over from the previous pension system and difficulties PFAs have managing the pension system (Ibenegbu, 2018). The ability of the contributory pension scheme to address long-term financial and investment issues in Nigeria is still in question a few years after its introduction (Nwanne, 2020). The PFAs' contribution to the nation's economic growth is insufficient, as seen by the GDP growth of -1.9% in the year 2020 (Adegbesan, 2021) as compared to a positive 8.04% in the year 2009. Furthermore, as of December 2021, Nigeria had a working population of about 58 million (Sasu, 2022), whereas

the number of people covered by the contributory pension plan in the same year was only 9.529 million (Vanguard, 2022), representing 16% of the nation's working class. According to this, 76% of workers in the nation do not now participate in a contribution pension scheme, which reduces the national savings and has a negative influence on Nigeria's economic development. Particularly, the Nigeria Police Force is still fighting for an exemption from the pension plan, which would further reduce the number of workers covered by the scheme (Amaechi, 2022). In addition, the Nigeria Intelligence Agency (NIA), the Nigerian Army, and the Department of State Security (DSS) had already been exempted from the Contributory Pension Scheme. In contrast to OECD countries, where the ratio of pension assets to GDP stood at 66.9% as of 2022, it is still low in emerging nations (Oro &Njenga, 2022). The achievement of the pension plan was rendered insignificant by obstacles such as low coverage of the scheme, the government's insensitivity to the plight of pensioners, and the weak political will of the state governments in particular (Takor, 2021). In addition, the investment of the long-term contributory pension fund subtly influenced the economic development of Nigeria.

Prior studies have also revealed that the contributory pension scheme has not meaningfully impacted the economic growth in Nigeria as a result of weak management of the pension funds and assets, thereby undermining the interest and wellbeing of pensioners in the country (Arumona, Ogbaje, & Obafemi, 2020). Due to the aforementioned issue, it was important to conduct this study, which would contribute to the body of knowledge regarding the impact of PFAs' financial performance on economic growth. Furthermore, there was hardly any empirical research that attempted to examine the impact of eighteen (18) pension fund administrators' (PFAs) financial performance on the economic development of Nigeria from 2009 to 2021. Prior research on the factors influencing economic growth centred mainly on the banking industry. For instance, studies such as Alam et al. (2021) in India; Kwarko et al. (2021) in Ghana; Ege and Topaloglu (2020) in EU countries; Fatih and Isil (2020) in eight (8) countries (Asia and Europe); Ledhem and Mekidiche (2020) in five (5) countries (Asia and Middle East); and Islam, Amin, and Molla (2019) in Bangladesh carried out empirical research on the relationship between banks' financial performance (ROA and ROE) and economic growth (GDP). Additionally, it is necessary to neutralise or control an unrelated variable (the control variable) in the study's model in order to properly measure the link between explained and explanatory factors (Allen, 2017). Capital adequacy and

company size are therefore used in this study as control variables that would be maintained constant when conducting this empirical research, similar to the approach taken by earlier studies like Olarewaju and Msomi (2021), Ferina (2021), and Ledhem and Mekidiche (2020). The gap in the literature will be filled empirically in this study since there may not have been a study on the same topic that used the capital adequacy ratio and company size as control variables to avoid the problem of bias when analysing the economic growth of Nigeria. Therefore, the goal of the study was to address the following research question in a relevant manner: Does the financial performance of Nigeria's pension fund administrators (PFAs) have a substantial impact on the country's economic growth (GDP)?

1.1. Conceptual Framework

It is impossible to overstate the importance of using concepts in social science research. This is due to the fact that the broad use and perception of such terms may differ from how they are employed in research. Consequently, the operationalized ideas employed in this study were discussed in this section. In this part, the ideas of financial performance and economic growth are covered.

1.1.1. Financial Performance

Financial performance is the way in which a firm earns revenues and manages assets and liabilities for its overall financial soundness in a feasible and enduring manner. Financial performance is the extent to which a firm achieves its financial objectives in order to ensure its long-term financial health and survival. It is a part of an entity's financial management risk and is used to evaluate the results of its policies and operations in monetary terms. The financial performance of a firm can be analysed with regards to its profitability, liquidity, working capital, fixed assets, fund flow, and social performance (Verma, 2020). Since profitability performance is so central to the success and survival of business entities, the focus of this study will be mainly on the profitability performance of pension fund administrators in Nigeria. Profitability enables a firm to efficiently utilise its assets (loans, securities, cash, etc.) and equity (shareholders' fund and retained earnings) to generate profits for the overall growth of the national economy.

1.1.2. Economic growth (GDP)

The entire value of all finished goods produced and services provided within an economy during a specific time period is measured by the gross domestic product

(GDP). GDP has been used as a study variable in a number of studies in different ways. The literature has used real GDP, per-capita GDP, increase in real GDP, log of per-capita GDP, and ln GDP to denote GDP. The most quantitative indicator of overall economic activity in a nation, GDP represents all commodities and services having monetary prices (Otambo, 2016). According to Topak & Talu (2017), GDP growth is used to gauge the health of the economy since rising company loans and deposits also result in lower loan losses and higher net interest revenue (Combey & Togbenou, 2017). This is also the case because increased GDP growth increases disposable income, lowers loan default rates, and decreases unemployment. Therefore, GDP is the most important economic indicator for determining how well a nation's economy is doing overall (Hamza & Khan, 2014). In addition, pension funds make a significant contribution to a nation's GDP (Njoroge, 2014). Because GDP indicates the size of the market in which businesses operate (Christos & Geoffrey, 2011), positive GDP trend growth tends to have a positive impact on company profitability, whereas a negative GDP growth rate is likely to have a negative impact (Zawadi, 2014).

2. LITERATURE REVIEW

This section largely focused on material that was related to the financial success of pension fund managers and economic development in both developed and emerging countries. There are numerous schools of thought on financial performance and how it affects a nation's ability to expand economically. Some research on the factors influencing PFAs' financial performance and GDP concentrates on a single nation, while others concentrate on cross-national studies. In order to broaden the scope of this study, studies on financial performance in relation to GDP are offered below.

2.1. Financial Performance and Economic Growth

Alam et al. (2021) looked into the effect of bank performance on economic growth in India from 2009 to 2019. Twenty (20) banks' worth of data were gathered, and panel data analysis was used to examine it. The dependent variable (economic growth) was proxied by GDP, whereas the independent variable (financial performance) was proxied by interest margin, lending capacity, bank investments, and return on assets (ROA). The results showed a substantial and positive relationship between financial performance (ROA) and economic growth. The study recommended extending the study term and adding additional pertinent variables related to financial performance.

Additionally, Kwarko et al. (2021) investigated the impact of the mentioned banks' performance on Ghana's economic growth. Using a panel regression approach (fixed effect model), data from five (5) banks from the years 2010 to 2019 were calculated. The capital adequacy ratio, non-interest expense income (NEI), return on assets (ROA), and return on equity (ROE) were the study's independent variables, and GDP was its dependent variable. The findings demonstrated a favourable and significant link between NIE, ROA, and ROE and GDP growth. The report recommended that a follow-up study include more connected companies.

Additionally, from 2014 to 2018, Ledhem and Mekidiche (2020) conducted research on the relationship between the financial performance of Islamic banks and economic growth in Malaysia, Indonesia, Brunei, Turkey, and Saudi Arabia. The dependent variable (GDP) was used as a proxy for economic growth, while the independent variables (capital adequacy ratio, asset quality ratio, cost to income ratio, return on assets (ROA), return on equity (ROE), net profit margin (NPM), and liquidity assets ratio) were used as proxies for financial performance. The findings showed that, during the course of the research, ROA has a negative and statistically significant relationship with economic growth, while ROE has a positive and statistically significant relationship with economic growth. However, the study is limited to Islamic financing banks, leaving potential for research on other organisations in the financial sector of the economy.

Additionally, Ege and Topaloglu (2020) conducted research on the relationship between the banking sector's financial performance and economic growth in the member states of the European Union (EU) from 1996 to 2017. In order to describe the independent variable (financial performance), the study used the ROA, ROE, cost-to-income ratio, and stock market capitalization to GDP ratio. The GDP growth rate was then used to indicate economic growth. The panel data method was used to estimate the secondary data that was obtained. The study's findings indicated a strong and positive correlation between bank financial performance and EU countries economic expansion.

In a study published in 2020, Fatih and Isil examined the relationship between bank profitability and economic growth in eight (8) nations from 2009 to 2018: Argentina, Brazil, Chile, Croatia, India, Poland, Russia, and Turkey. Profitability was assessed using ROA (an independent variable), and economic growth was assessed using GDP (a dependent variable). The study's secondary data were analysed using a panel causality test. The findings showed that in nations like Chile, Poland, Turkey, and Russia, there is a positive and statistically

significant association between performance (ROA) and economic growth (GDP). By taking into account variables including return on equity, bank loans, and bank deposits, the study recommended the replication of similar empirical work in another jurisdiction.

Similar to this, Islam, Amin, and Molla (2019) assessed how sixteen (16) banks' financial performance had an impact on Bangladesh's economic growth from 2008 to 2017. The operating profit growth rate (OPGR), return on equity (ROE), return on investment (ROI), bank size (BS), and gross domestic product (GDP) were used to measure financial performance, while return on equity (ROE), return on investment (ROI), and operating profit growth rate (OPGR) were used to quantify economic growth (dependent variable). The study's findings revealed a strong and negative association between banks' financial performance and economic growth for ROI and OPGR, but a positive and significant relationship between BS and ROE. Nevertheless, the study disregarded the use of a control variable, which could have improved the study's conclusion.

Additionally, Paavo (2017) studied the effects of Namibia's commercial bank development on economic growth from 2005 to 2016. The study's data were estimated using the Granger causality test. GDP served as a proxy for economic growth (the dependent variable), whereas liquidity assets, the amount of capital kept, and the credit ratio served as proxies for commercial bank development (the independent variable). It was discovered that the expansion of commercial banks and economic expansion are positively correlated. Future research on more factors related to economic growth is recommended by the study.

From 2005 to 2014, Adekola (2016) looked at the impact of banks' financial performance on economic growth in Nigeria. The dependent variable (economic growth) was proxied by gross domestic product (GDP), whereas the independent variable (profitability) was proxied by return on assets (ROA) and return on equity (ROE). The annual financial report of five (5) listed commercial Nigerian banks provided the secondary data. Regression analysis was used to examine it. It was discovered that the financial health of the banks has a detrimental and statistically significant impact on Nigeria's economic expansion. Nevertheless, the study's findings were limited to Nigeria's banking industry.

2.2. Summary and Research Gap

On the subject, a number of earlier studies from various eras, industries, and nations were discussed. The results were mixed, indicating that the problems

surrounding the impact of financial performance on economic growth, particularly in relation to pension funds, have not yet been adequately resolved. A financial crisis is predicted because of the substantial decrease in the gross domestic product (GDP) rate from +8% in 2009 to -1.79% in 2020. Therefore, the study period (2009–2021) is special since it corresponds to the time when GDP fell precipitously.

2.3. Theoretical Framework

The conceptual framework of this study indicates how firms' performance influence economic growth based on the theoretical perspective.

2.3.1. Endogenous Growth Theory

According to the hypothesis, which was put forth by Folster and Henrekson (1997), productivity increases when workers are continuously given more of the tools they need to do their jobs. Additionally, it suggests that internal institutional processes rather than external ones determine the rate of economic progress (Alam et al., 2021). These internal forces affect the mechanisms of economic growth and include increased innovation, larger investments, and changes in technology. As a result, the theory helps to build the theoretical foundation for the study linking financial success to economic growth.

2.4. Research Framework

Having reviewed prior studies on the relationship between financial performance and economic growth, the research framework in Figure 1 of the study was developed in order to encapsulate the study objective and scope with regards to the explained (dependent) and explanatory (independent) variables used in this empirical research.

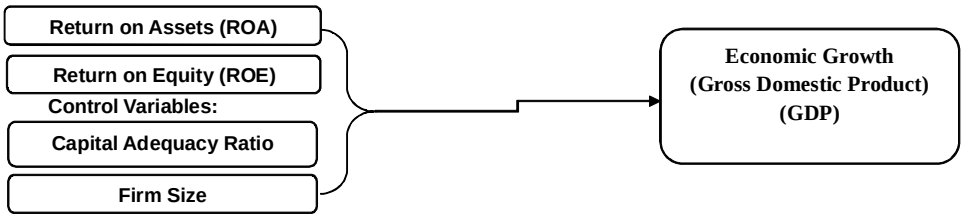

Figure 1: Research Framework

Source: Author's Formulation

3. RESEARCH METHODOLOGY

3.1. Introduction

This section presents the methods, such as research design, population and sampling techniques, data collection, and analysis, utilised in this study. Research methodology, therefore, involves numerous steps normally followed when solving problems in the research at hand (Tetteh et al., 2019).

3.2. Research Design

The study employed a correlational research design due to the fact that it examined the degree of relationship between two or more variables. Thus, the relationship between PFAs' performance and economic growth will be understood by using the correlational research design.

3.3. Population and Adjusted Population

The study population contains all twenty-two (22) pension fund administrators (PFAs) in Nigeria whose annual reports were published by PENCOM as of December 2021. Those whose annual reports were not published were excluded so as to avoid data availability and reliability challenges. Filtering was, however, used to rule out the PFAs that were not in operation as of December 31, 2009, and whose annual accounts were not published by PenCom for the period of 2009 to 2021. Subsequently, four (4) PFAs (IEI-Anchor Pension Managers Limited, Investment One Pension Managers Limited, Nigerian University Pension Management Company (NUPEMCO), and NPF Pensions Limited) were removed because they did not meet the filtering criteria of being in operation between the 2009 and 2021 financial periods. The eighteen (18) PFAs that fulfilled the condition were utilised as the adjusted population of this research, as shown in Table 3.1.

3.4. Data Collection Methods and Sources

This study made use of secondary data from the Central Bank of Nigeria's (CBN) Statistical Bulletin and the annual reports of the chosen Pension Fund Administrators (PFAs). Numerous studies on the factors affecting PFA performance have employed quantitative data; therefore, its usage may be justified. Palaniappan (2017), Muriithi (2017), Kowalewski (2012), Hlavá (2011), Albrecht, Shamsub, and Giannatasio (2007), and Bikker and Dreu (2006) are just a few of the investigations.

Table 1: Lists of Pension Fund Administrators (PFAs) in Nigeria as at 31st December, 2021

	Population	*Adjusted Population*		*Filtering*
S/N	Pension Fund Administrators (PFAs)	S/N	Pension Fund Administrators (PFAs)	REMARKS
1	AIICO Pension Managers Limited	1	AIICO Pension Managers Limited	
2	APT Pension Funds Managers Limited	2	APT Pension Funds Managers Limited	
3	ARM Pension Managers Limited	3	ARM Pension Managers Limited	
4	AXA Mansard Pensions Limited	4	Penman/AXA Mansard Pensions Limited	
5	Crusader Sterling Pension Limited	5	Crusader Sterling Pension Limited	
6	First Guarantee Pension Limited	6	First Guarantee Pension Limited	
7	VeritasGlanvills Pensions Limited	7	VeritasGlanvills Pensions Limited	
8	Fidelity Pension Managers Limited	8	Fidelity Pension Managers Limited	
9	IEI-Anchor Pension Managers Limited			REMOVED
10	Investment One Pension Managers Limited			REMOVED
11	LeadwayPensure PFA Limited	9	LeadwayPensure PFA Limited	
12	NPF Pensions Limited			REMOVED
13	FCMB Pensions Limited	10	FCMB Pensions Limited	
14	Nigerian University Pension Management Company			REMOVED
15	NLPC Pension Fund Administrators Ltd.	11	NLPC Pension Fund Administrators Ltd.	
16	Oak Pensions Limited	12	Oak Pensions Limited	
17	Pensions Alliance Limited	13	Pensions Alliance Limited	
18	Premium Pension Limited	14	Premium Pension Limited	
19	Radix Pension Managers Limited	15	Radix Pension Managers Limited	
20	Sigma Pensions Limited	16	Sigma Pensions Limited	
21	Stanbic IBTC Pension Managers Limited	17	Stanbic IBTC Pension Managers Ltd	
22	Trustfund Pensions Limited	18	Trustfund Pensions Limited	

Source: Author's Compilation

3.5. Data Analysis and Methods

The study adopted the generalised least squares (GLS) regression technique in order to examine the effect of PFAs' performance (returns on assets and return on equity) on economic growth in Nigeria. STATA statistical software was employed in analysing the research data. Robustness tests were also performed to build resistance to errors in the research results.

3.6. Measurement of Research Variables

This section presents the independent and dependent variable measurements as depicted in Table 3.2 of the study.

Table 2: Variable Description and their Priori Relationship

Variables	*Measure*	*Notation*	*Source*	*Anticipated Effect*
		Dependent variable		
GDP Growth Rate	Annual Real GDP Rate	GDP	Bijlsma, Bonekamp, Ewijk, & Haaijen (2018)	N/A
		Independent Variables		
Return on Assets	Net Income after tax to Total Assets	ROA	Thompson, (2021)	+/-
Return on Equity	Net Income after tax to Shareholders' Equity	ROE	Thompson, (2021)	+/-
		Control Variable		
Capital Adequacy Ratio	Shareholders' Equity to Total Assets	EQTA	Isayas, (2022)	**+/-**
Firm Size	Firm Size Natural log of Total Assets	Firmsize	Isayas, (2022)	+/-

Source: Developed through Prior Studies.

3.7. Specification of the Study Model

The study's model, which is consistent with prior literature such as Alam, Rabbani, Tausif, and Abey (2021); Kwarko et al. (2021); Ledhem and Mekidiche

(2020); Ege and Topaloglu (2020); Fatih and Isil (2020), but modified to suit the purpose of this study, was used to investigate the effect of PFAs' performance on economic growth in Nigeria.

$$\pi it = f(\Sigma IVit, \varepsilon)$$

$$GDPit = \beta_{0it} + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \varepsilon_{it}$$

Where GDP= Annual Real GDP Ratein year (t).

ROA= Return on Assets in year (t).

ROE= Return on Equity in year (t).

EQTA = Equity to Total Assets in year (t).

FIRMSIZE= Natural log of Total Assets in year (t).

β1 – β4= Slope coefficient

β0 = Intercept

ε = error term.

4. RESULTS AND DISCUSSION

4.1. Summary Statistics

Four variables were used in this research model for testing the hypotheses of the study. Two independent variables (ROA and ROE), two control variables (capital adequacy and firm size), and a dependent variable (GDP) were utilised for the study model. Table 3 depicts the summary statistics for the utilised variables.

Table 3: Summary Statistics for the Response and Explanatory Variables

Obs=234	*Mean*	*Std.Dev.*	*Min.*	*Max.*	*Skewness*	*Kurtosis*
GDP	0.03569	0.03157	-0.0179	0.0804	-0.2204	2.00522
ROA	0.11053	0.22775	-1.5232	0.50721	-3.221	20.0432
ROE	0.16103	0.26413	-1.0854	0.89097	-1.2589	6.621235
EQTA	0.7054	0.60644	-5.7405	2.75078	-7.7704	78.6466
FIRMSIZE	6.44616	0.60732	4.899032	8.663114	0.35974	4.568257

Source: Stata Output

From Table 3, it can be seen that the majority of pension fund administrators (PFAs) contributed 3.56% of their financial performance to the GDP. As a

result, the GDP mean value of 0.03569 indicates that PFAs' impact on the economy was marginal during the study period. However, the level of GDP obtained decreased from 0.084 (the maximum) to -0.0179 (the minimum), further demonstrating the wide range of economic instability over the study period.

Conversely, the standard deviation of ROA is 0.22775, which reveals that there is a certain level of variability. This variability is a result of the negative GDP in the 2016 economic recession due to a fall in price and demand for crude oil, as well as the 2020 economic recession occasioned by the COVID-19 pandemic.

The skewness of the independent variables utilised (ROA and ROE) and the dependent variable (GDP) also complied with the normally distributed data set statement in the range of 7. Due to the academic stance that the predicted range of chance fluctuations for skewness and kurtosis is +/-7, it may be concluded that GDP, ROA, and ROE are normally distributed (Tabachnick & Fidell, 2007). The summary statistics mentioned above demonstrated that the variables fall within the permitted skewness range. While the kurtosis of the GDP, ROE, and firm size are within the range, those of the ROA and EQTA are more than (>)7, indicating the leptokurtic nature of the ROA and EQTA curves. This shows that ROA and EQTA have a larger kurtosis than expected based on their normal distribution, which could result in higher mean and standard deviation volatility and very low GDP contributions. Therefore, low values of kurtosis imply a significant level of the pension fund's contribution to Nigeria's economic growth, while high levels of kurtosis suggest a very low level of the pension fund's GDP contribution.

4.2. Correlation Results (Inferential Statistics)

The Table 4 depicts the correlations of the research variables.

Table 4: Correlation Matrix Table

Variables	*gdp*	*roa*	*roe*	*eqta*	*firmsize*
gdp	1.0000				
roa	-0.2065***	1.0000			
roe	-0.1324*	0.7073***	1.0000		
eqta	-0.2172***	0.536***	-0.018	1.0000	
firmsize	-0.3538***	0.3020***	0.1811***	0.1647**	1.0000

Source: Correlation matrix result using STATA

(***;**;*) indicates level of significance at 1%, 5% and 10%

Table 4 shows the degree of relationship between the financial performance of pension fund administrators (PFAs) and economic growth in Nigeria from 2009 to the 2021 study period. The table indicates that there is a negative and statistically significant association between ROA, EQTA, FIRMSIZE, ROE, and GDP, with correlation coefficients of -0.2065, -0.2172, -0.3538, and -0.1324 at 1% and 10% significant levels. This implies that the levels of ROA, EQTA, FIRMSIZE, and ROE are insufficient to drive higher economic growth in Nigeria. Consequently, in order to examine the effect of the financial performance of pension fund administrators (PFAs) on economic growth in Nigeria, the models of the study were estimated using multiple regression techniques, as presented and discussed in the following heading.

4.3. Multicollinearity Test

Regression analysis assumes that there is no collinearity between the independent variables. This study tested whether multi-collinearity existed or not among the independent variables, and the results of the test revealed that multi-collinearity was not present among the variables utilised in this empirical research, as shown in Table 4.3. The variance inflation factor (VIF), whose coefficients ranged between 10% and 100%, was between 1 and 10. Since the tolerance coefficients are not really close to zero, multicollinearity is not thought to be a problem (Gujarati, 1995).

4.4. Heteroskedasticity Test

When the number of entities being studied exceeds the period of operation, the fixed effect/random effect model or pooled ordinary least squares (OLS) is the most appropriate technique of analysis (Siddiqu, Ali, & Qadri, 2019). The panel data set of this study therefore consists of eighteen (18) companies over a period of thirteen (13) years. The Hausman Test specified that the Fixed Effect (FE) Model was the most suitable based on the significant p-level of 0.0000 in Table 5:

The modified Wald test was also applied in order to check for the presence of heteroskedasticity when estimating the fixed effect. The result in Table 6 confirms the existence of heteroskedasticity.

4.5. Results of Hypotheses Testing

A panel or longitudinal data set has several entities, each of which has repeated measurements at various time periods. A fixed or random effect model is

Table 5 : Hausman Test

	…..Coefficients……			
	(b)	*(B)*	*(b-B)*	*sqtr(diag(V_b-V_B))*
	FE	RE	Difference	S.E.
roa	0.001102	0.024368	-0.0232662	0.0079176
roe	-0.02859	-0.02433	-0.0042593	0.0034739
eqta	-0.00814	-0.01369	0.00555	0.001721
firmsize	-0.02964	-0.01722	-0.0124124	0.0023931

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 31.50
Prob>chi2 = 0.0000

Source: Hausman Test result using STATA

Table 6: Modified Wald test for Groupwise Heteroskedasticity in fixed effect regression model

H0: sigma(i)^2	= sigma^2 for all i
chi2 (18)	= 45.71
Prob>chi2	= 0.0003

Source: Modified Wald Test result using STATA

therefore used to estimate time, individual (group) effects, or both in panel data (Park, 2011). The use of longitudinal data in the study model allows for testing for unobservable firm attributes that may be fixed in entities and time periods. Therefore, regression equations for random and fixed effects models were estimated, and the Hausman test was performed to specify the more appropriate results from the two models. The fixed effect model is most suitable when the p-value of the Hausman test is less than 5%, whereas the random effect model is most appropriate when the p-value is more than 0.05. Since the Hausman test specified the fixed effect model as the most suitable model with a p-value of 0.0440, as depicted in Table 4.4 of this study, the modified Wald test for the fixed effect was further performed, which revealed the presence of heteroskedasticity with a p-value of 0.0003. Notwithstanding, robust regression (VCE) was conducted to correct for the issue of heteroskedasticity in the model of the study, as shown in Table 7.

Table 7: Summary of Regression Result

Variable	*Coefficient*	*Std. Err.*	*t-Statistic*	*Prob.*
C	0.2330489	0.089633	2.60	0.019**
roa	0.0011021	0.013895	0.08	0.938
roe	-0.0285876	1.22E-02	-2.34	0.032 **
eqta	-0.0081408	0.006413	-1.27	0.221
firmsize	-0.0296359	0.014513	-2.04	0.057*
R^2 Squared	0.2758			
F Stat (4, 17)	21.45			
Prob(F)	0.0000			

Source: Robust Regression VCE result using STATA
(***;**;*) indicates level of significance at 1%, 5% and 10%

4.6. Value substitution in the model of the study

The coefficients of ROA and ROE (financial performance) are substituted in the equation below.

$$GDPit = \beta 0it+0.0011021ROAit-0.0285876ROEit-0.0081408EQTAit-0.0296359FIRMSIZEit +0.2330489$$

Table 7 shows that the intercept coefficient is positive, which indicates that gross domestic product (GDP) can still withstand any financial shock when the independent variables are held constant. However, the positive and significant result of the intercept coefficient would have made the probability of such an event occurring (with a p-value of 0.000) very low.

Furthermore, Table 7 also revealed that the coefficients of the explanatory variables are in line with the a priori expectations of this study. The ROA coefficient is positive but insignificant. The result is unsurprising because of the low level of profitability (financial performance) of the sampled PFAs during the study period. This indicates that the financial performance (ROA) of the pension fund administrators (PFAs) slightly improves the gross domestic product (economic growth) in Nigeria. This is due to the fact that the Nigerian pension fund's assets can mainly be invested in stocks, bonds, sukuk, or other debt instruments of the government (PenCom, 2019). Conversely, the coefficient of ROE is negative and statistically significant. This indicates that as GDP increases, the PFAs' financial performance decreases, which could mean that the ROE is affected by a high equity multiplier.

Return on Assets (ROA) and Economic Growth (GDP)

$H_0$1: The return on assets (ROA) of pension fund administrators (PFAs) has no significant effect on economic growth (GDP) in Nigeria

Based on the robust regression analysis, the t-value of 0.0011021 and p-value of 0.938 showed that there was a positive but statistically insignificant relationship between the financial performance (ROA) of the pension fund administrators (PFAs) and economic growth in Nigeria. So, the null hypothesis is not rejected.

As expected, the positive association between ROA and GDP revealed that there is a slight contribution of PFAs to the enhancement of economic growth in Nigeria. Also, PFAs' greater innovation, higher investments, and changes in physical capital (technology) slightly influence the processes of economic growth in Nigeria.

The study findings correspond with those of Kwarko et al. (2021); Alam et al. (2021); Fatih and Isil (2020); Ege and Topaloglu (2020); and Paavo (2017), which showed a positive relationship between ROA and economic progress. Notwithstanding, Ledhem and Mekidiche (2020) and Adekola (2016) revealed a contradictory result.

The result of this study is also in line with Endogenous Growth Theory, which states that economic growth is influenced by internal factors such as ROA of entities rather than exogenous forces.

Return on Equity (ROE) and Economic Growth (GDP)

$H_0$2: The return on equity (ROE) of pension fund administrators (PFAs) has no significant effect on economic growth (GDP) in Nigeria

According to the estimation from the robust regression (VCE), the ROE of the pension fund administrators (PFAs) and economic growth in Nigeria had a bad and statistically significant relationship, as indicated by the t-value of -2.34 and p-value of 0.032. The null hypothesis is therefore disproved.

As a result, the ROE-GDP link was negative and significant, indicating that PFAs were not doing enough to boost Nigeria's economic growth. Additionally, it shows that a decline in PFA profitability, investment, and physical capital does not boost Nigeria's economic expansion.

The study's conclusions are consistent with those of Ledhem and Mekidiche (2020) and Adekola (2016), who found a link between ROE and economic

growth to be unfavourable. On the other hand, Fatih, Isil, and Molla (2020) and Islam, Amin, and Molla (2019) demonstrated a favourable and substantial outcome.

However, other parameters like the capital adequacy ratio and firm size, particularly in terms of the economies of scale accessible to larger pension managers, do not positively affect the GDP in relation to the PFAs' financial success.

4.7. Implications of Findings

The following is the study's main takeaway from its findings:

The financial performance (ROA) of PFAs had a favourable but statistically insignificant impact on Nigeria's economic expansion. The upshot of this is that because the PFAs' contribution is so small, the country's GDP cannot be significantly increased throughout the research period. The outcome was caused by the fact that as of 2021, 16% of Nigeria's working population was contributing to pensions, which indicates that 76% of workers have not enrolled in the Contributory Pension Scheme, which would increase national savings and, eventually, advance Nigeria's economy.

5. CONCLUSION

This study tries to determine the connection between financial success and economic expansion. The results of this study's Table 4.5 show that the signs of the explanatory variable coefficients used are consistent with a priori predictions. Because of the widespread economic unrest that existed during the research period, the outcome is not unexpected. Due to the fact that just 16% of the nation's working class had signed up for the contributory pension scheme at the time of the study, PFAs also made a minimal contribution to the nation's economic development.

5.1. Recommendation

In line with the findings and conclusions reached, the following recommendations are offered:

1. According to the findings, the low financial performance of the PFAs cannot contribute to the country's economic growth because of the low amount of pension funds (contributions) in comparison to the size of Nigeria's working class. Therefore, PenCom should step up efforts to include more formal and informal sectors at the federal,

state, and local levels in the contributory pension scheme. This will increase the amount of pension funds (assets) that PFAs can manage and invest for higher profitability, which will lead to greater economic growth in Nigeria.

2. Taking into account the firm-size (control) variable, which had a negative and significant result, the PFAs should increase their managerial effectiveness, financial capacity, technical advancements, and demand for (more) new enrollees in the Contributory Pension Scheme (CPS) in order to benefit from economies of scale.

5.2. Limitations of the Study

This study focused on the effect of the financial performance of pension fund administrators (PFAs) on economic growth in Nigeria. Therefore, this study covers only PFAs and not other firms in Nigeria because the profitability (financial performance) of non-pension management may not be influenced by the same factors being investigated in this study. Also, the study only examined two independent variables, whereas there are numerous financial performance metrics such as net profit margin, ROI, Tobin's Q, and EPS that influence the growth of GDP. Further research can therefore be conducted on the above areas not covered by this study.

5.3. Study Contribution to Knowledge

The major contributions of this research work to knowledge are as follows:

1. Firstly, it is the first study to apply endogenous growth theory to determine how the financial performance of PFAs influences economic growth in Nigeria.
2. Secondly, the study made the first attempt to introduce capital adequacy and firm size as control variables so as to avoid bias in the empirical results of the study.

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Declaration of conflict of interest

There exists no ethical issues bothering the study and sponsorship regarding funding and related issues of contradictions.

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