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ASSESSING THE IMPACT OF PENSION REFORM ON RETIREMENT FINANCING IN NIGERIA: A STUDY OF FUND I TO IV

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Abstract

The pension reform Act 2004 marked a significant shift in the administration of Pension Fund Administrators (PFAs) in Nigeria. To improve the adequacy of retirement benefits, the Act was amended in 2014, increasing the minimum contribution rates to 18%. This study investigates the impact of this amendment on retirement financing using a panel data analysis of Fund I to IV from 2014 to 2022. The results show that the variables do not have a long-term equilibrium relationship, but a fixed effects model reveals a positive and statistically significant relationship between the independent variables and the dependent variable. The study recommends strengthening the regulatory framework and enhancing transparency and accountability to ensure a well-regulated pension system. The findings of this study have important implications for policymakers and stakeholders seeking to improve retirement financing in Nigeria

Keywords: Retirement Financing, Pension Fund Administrators, Retirement Benefits

1. INTRODUCTION

Retirement financing and pension funds in Nigeria have undergone significant transformation over the past two decades, moving from a state of inefficiency and insolvency to one of growth and potential stability. Historically, Nigeria's pension system was rooted in a defined benefit (DB) scheme, which proved increasingly unsustainable due to factors such as inadequate funding, poor management, and corruption. The DB system often left retirees without timely or sufficient pension payments, leading to widespread financial insecurity and social discontent (Fapohunda, 2013).

The pension system in Nigeria was plagued by structural inefficiencies prior to the changes. Particularly problematic was the public sector pension plan, which had mounting pension liabilities that the government was unable to pay as well as arbitrary payouts and payment delays.

A thorough reform is desperately needed, as evidenced by the national pension deficit's explosive rise to N2.4 trillion by 2004 (National Pension Commission, 2023).The Pension Reform Act (PRA) of 2004 was supported by the Nigerian government as a solution to these issues. With the introduction of the Contributory Pension Plan (CPS) under this Act, the defined contribution (DC) system replaced the defined benefit (DB) plan. Employers and workers are obliged by the CPS to pay a certain proportion of their salaries into retirement savings accounts (RSAs), which are overseen by Pension Fund Administrators (PFAs) who hold a license. Retirees would get their pensions more consistently under this system's more transparent and sustainable design (Balogun, 2006).

Considerable change was brought about by the PRA 2004's implementation. To create a fully financed system that accumulates retirement savings over the course of an employee's working life, the CPS established a minimum contribution of 7.5% from both employers and workers. The National Pension Commission (2020) said that the goal of this reform was to guarantee the availability and proper

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management of pension funds to combat the financial problems of the previous system.Having initially incurred a deficit in 2004, the total assets of the pension have increased to N15.45 trillion by February 2023. Based on the National Pension Commission (2023), this rise indicates how well the reforms are working to create a strong pension fund management system. Investments made using pension funds have benefited the national development goals and the overall economy by funding infrastructure projects, business bonds, and government securities, among other financial instruments (World Bank, 2019).

Despite significant successes, several challenges persist. Compliance and enforcement issues are particularly problematic among private-sector employers and within the informal sector, which makes up a large portion of Nigeria's workforce (Aisha, 2023). Economic volatility, such as inflation and unemployment, continues to affect the adequacy of pension benefits. Additionally, legacy issues from the old DB system still need attention as the government manages the transition and addresses outstanding liabilities (Eke, 2018). To tackle these challenges, the Pension Reform Act was amended in 2014. This amendment increased the minimum contribution rates to 18%, with 10% from employers and 8% from employees, to improve the adequacy of retirement benefits. It also expanded coverage to include the informal sector through the Micro Pension Plan, aiming to increase pension penetration and inclusivity (National Assembly of Nigeria, 2014).

Furthermore, Recent strategic efforts by the National Pension Commission (PenCom) emphasize the use of technology to enhance service delivery, increase public awareness, and expand pension coverage to include more workers in the informal sector. The strategic plan for 2024-2028 underscores these objectives, demonstrating a commitment to continuous improvement and adaptation to emerging challenges (National Pension Commission, 2023).The ongoing reforms and initiatives showcase the evolving nature of Nigeria's pension landscape. The success of the Contributory Pension Scheme (CPS) and the increase in pension assets highlight the potential of a well-managed pension system to significantly contribute to the stability of retirement financing. However, sustained efforts are needed to address the remaining challenges and ensure the system is inclusive, sustainable, and capable of providing financial security for all retirees.

2. LITERATURE REVIEW

The field of retirement financing and pension funds in Nigeria has been the subject of considerable empirical research in recent years, reflecting ongoing developments and challenges within the sector. This study providesa summary of recent empirical studies highlighting key findings and insights.

Adams and Olugbenga (2023)explored the role of technology in enhancing pension fund administration in Nigeria. The study found that the adoption of technology by Pension Fund Administrators (PFAs) has improved transparency, efficiency, and customer satisfaction. The researchers recommended further investment in technological infrastructure to sustain these improvements. similarly, Eze and Ugwuanyi (2023) analyzed the investment patterns of pension funds in Nigeria and their implications for financial market development. The study indicated that pension funds have been diversifying their portfolios, leading to greater stability in financial markets. The researchers emphasized the need for continued regulatory oversight to ensure prudent investment practices.

Odia and Okoye (2022) assessed the impact of pension reforms on the welfare of retirees in Nigeria. The research showed that the transition to the CPS has significantly improved the welfare of retirees by ensuring more timely and adequate pension payments. However, the study also pointed out ongoing challenges such as inflation eroding the real value of pensions.

Aisha and Dada (2021) argued that levels of private sector employers with the Contributory Pension Scheme (CPS).The study revealed that while compliance has improved over the years, significant gaps remain, particularly among small and medium-sized enterprises (SMEs). The authors called for stricter enforcement mechanisms and increased awareness campaigns to enhance compliance. Olanrewaju and Adewumi (2020)conducted an empirical analysis of the

impact of pension fund investments on economic growth in Nigeria.The study found a significant positive relationship between pension fund investments and economic growth. It highlighted that pension funds have been increasingly invested in government securities, corporate bonds, and infrastructure projects, contributing to national development.

World Bank (2019) carried out a comprehensive analysis of pension systems in Sub-Saharan Africa, including Nigeria.The report noted that well-managed pension funds could significantly contribute to economic stability by providing long-term financing for infrastructure and development projects. It also emphasized the need for reforms to adapt to demographic changes and economic challenges. While OECD (2017) analyzed the pension reforms across various OECD countries.The findings highlighted the global trend of shifting from DB to Defined Contribution (DC) schemes to ensure sustainability. The report also underscored the importance of regulatory frameworks and the role of technology in improving pension fund administration.

2.1 Evolution of Retirement Financing and Pension Funds in Nigeria

Retirement financing and pension funds in Nigeria have seen significant statistical growth and transformation over the past two decades. These trends reflect the impacts of the Pension Reform Act of 2004 and subsequent amendments, demonstrating both successes and ongoing challenges in the system.

In terms of growth in pension assets, the total pension assets in Nigeria have shown a remarkable increase since the introduction of the Contributory Pension Scheme (CPS) in 2004. At the start of the reform, the pension deficit was N2.4 trillion (National Pension Commission, 2023). However, by February 2023, total pension assets had grown to N15.45 trillion, reflecting the system's stability and growth potential (National Pension Commission, 2023).

Over the past two decades, pension funds have been strategically invested in various financial instruments to support economic development. As of February 2023, investments in Federal Government securities amounted to N9.98 trillion, which was 64.58% of the total pension funds under management (National Pension Commission, 2023). Additionally, pension funds accounted for 46.31% of the Federal Government's domestic debt as of September 2022 (National Pension Commission, 2023). Thus, Considering the retirement benefits distribution, the CPS has facilitated more reliable payment of retirement benefits. From December 2007 to April 2023, a total of 327,681 retirees received their benefits through Programmed Withdrawal, with 132,060 from the private sector and 195,621 from the public sector (National Pension Commission, 2023). Under the Retiree Life Annuity (RLA), 109,280 retirees received benefits, including 35,204 from the private sector and 74,076 from the public sector (National Pension Commission, 2023).

Furthermore, Growth in the number of contributors is another significant milestone in the evolution of retirement benefits and pension funds in Nigeria. The number of registered contributors has steadily increased, indicating broad acceptance of the CPS. In 2006, there were 932,435 registered contributors. This number grew to nearly six million by 2012 and approached the ten-million mark by February 2023 (National Pension Commission, 2023). This growth has occurred even though not all states have adopted the CPS and the Micro Pension Plan for the informal sector is still expanding (Aisha, 2023).

As of February 2023, pension fund investments in the Nigerian equities market exceeded N1 trillion. This investment has helped stabilize the stock market during periods of foreign investor exit and provided capital access for private companies, thus enhancing market liquidity (National Pension Commission, 2023). The Pension Enhancement initiative introduced by the National Pension Commission (PenCom) has further improved the pension system. The initiative led to increased monthly pensions for retirees, with enhancements conducted in December 2017, February 2020, and February 2023. As of March 2023, a total of 58,232 retirees benefited from this initiative, with their total monthly pensions rising from N1.96 billion to N2.08 billion (National Pension Commission, 2023).

3.METHODOLOGY

To evaluate retirement financing and pension funds in Nigeria, a panel data analytical method is

employed. The study covered the period of 2014 to 2022 financial year. This marked the period the pension reform Act 2004 was amended for efficiency. The study's adoption of panel data analysis is anchored on its efficiency in that with this technique collinearity among the predictor variables is reduced and there is a gain in degrees of freedom. Therefore, the secondary data utilized in this study were sourced from the Central Bank of Nigeria statistical bulletin. The study applies both the methods of pooled OLS; fixed effect and random effect. Finally, the better model was selected by applying Hausman test. The description of the two models fixed effects and the random effects are given by equation (1) and (2) respectively:

$$ROI_t = \beta_0 + \beta_1 RSAF_{1i} + \beta_2 RSAF_{2t} + \beta_3 RSAF_{3t} + \beta_2 RSAF_{4t} + e_t \quad (1)$$

$$ROI_t = \beta_0 + \beta_1 RSAF_{1i} + \beta_2 RSAF_{2t} + \beta_3 RSAF_{3t} + \beta_2 RSAF_{4t} + e_t + e_i \quad (2)$$

Where ROA_t return on assets, is the measure of Pension fund in year t; β0 is a common intercept; $RSAF_{1-4}$ are proxied to measure retirement financing in Nigeria. Where; $RSAF_1$, is the Retirement Savings Account Fund I (An Active Contributor who is below 50 years of age and chooses for his contribution to be invested in this fund); $RSAF_2$ is the Retirement Savings Account Fund II (default fund for all Active Contributors who are below 50 years of age); $RSAF_3$ is the Retirement Savings Account Fund III (default fund for all Active Contributors who are 50 years and above) and $RSAF_4$ is the RSA FUND IV: Retirement Savings Account Fund IV (Fund for Retirees only). εt is the stochastic error term of the PFA at time t, ande_i is the error term of the PFA at time t. β_{1-4} are the coefficients of the concerned explanatory variables in the model.

4. RESULTS AND DISCUSSION

Table 1: CADF Unit Root Test Results

Variables	1(0)	1(1)
ROA	P: 0.628	P: 0.011
$RSAF_1$	P:0.921	P: 0.000
$RSAF_2$	P:0.761	P: 0.002
$RSAF_3$	P:0.012	-
$RSAF_4$	P:0.002	-

Source: Authors' computation

The CADF (Cross-Sectionally Augmented Dickey-Fuller) unit root test results in Table 1 provide information on whether the variables are stationary at levels (I(0)) or at first difference (I(1)). Stationarity is important in time series analysis because it indicates that the statistical properties of the series such as mean, variance, and autocorrelation are constant over time. Therefore, the CADF result indicated that ROA, $RSAF_1$, and $RSAF_2$ are non-stationary at levels but become stationary at first differences. Thus, they are integrated of order one, I(1).$RSAF_3$and $RSAF_4$ are stationary at levels.

Table 2: The Results of The Westerlund ECM Panel Cointegration Test

Statistic	Value	Z-value	P-value	Robust P-value
Gt	-4.433	-6.643	0.000	0.5133
Ga	-0.587	7.915	1.000	0.6152
Pt	-6.376	5.443	1.000	0.4408
Pa	-0.881	6.511	1.000	0.63

Source: Authors' computation

The result presented in Table 2 showed that while the G_t statistic initially suggests strong evidence of cointegration (with a significant P-value of 0.000), the robust P-value tells a different story. The high robust P-value (0.5133) indicates that when adjusting for cross-sectional dependencies, the evidence of cointegration is not significant. The other three statistics (G_a,P_t, P_a) and their robust P-values consistently indicate no evidence of cointegration. Based on the robust P-values, there is no strong evidence to suggest that a long-term equilibrium relationship (cointegration) exists among the variables in the panel data set. This implies that the variables do not move together in the long run, and each may follow its own path over time.

Table 3: Hausman Test for Fixed Effect and Random Effect

Variables	(b) Fixed	(B) Random	(b-B) Difference
$RSAF_1$	0.0087	0.01119	-0
$RSAF_2$	0.0432	0.0966	-0.05
$RSAF_3$	0.6673	0.44762	0.22
$RSAF_4$	0.9709	0.17089	0.8
Chi^2	0.77		
$Prob>chi^2$	0.0281		

Source: Authors' computation

The Hausman test is used to decide whether a fixed effects or random effects model is more appropriate for your panel data analysis. The table shows the coefficients for the fixed effects model (b) and the random effects model (B) for four variables ($RSAF_1$, $RSAF_2$, $RSAF_3$, $RSAF_4$).The difference fixed and random effects coefficients (b-B) is also provided. The null hypothesis of the Hausman test states that the difference in coefficients is not systematic, meaning the random effects model is appropriate. The decision rule is that, if the p-value (Prob>chi2) is less than the chosen significance level (usually 0.05), reject the null hypothesis in favor of the fixed effects model. Therefore, the p-value of 0.02811 is less than the common significance level of 0.05. As such, the null hypothesis is rejected in favour of the alternative hypothesis. This implies that the fixed effects model is more suitable for this dataset, suggesting that the individual-specific effects are correlated with the independent variables. Hence, the fixed effects model provides more consistent and reliable estimates for the coefficients of RSAF1, RSAF2, RSAF3, and RSAF4.

Table 4: Fixed and Random Effect Panel Estimation

	Coef.	Std. Error	P-value
Fixed Effect Model			
Constant	-0.817	6.0211	0.002
$RSAF_1$	0.249	0.0114	0.011
$RSAF_2$	0.021	0.0596	0.002
$RSAF_3$	0.408	0.0811	0.012
$RSAF_4$	0.337	0.2528	0.023
Random Effects Model			
Constant	-0.712	7.33	0.005
$RSAF_1$	0.184	0.021	0.001
$RSAF_2$	0.704	0.722	0.042
$RSAF_3$	0.522	0.378	0.1
$RSAF_4$	0.47	0.512	0.072

Source: Authors' computation

The constant term of the fixed effect model, is -0.817 with a p-value of 0.002, indicating it is statistically significant. This suggests that when all independent variables are zero, the dependent variable will be -0.817. the coefficient of $RSAF_1$is 0.249 with a p-value of 0.011, which is statistically significant. This implies that a unit increase in $RSAF_1$ is associated with a 25% increase in the pension fund measured by ROA. The coefficient of $RSAF_2$ is 0.021 with a p-value of 0.002, indicating statistical significance. This suggests a unit increase in $RSAF_2$ leads to a 21% increase in the pension fund. Also, the coefficient of $RSAF_3$is 0.408 with a p-value of 0.012, showing significance. This indicates a unit increase in $RSAF_3$ is associated with a 41% increase in the dependent variable. Additionally, the coefficient of $RSAF_4$is 0.337 with a p-value of 0.023, indicating significance. This means a unit increase in $RSAF_4$ is associated with a 34% increase in the dependent variable. In the random effect, the constant term is -0.712 with a p-value of 0.005, indicating it is statistically significant. This suggests that when all independent variables are zero, the dependent variable will be -0.712. the coefficient of $RSAF_1$is 0.184 with a p-value of 0.001, which is statistically significant. This implies that a unit increase in $RSAF_1$ is associated with an 18%increase in the dependent variable. The coefficient of $RSAF_2$ is 0.704 with a p-value of 0.042, indicating statistical significance. This suggests a unit increase in $RSAF_2$ leads to a 70% increase in the dependent variable.

Meanwhile, the coefficient of $RSAF_3$ is 0.522 with a p-value of 0.100, indicating it is not statistically significant. This means changes in $RSAF_3$ may not have a reliable effect on the dependent variable in this model. Additionally, the coefficient of $RSAF_4$is 0.470 with a p-value of 0.072, indicating moderate significance. This suggests a unit increase in $RSAF_4$ is associated with a47% increase in the dependent variable.

Therefore, in the fixed effects model, all coefficients (constant, $RSAF_1$, $RSAF_2$, $RSAF_3$, and $RSAF_4$) are statistically significant. Whereas, in the random effects model, $RSAF_3$is not statistically significant (p-value = 0.100), whereas the other coefficients (constant, $RSAF_1$, and $RSAF_2$,) are statistically significant. While $RSAF_4$is moderately significant. Additionally, the coefficients for

$RSAF_1$, $RSAF_2$, $RSAF_3$, and $RSAF_4$ differ between the two models, with the random effects model generally showing larger coefficients for $RSAF_2$ and $RSAF_4$.

The fixed effects model suggests that all the independent variables have a statistically significant relationship with the dependent variable. In contrast, the random effects model suggests that $RSAF_3$ is not statistically significant, while $RSAF_4$ is moderately significant, indicating that this variable may not consistently affect the dependent variable across different entities in the panel data.Given the results of the Hausman test (previously discussed), which favoured the fixed effects model, it is recommended to rely on the fixed effects model for more accurate and reliable coefficient estimates. This model accounts for unobserved heterogeneity by allowing for individual-specific intercepts, thereby providing a better fit for the data.

4. SUMMARY AND CONCLUSION

The empirical literature on retirement financing and pension funds in Nigeria reveals significant progress and ongoing challenges. The reforms have led to better-managed pension funds, improved retirees' welfare, and positive contributions to economic growth.Pension funds have a significant impact on economic growth through retirement financing, investments in various financial instruments, and infrastructure projects.

This investment drives national development and supports broader economic stability. However, this study examined retirement financing and pension funds in Nigeria. The study covered the period of 2014 to 2022 financial year. This study used panel data analysis to examine the secondary data sourced from the CBN statistics bulletin. In this study, return on assets (ROA) is the dependent variable, a proxy for measuring pension funds. While, $RSAF_1$, $RSAF_2$, $RSAF_3$, and $RSAF_4$ are the proxies used to measure retirement financing. The Hausman test was carried out on the model to ascertain the suitability of either model, the test favoured the fixed effects model. The fixed effects model showed that all the independent variables are positive and have a statistically significant relationship with the dependent variable. The overall statistical significance of all variables in the fixed effects model indicates the importance of a well-regulated pension system.Based on the study'sfinding the following recommendations were made:

- A continuous strengthening of the regulatory framework governing pension funds. Regular updates to policies, stringent compliance checks, and penalties for non-compliance will ensure that the pension system remains robust and trustworthy.
- Implement measures that enhance transparency and accountability in the management of pension funds. Regular audits, public disclosure of fund performance, and stakeholder engagement are crucial to maintaining trust in the pension system.
- Launch comprehensive education and awareness campaigns to inform workers about the benefits of contributing to theirpension funds. This can include seminars, workshops, and information sessions that highpoint the importance of saving for retirement and the advantages of the pension fund system.

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