Pension Reform and Economic Development in Nigeria

[1]**Esther Anya Uduma**, [2]**Michael Chidiebele Ekwe**, & [3]**Nwaorgu Innocent A.**
[1,2&3]*Department of Accounting,*
Michael Okpara University of Agriculture, Umudike

Abstract

Over the years, Nigeria government has undertaken pension reforms with the aim of engendering economic development in the nation. Thus, the study examined the nexus between pension reform and economic development of Nigeria from 2004 to 2022. Specifically, the effects of pension fund investments, private sector pension fund contributions, public sector pension fund contributions and number of retirement savings account on human development index, per capita income and misery index in Nigeria. Error correction mechanism (ECM) technique and paired t-test were employed in analyzing the data. Findings revealed that accumulated and current pension fund investments had negative and insignificant effects on per capita income and HDI while its effect on misery index was mixed as current pension fund investments had negative and significant effect and accumulated pension funds' investments exerted positive and insignificant effect on misery index in Nigeria, respectively. Private sector pension fund contributions positively and significantly influenced GDP per capita in Nigeria while it had negative and significant effect on misery index. Public sector fund contributions had positive and significant effect on HDI whereas it exhibited negative and significant effect on misery index. Furthermore, number of retirement savings account positively and insignificantly affected GDP per capita while it had positive and significant effect on HDI even as it exhibited negative and significant effect on misery index in Nigeria. Based on the outcomes of the study, it is recommended that pension fund administrators in Nigeria re-route their investment so as to enhance per capita income and HDI in Nigeria. This can be achieved through investment in corporate and government securities.

Keywords: *Pension reforms, Defined benefit scheme, Contributory pension scheme, Per capita income, Human development index*

Corresponding Author: **Esther Anya Uduma**

Background to the Study

It is believed that retirees deserve a special attention from the government. First, they are highly vulnerable and with limited capacity to provide and cater for themselves (Idowu & Olanike, 2009). Secondly, the preponderance of an ageing population around the world has pressurized many countries to seek for ways to enhance the standard of living of their old people (Ebere, 2019). One of the acknowledged ways of taking care of aged population is through regular payment of their pensions. Pension has been accepted as a practice of social security aimed at eliminating poverty and uncertainties in the lives of retirees (Farayibi, 2016). Because payment of pension has become an issue of concern to every society, Nigerian government has over the years instituted several pension programmes and reforms with a view to ensuring regular payment of retirement benefits to deserving retirees in the country.

By Military Decree of 1977, Local Government Pension Scheme was instituted; Armed Forces Pension Scheme was established in 1979 through Decree No. 103 of 1979. In 1993, following Decree No. 73, the Nigeria Social Insurance Trust Fund (NSITF) was established to replace the National Provident Fund (NPF). In addition, Police and Other Agencies Pension Scheme were established in 1993 by Decree No. 75 of 1993. For private sector employees, National Provident Fund (NPF) was established in 1961 to provide for their pensions (Nwanna & Ogbonna, 2019). In terms of core pension reforms, the government established a non-contributory public pension scheme through the Pension Scheme Decree No. 102 of 1979 (Balogun, 2006; Ahaoma *et.al*, 2022).

After abrogating the 1979 pension reforms, the government then came up with Pension Reform Act of 2004 aimed at accommodating both public and private sector employees in Nigeria (Baridoo & Leyira, 2019). The Pension Reform Act of 2004 was contributory in nature, requiring the employer to pay 7.5% and the employee 7.5%, making a total of 15% of their emoluments, to the pension fund. The beauty of the Pension Reform Act of 2004 lies in the establishment of private Retirement Savings Account (RSA) in the names of individual contributors (employees) where pension contributions are lodged. More so, the Act established and allowed the National Pension Commission (PENCOM) to appoint only licensed and approved professional fund managers to manage the pension funds. With all these features, the 2004 Pension Reform Act eliminated the challenges inherent in the 1979 Pension Reform Act and enthroned uniform rules and guidelines for the supervision of the pension sector in Nigeria (Nwanna & Ogbonna, 2019).

The Federal Government of Nigeria carried out yet another Pension Reforms Act in 2014. Just as the 2004 Pension Reform Act, the 2014 Pension Reform Act accommodated employees of private firms in the Contributory Pension Scheme (Ikwor & Nkwagu, 2020). Interestingly, the Act made provisions for punishment against embezzlement of pension funds as it stipulated that pension thieves shall refund three times of an embezzled amount. The 2014 Act further stipulated 18 percent as the minimum rate for pension contribution with the employees contributing 8 percent of their monthly emoluments while the employers contribute 10 percent (Tobiloba, 2014). It has been argued that the pension reform of 2004 and 2014 have enthroned a stable, predictable and sustainable pension scheme for retiring and retired persons

in Nigeria and as such enhanced the living standards and economic development in Nigeria (Nwanne, 2015). Thus, this study examined the nexus between pension reforms and economic development in Nigeria.

Statement of the Problem

Over the years, several efforts have been made by successive Nigerian governments towards pension reforms in Nigeria. Apart from the 2004 pension reform, there was the 2014 reform with far-reaching implications on both private and public sector retirees given their contributory approach. Despite these efforts, there is still a general distrust towards the pension scheme by the Nigerian populace. Only 8.1 percent of Nigeria's working population has enrolled in the contributory pension program (PriceWaterhouseCoopers, 2016), indicating that there is a significant level of skepticism on the part of the Nigeria worker. Furthermore, this 8.1 percent represents workers in the official sector, implying that no people in the informal sector have been covered thus far. However, this poor performance appears to contradict the submission of (Nwanne, 2015) who argued that the pension reforms of 2004 and 2014 have enthroned a stable, predictable and sustainable pension scheme for retiring and retired persons in Nigeria and as such enhanced the living standards and with enhanced standard of living, it was argued that economic development was enhanced. Hence a study is needed to clear this contradiction.

Research Objectives

The broad objective of the study was to examine the nexus between pension reforms and economic development of Nigeria. The specific objectives of the study are as follows: To
(i)   Determine the effect of pension fund investments on human development index, misery index and per capita income of Nigeria.
(ii)   Analyze the effect of private sector pension fund contributions on human development index, misery index and per capita income of Nigeria.
(iii)   Examine the effect of public sector pension fund contributions on human development index, misery index and per capita income of Nigeria.
(iv)   Assess the effect of number of retirement savings account on human development index, misery index and per capita income of Nigeria.

Research Questions

This study sought to provide answers to the under-listed questions:
(i)   What is the effect of pension fund investments on human development index, misery index and per capita income of Nigeria?
(ii)   How do the private sector pension fund contributions affect human development index, misery index and per capita income of Nigeria?
(iii)   To what extent do public sector pension fund contributions affect human development index, misery index and per capita income of Nigeria?
(iv)   What is the effect of number of retirement savings account on human development index, misery index and per capita income of Nigeria?

Hypotheses
Four hypotheses were tested in this study and they are stated in their null forms as follows:

(i) H_0: Pension fund investments do not have significant effect on human development index, misery index and per capita income of Nigeria.

(ii) H_0: There is no significant effect of private sector pension fund contributions on human development index, misery index and per capita income of Nigeria.

(iii) H_0: Public sector pension fund contributions effect on human development index, misery index and per capita income of Nigeria is not significant.

(iv) H_0: The effects of the number of retirement savings account on human development index, misery index and per capita income of Nigeria are not significant

Theoretical Framework
Deferred Wage Theory
Deferred wage theory was propounded by Shapiro and Stiglitz (1984) and stated that pension fund was a way of postponing compensations until the employee retires. The theory argued that pension fund is a means by which the employer defers some part of the benefit which the employee ought to have had during period of active service to a latter period (i.e. retirement) wherein the employer offers a pension payment in exchange for the services rendered in the course of employee's active service. Central to the argument of the deferred wage theory is that the employee receives future cash benefits that exceed the present value of deferred wages. In this way, the retiree would not be financially stranded in the future thereby enhancing his/her standard of living in particular and economic development of the country in general. Going by the position of deferred wage theorists, pension reforms in Nigeria have increased number of retirement savings account thereby enhancing private sector and public sector pension contributions. With increased private and public sector pension contributions, pension fund investment increases. These would lead to increase in per capita income and human development resulting in misery reduction in Nigeria. With reduced misery, economic development would be enhanced.

Empirical Review
Bert-Okonkwor, Okafor, & Ndubuisi (2024) examined the impact of contributory pension scheme on the growth of Nigerian economy. Ordinary least squares (OLS) simple regression was employed to analyze the data. The findings showed that contributory pension fund has a significant effect on GDP, capital market development and infrastructural development of Nigeria. Akinwumi, Temitope, Oladele, and Soladoye (2024) examined the impact of contributory pension scheme on the Nigerian economy from 2007Q1 to 2019Q4. Autoregressive distributed lag (ARDL) test was adopted for analysis. Results showed that federal government of Nigeria securities of the pension fund, domestic ordinary share of pension fund, local market money securities of the pension fund and real estate property of pension fund significantly influenced Nigeria's economic growth.

Zwingina (2023) investigated the effect of contributory pension scheme on economic growth in Nigeria, 2004-2020. Utilizing the Fully Modified Least Squares (FMOLS) test, the study showed that total pension funds, private sector pension funds, and public sector pension funds

all had positive and significant effects on the human development index. The inference result led to the conclusion that Nigeria's economic progress had been positively and significantly impacted by the contributory pension programme.

Obi, Okoye and Amahalu (2023) examined the effect of contributory schemes on economic growth of Nigeria, 2006 – 2022. Ordinary Least Square (OLS) regression analysis was carried out. The findings indicated that contributory pension scheme has a significant and positive effect on economic growth of Nigeria; contributory life insurance scheme has a significant and positive effect on economic growth of Nigeria; contributory national housing fund has a significant and positive effect on economic growth of Nigeria; contributory tertiary education trust fund has a significant and positive effect on economic growth of Nigeria.

Madukwe, Anyanwaokoro and Okeke (2023) investigated the effect of contributory pension fund investment in Federal Government Security on Nigerian economy between 2010Q1 and 2021Q1. Utilizing the Autoregressive Distributed Lag (ARDL) technique, it was found that contributory pension fund investment in federal government securities had no significant influence on Nigerian economy. It was concluded that the investment of contributory pension fund in federal government securities had no significant effect on Nigerian economy.

Etim, Umoren and Udo (2023) utilized 2004-2023 to evaluate the influence of contributory pension scheme on economic development in Nigeria. Fully modified ordinary least squares (FMOLS) regression technique was applied. Findings revealed that private sector pension funds and public sector pension funds, respectively, had positive significant influence on per capita income. On the other hand, total pension funds exerted an insignificant influence on per capita income. Abdullahi, Obadare, and Anifowose (2022) utilized the years 1995-2022 as the scope of their study to evaluate the effect of contributory pension scheme on economic growth in Nigeria. Data analysis was carried out using Autoregressive Distributed Lag (ARDL) test. Findings showed a long run relationship exist between market capitalization-GDP ratio and selected pension fund variables in Nigeria. Also, there is no long run relationship between all share index-GDP ratio and selected pension fund variables in Nigeria.

Udo, Bassey, John and Orok (2022) looked into the effect of contributory pension fund assets on the economic performance of Nigeria. The study employed the ordinary least square (OLS) and autoregressive distributive lag (ARDL) model for the analysis. Results revealed that the relationship between pension fund assets and real capital market capitalization in Nigeria was found to be positive and significant in the long run as well as in the short run. The study concluded that contributory pension fund asset has an effective and efficient capacity in boosting economic performance (capital market capitalization) in Nigeria.

Research Design
The study adopted *ex-post facto* research design given that all the variables used have already existing data which cannot be manipulated.

Model Specification

Ikwor and Nkwagu (2020) studied the relationship between pension reform and economic growth with the model:

RGDP = f (PCSP, RSAP, CPFAP, INFR, EXCR, INTR) ………………………. (1)

Where:
RGDP = Real gross domestic product (proxy for economic growth)
PCSP = Contributory pension scheme retiree fund account portfolio performance
RSAP = Retirement savings account portfolio performance
CPFAP = Contributory pension fund assets performance
INFR = Inflation rate
EXCR = Exchange rate
INTR = Interest rate

Adopting Ikwor and Nkwagu (2020) with modifications, the model for this study was specified as:

ECDV = f (PFA, PRFC, PUFC, NRSA) …………………………………… (2)

Disaggregating economic development (ECDV) into measures such as gross domestic product per capita income (PCI), human development index (HDI) and misery index (MI); the econometric equations for the study were specified as follows:

$$PCI_t = \beta_0 + \beta_1 PFA_t + \beta_2 PRFC_t + \beta_3 PUFC_t + \beta_4 NRSA_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (3)$$
$$MI_t = \alpha_0 + \alpha_1 PFA_t + \alpha_2 PRFC_t + \alpha_3 PUFC_t + \alpha_4 NRSA_t + \mu_t \ldots\ldots\ldots\ldots\ldots (4)$$
$$HDI = \pi_0 + \pi_1 PFA_t + \pi_2 PRFC_t + \pi_3 PRFC_t + \pi_4 NRSA_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (5)$$

Where:
ECDV = Economic development
PCI = Per capita income (measured by gross domestic product scaled by population)
HDI = Human development index (index of literacy rate, life expectancy and income)
MI = Misery index (measured by unemployment rate plus inflation rate)
PFA = Pension fund assets investment
PRFC = Private sector pension fund contribution
PUFC = Public sector pension fund contribution
NRSA = Number of retirement savings account
f = Functional relationship

Data Analysis

Unit root test

Table 1: Augmented Dickey-Fuller (ADF) unit root test results

Variable	ADF Values		0.05 Critical Values		Decision
	Levels	1st Difference	Levels	1st Difference	
DLOG(PCI)	-2.228944	-3.856873	-3.081002	-3.081002	I(1)
DLOG(HDI)	-1.691030	-3.239029	-3.040391	-3.052169	I(1)
D(MI)	-0.060178	-3.987284	-3.040391	-3.052169	I(1)
LOG(PFA)	-18.80844	-	-3.052169	-	I(0)
LOG(PRFC)	-3.447407	-	-3.040391	-	I(0)
LOG(PUFC)	-3.517812	-	-3.040391	-	I(0)
LOG(NRSA)	-6.938228	-	-3.052169	-	I(0)

D = Change notation

LOG = Logarithm

Source: Author's computation (2024) from E-views 10 software package

From the unit root test result above, pension fund assets, private pension fund contributions, public pension fund contributions and number of retirement savings account were stationary at levels since their ADF values at levels exceeded their critical values. On the other hand, per capita income, human development index and misery index were not stationary at level given that their ADF values were less than their critical values. Thus, there was need to difference them once. After first differencing, the ADF values of per capita income, human development index and misery index exceeded their ADF values. With these outcome, it is evident that the variables had mixed order of integration of order zero and one (i.e. I(0) and I(1)).

Cointegration Test

Table 2: ARDL Bounds test results

Table 2(a): ARDL Bounds test result for per capita income (PCI) model

Test Statistic	Value	Critical Value	I(0)	I(1)
F-Statistic	19.71083	10%	2.2	3.09
K		**5%**	**2.56**	**3.49***
		2.5%	2.88	3.87
		1%	3.29	4.37
Table 2(b): ARDL Bounds test result for human development index (HDI) model				
F-statistic	3.78304	10%	2.2	3.09
K		**5%**	**2.56**	**3.49***
		2.5%	2.88	3.87
		1%	3.29	4.37
Table 2(c): ARDL Bounds test result for misery index (MI) model				
F-statistic	5.572711	10%	2.2	3.09
K		**5%**	**2.56**	**3.49***
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Author's computation (2024) from E-views 10 software package

Having discovered that the variables were I(0) and I(1) processes, the study adopted autoregressive distributed lag (ARDL) Bounds test so as to determine whether there existed long run equilibrium relationship among the variables. In each of the models, it was shown that the F-statistics of the Bounds test exceeded the critical values of the lower and upper bounds at 5 percent levels of significance. This indicated that there were long run equilibrium relationships among the variables.

Error correction mechanism (ECM) test

Table 3(a): Parsimonious error correction mechanism (ECM) result for per capita income (PCI) model

Dependent Variable: D(LOGPCI)

Variable	Coefficient	Std. Error	t-statistic	Probability value
C	0.101548	0.050784	1.999606	0.0504**
D(LOGPCI (-1))	0.522694	0.507192	1.030564	0.3296
D(LOGPFA(-1))	-0.006596	0.017402	-0.379004	0.7135
D(LOGPRFC)	0.005875	0.002390	2.458159	0.0277*
D(LOGPUFC)	-0.009333	0.055240	-0.168952	0.8696
D(LOGPUFC(-1))	-0.037264	0.048342	-0.770843	0.4606
D(LOGNRSA)	0.171058	0.414130	0.413055	0.6892
ECM (-1)	-0.172470	0.089451	-1.928095	0.0516**

Adj. R-squared = 0.528922

F-statistic = 6.068077

Prob. F-statistic = 0.004523

DW = 1.740738

*indicates significance at 5% level; **indicates significance at 10% level

Critical (tabulated) value: $t_{0.05}$ = 1.729

Source: Author's computation (2024) from E-views 10 software package

In the per capita income model, lagged one-year pension fund assets had negative relationship with current per capita income in Nigeria. 1 percent increase in previous year's (lagged one year) pension fund assets led to 0.66 percent decrease in current per capita income in Nigeria. Probability value of lagged one year pension fund assets (0.7135) exceeded the test significant level (0.05). Thus, pension fund assets had no significant effect on per capita income. Interestingly, private sector pension fund contribution had positive relationship with per capita income in Nigeria. 1 percent increase in private sector pension fund contribution led to 0.59 percent increase in per capita income in Nigeria. Probability value of private sector pension fund contribution (0.0277) was less than the test significant level (0.05). Thus, private sector pension contribution had significant effect on per capita income.

Surprisingly, current public sector pension contribution had negative relationship with per capita income in Nigeria. 1 percent increase in current public sector pension fund contribution led to 0.93 percent decrease in per capita income in Nigeria. Probability value of current public sector pension fund contribution (0.8696) was greater than the test significant level (0.05). Thus, current public sector pension contribution had no significant effect on per capita income. However, number of retirement savings account had positive relationship with per

capita income in Nigeria. From the result, 1 percent increase in number of retirement savings account led to 17.1 percent increase in per capita income in Nigeria. Probability value of NRSA (0.6892) was greater than the test significant level (0.05). This indicated that number of retirement savings account had no significant effect on per capita income in Nigeria.

The error correction term (ECM) had the required negative sign and statistically significant at 10 percent level of significance. Its coefficient (-0.172470) indicated that the speed of adjustment of g per capita income from its short run disequilibrium to long run equilibrium position was 17 percent. This is a slow speed of adjustment. The coefficient of determination (adjusted R-squared) of 0.528922 showed that 53 percent changes in per capita income in Nigeria are attributed to changes in pension fund assets, private sector pension contribution, public sector pension fund contribution and number of retirement savings account. The probability F-statistic (0.004523) was less than the test significant level (0.05) and this indicated that the PCI model was appropriate, reliable and suitable for making sound policies. Based on Iyeli (2010) rule-of-thumb for Durbin-Watson statistic, (1.740738) lied within the acceptance region given that $2 \leq 1.740738 < 4$ and this indicated that there was no presence of autocorrelation in the regression result.

Table 3(b): Parsimonious error correction mechanism (ECM) result for human development index (HDI) model

Dependent Variable: D(HDI)

Variable	Coefficient	Std. Error	t-statistic	Probability value
C	0.243565	0.253922	0.959209	0.3625
D(HDI(-1))	0.154502	0.308873	0.500212	0.6289
D(LOGPFA(-1))	-0.069586	0.248432	-0.280100	0.7857
D(LOGPRFC)	3.525008	1.700862	2.072484	0.0321*
D(LOGPUFC)	0.306131	0.150347	2.036163	0.0376*
D(LOGPUFC(-1))	-0.307026	1.550292	-0.198044	0.8474
D(LOGNRSA(-1))	0.701925	0.313274	2.240610	0.0146*
ECM (-1)	-0.346083	0.170181	-2.033617	0.0397*

Adj. R-squared = 0.637333
F-statistic = 8.064230
Prob. F-statistic = 0.003265
DW = 1.981084

*indicates significance at 5% level; **indicates significance at 10% level
Critical (tabulated) value: $t_{0.05}$ = 1.729

Source: Author's computation (2024) from E-views 10 software package

Lagged one-year pension fund assets had negative relationship with human development index in Nigeria. 1 percent increase in previous year's (lagged one year) pension fund assets led to 0.07 percent decrease in human development index in Nigeria. Probability value of lagged one-year pension fund assets (0.7857) exceeded the test significant level (0.05). With this, pension fund assets had no significant effect on human development index in Nigeria. Conversely, private sector pension fund contribution had positive relationship with human development index in Nigeria as 1 percent increase in private sector pension fund contribution

led to 3.53 percent increase in human development index in Nigeria. Probability value of private sector pension fund contribution (0.0321) was less than the test significant level (0.05) indicating that private sector pension contribution had significant effect on human development index.

Public sector pension contribution had positive relationship with human development index in Nigeria as 1 percent increase in public sector pension fund contribution led to 0.31 percent increase in human development index in Nigeria. Probability value of public sector pension fund contribution (0.0376) was less than the test significant level (0.05) and this meant that current public sector pension contribution had a significant effect on human development index. However, lagged one-year public sector pension contribution had negative relationship with human development index in Nigeria. 1 percent increase in lagged one-year public sector pension fund contribution led to 0.31 percent decrease in human development index in Nigeria. Probability value of lagged one-year public sector pension fund contribution (0.8474) was greater than the test significant level (0.05) and this indicated that accumulated public sector pension contribution had no significant effect on human development index.

Number of retirement savings account had positive relationship with human development index in Nigeria. 1 percent increase in number of retirement savings account led to 0.70 percent increase in human development index in Nigeria. Probability value of NRSA (0.0146) was less than the test significant level (0.05) indicating that number of retirement savings account had significant effect on human development in Nigeria. Interestingly, the error correction term (ECM) had a negative sign and statistically significant at 5 percent level of significance. Its coefficient (-0.346083) indicated that the speed of adjustment of human development index from its short run disequilibrium to long run equilibrium position was 35 percent. In addition, the coefficient of determination (adjusted R-squared) of 0.637333 showed that 64 percent changes in human development index in Nigeria are attributed to changes in pension fund assets, private sector pension contribution, public sector pension fund contribution and number of retirement savings account. The probability F-statistic (0.003265) was less than the test significant level (0.05) and this highlighted the appropriateness and reliability of the HDI model for making sound policies. Durbin-Watson statistic (1.981084) lied within the acceptance region given that $2 \leq 1.981084 < 4$ and this indicated that there was no presence of autocorrelation in the regression result.

Table 3(c): Parsimonious error correction mechanism (ECM) result for misery index (MI) model

Dependent Variable: D(MI)

Variable	Coefficient	Std. Error	t-statistic	Probability value
C	4.171992	3.317887	1.257424	0.2489
D(MI(-1))	0.640380	0.328183	1.951291	0.0920**
D(LOGPFA)	-13.45035	6.041985	-2.226147	0.0613**
D(LOGPFA(-1))	8.383196	6.450702	1.299579	0.2349
D(LOGPRFC(-1))	-79.71969	27.11727	-2.939813	0.0217*
D(LOGPUFC)	-78.16228	26.91775	-2.903745	0.0229*
D(LOGPUFC(-1))	27.79410	20.70189	1.342588	0.2213
D(LOGNRSA)	-282.8483	127.7716	-2.213702	0.0625**
ECM (-1)	-0.166023	0.076663	-2.165621	0.0686**

Adj. R-squared = 0.667304

F-statistic = 6.032069

Prob. F-statistic = 0.041058

DW = 1.943787

*indicates significance at 5% level; **indicates significance at 10% level

Critical (tabulated) value: $t_{0.05}$ = 1.729

Critical (tabulated) value: $t_{0.10}$ = 2.086

Source: Author's computation (2024) from E-views 10 software package

Lagged pension fund assets had positive relationship with misery index in Nigeria. 1 percent increase in previous year's pension fund assets led to 8.38 percent increase in misery index in Nigeria. Probability value of lagged one-year pension fund assets (0.2349) exceeded the test significant level (0.05). Thus, pension fund assets had no significant effect on misery index in Nigeria. Lagged one-year private sector pension fund contribution had negative relationship with misery index in Nigeria given that 1 percent increase in lagged one-year private sector pension led to 79.7 percent decrease in misery index in Nigeria. Probability value of private sector pension fund contribution (0.0217) was less than the test significant level (0.05). Thus, private sector pension contribution had significant effect on misery index in Nigeria.

1 percent increase in current public sector pension fund contribution led to 78.2 percent decrease in misery index in Nigeria. Probability value of current public sector pension fund contribution (0.0229) was less than the test significant level (0.05). Thus, the researcher concluded that current public sector pension fund contribution had significant effect on misery index in Nigeria. Nevertheless, number of retirement savings account had negative relationship with misery index in Nigeria. From the result, 1 percent increase in number of retirement savings account led to 282.8 percent decrease in misery index in Nigeria. Probability value of NRSA (0.0625) was less than the test significant level (0.10) indicating that number of retirement savings account had significant effect on misery index in Nigeria.

The error correction term (ECM) had a negative sign and statistically significant at 10 percent level of significance. Its coefficient (-0.166023) indicated that the speed of adjustment of misery index from its short run disequilibrium to long run equilibrium position was 17 percent. The coefficient of determination (0.667304) showed that 67 percent changes in misery index in

Nigeria are attributed to changes in pension fund assets, private sector pension contribution, public sector pension fund contribution and number of retirement savings account. The probability F-statistic (0.041058) was less than the test significant level (0.05) and this indicated that the MI model was appropriate, reliable and suitable for making sound policies. Durbin-Watson statistic (1.943787) lied within the acceptance region given that $2 \leq 1.943787 < 4$ and this indicated that there was no presence of autocorrelation in the regression result.

Discussion of Findings
Effect of pension fund assets on per capita income, human development index and misery index in Nigeria
First, the study showed that pension fund assets had negative and insignificant effect on per capita income in Nigeria. The finding corroborates Nwanna and Ogbonna (2019) which found a negative effect of pension fund assets on the Nigerian economy. However, it contrasts Ndum and Okoye (2022) which argued in favour of positive effect of pension fund assets on Nigeria's economy. Perhaps, this finding might be attributed to lack of proper management of pension fund assets in the capital market, real estate and government bond. With such ineffective management, growing pension fund assets have failed to significantly improve the per capita income of Nigerians rather Nigerians per capita income has continued to remain small compared to that of other African countries. Nevertheless, pension fund assets had negative and insignificant effect on human development index in Nigeria. The finding corroborates Ogonda and Okiakpe (2022) which found that pension fund investments in money market instruments had a negative and insignificant influence on HDI. Perhaps, the negative and insignificant effect of pension fund assets (investment) on HDI in Nigeria might be attributed to misaligned investment by the pension fund administrators. Such misaligned investment results in poor returns on investment thereby leading to poor standard of living of the retirees who would have benefitted more if the investment had been better aligned. Finally, pension fund investment had negative and significant effect on misery index. Perhaps, this finding might be attributed to the fact that investment made by the pension fund administrators have created employment opportunities for Nigerians thereby reducing the number of unemployed Nigerians (since unemployment rate happens to be one of the two variables that make up the misery index).

Effect of private sector pension fund contributions on per capita income, human development index and misery index in Nigeria
Private sector pension fund contribution had positive and significant effect on per capita income in Nigeria. This finding is in line with Nanshuwan and Moses (2021) which found that private sector pension fund contribution had positively and significantly influenced Nigerian economy. However, it contradicts the works of Baridoo and Leyira (2019) which found a negative and insignificant effect of private sector pension fund contribution on per capita income of Nigeria. The positive and significant effect of private sector pension fund contribution on economic development in Nigeria might be attributed to full adoption of contributory pension in the private sector which has made it efficient such that upon retirement, private sector retirees enjoy good standard of living. In this way, the economy of Nigeria has continued to significantly improve. In addition, private sector pension

contribution has negative and significant effect on misery index in Nigeria. This outcome is still not isolated from the well-organized and coordinated private sector approach to contributory pension scheme in Nigeria. Based on this, increasing private sector contribution reduces the shocks associated with high unemployment rate and inflation rate (which are the composite indexes of misery index). Thus, it is not surprising that private sector retirees enjoy better standard of living upon retirement.

Effect of public sector pension fund contributions on per capita income, human development index and misery index in Nigeria

Interestingly, the study showed that public sector pension contributions had positive and insignificant effect on human development index in Nigeria. These findings corroborate Etim, Asuquo and Udo (2023) which found that public sector pension fund contributions positively affected human development index in Nigeria. This might be associated with the lackadaisical attitude of the public sector in terms of contributory pension scheme in Nigeria. Furthermore, current public pension contribution has negative and significant effect on misery index in Nigeria. This outcome might be attributed to the fact that the contributory pension scheme is mandatory in line with the Act that established it. Based on the foregoing, when all the relevant stakeholders have keyed into the scheme, it would negatively and significantly reduce misery index in Nigeria. However, the study showed that accumulated public pension contribution had positive and insignificant effect on misery index in Nigeria. Non-payment of salary in the public sector might be the reason for the positive and insignificant effect of public pension contribution on misery index in Nigeria.

Effect of number of retirement savings account on per capita income, human development index and misery index in Nigeria

Number of retirement savings account had positive and insignificant effect on per capita income in Nigeria in the long run. This finding corroborates Nwanna and Ogbonna (2019) which found that number of retirement savings account had positive and insignificant effect on the Nigerian economy. The insignificant effect of number of retirement savings account might be attributed to incomplete acceptance of contributory pension scheme (especially in the public sector) in Nigeria by the relevant stakeholders especially the contributors. This incomplete acceptance stems from lack of awareness on the part of those that should have participated in the scheme. This results in lesser number of retirement savings accountholders thereby making it not to significantly influence per capita income in Nigeria.

Number of retirement savings account had positive and significant effect on human development index in Nigeria. The positive effect of number of retirement savings account on human development index might be attributed to the continuous growth in the number of retirement savings account over the years as it grew from a mere 932,435 to 9,842,558 between 2005 and 2022, respectively. This represents a quantum positive percentage change of 1046% and might have been the reason why number of retirement savings account positively influenced human development index in Nigeria.

Number of retirement savings account had negative and significant effect on misery index in Nigeria. The negative effect of number of retirement savings account on misery index in Nigeria might be attributed to the efforts of the pension industry players to shore up the number of retirement savings account with the aim of investing the pension fund contributions and reducing misery given that the retirees would have something to fall back on upon retirement from active service. This is against the backdrop that the pensioners can use their contribution to start up a business or other economic activity that would enhance their standard of living.

Conclusion

Nigeria has gone through several reforms in the pension sector including the Pension Reform Act 2004, which establishes a contributory pension scheme for all employees in Nigeria. Thus, it becomes imperative to determine the relationship between pension reforms and economic development in Nigeria in Nigeria. Using per capita income, human development and misery index as measures of economic development threw up varying findings. For instance, it was revealed that accumulated pension fund investment negatively and insignificantly affected both per capita income and HDI in Nigeria whereas current pension fund investment significantly reduced the nation's misery index. Current private sector contribution significantly boosted per capita income and HDI in Nigeria. However, accumulated private sector contribution significantly reduced misery index in Nigeria. Current and accumulated public sector contribution insignificantly declined per capita income in Nigeria while accumulated public sector contribution significantly boosted HDI in Nigeria. Furthermore, accumulated public sector contribution significantly led to decline in misery in Nigeria. Finally, evidence showed that number of retirement savings account had boosted per capita income in Nigeria but insignificantly whereas it significantly increased HDI. In addition, number of retirement savings account had significantly reduced misery in Nigeria. In conclusion, the study argued that pension reforms in Nigeria had significantly boosted economic development in Nigeria using per capita income, HDI and misery index (MI) as measures of economic development.

Recommendations

The following recommendations are made in the study:

(i)   Pension fund administrators in Nigeria should re-route their investment so as to enhance on per capita income and HDI in Nigeria. This can be achieved through investment in corporate and government securities.

(ii)   Private sector institutions should fashion out ways of sustaining the timely payment of pensions so as to continue to ensure that standard of living of private sector retirees in particular and economic development in general remains enhanced.

(iii)   Public sector organizations should work towards enthroning prompt remittance of pension contributions to the Pension Fund Administrators. This can be achieved through removal of bureaucratic bottlenecks that have hindered full participation and implementation of the public sector in Contributory Pension Scheme.

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