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Pension Fund Assets and Reduction of Misery Index in Nigeria

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Abstract

The study investigated the impact of pension fund assets on misery reduction in Nigeria for the period, 2004-2022. Misery index, pension fund assets, private sector pension fund contributions, public sector pension fund contributions and number of retirement savings account were variables of interest. Ex-post facto research methodology was used given the availability of data on variables of interest. Thereafter, error correction mechanism (ECM) test was employed to analyze the data. Findings showed that pension fund assets had positive and significant impact on misery reduction in Nigeria. Similarly, private sector pension fund contributions, public sector pension fund contributions and number of retirement savings account had positive and significant impact on misery reduction in Nigeria. The study recommends that pension administrators in Nigeria should fashion out ways of investing in viable assets so as to achieve increased return on assets. With this, prompt payment of pensions to retirees would be ensured thereby reducing misery in Nigeria.

Keywords*: Pension fund assets, misery reduction, private sector pension fund contributions, public sector pension fund contributions*

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Background to the Study

The benefits of pension funds have been believed to be vast and impactful. Pension funds have been argued to play significant role in advancement of financial markets and reduction of misery and old-age poverty. Perhaps, this explains why most governments have turned to pension funds as a source of not just economic growth and development but reduction of misery. Pensions contribute to misery reduction by strengthening the livelihood of the elderly. There is evidence that misery and poverty is lower among the elderly in nations with robust pensions administration (Barrientos, 2003). Apart from the elderly, pensions also benefit immediate and extended family members of the elderly who are relieved of the financial burden of catering for the retirees. It has also been argued that children in pension-recipient households had greater school enrollment rates and better health than children in non-pension-recipient homes (Duflo, 2003).

Perhaps, it is in recognition of the benefits of pension to the elderly in particular and households in general that the government has embarked on several pension reforms in Nigeria. With these reforms, pension fund assets have received massive boost. In 2006, pension fund assets stood at N361,350 billion and increased to N815,190 billion in 2007 (PENCOM, 2014). Furthermore, pension funds' assets increased to a whopping N1,098,990 billion in 2008. The upward trajectory of pension funds' assets continued in the years that followed such that it reached N4,611,290 billion in 2014. As at 2016, pension funds' assets had climbed up to N5,961,580 billion (PENCOM, 2017). Pension fund assets continued to increase in the years that followed and reached N10,071,390 billion in 2019. From 2020 to 2022, pension funds' assets increased from N12,306,150 billion to N14,543,470 billion, respectively (PENCOM, 2022).

As if the impressive growth of pension fund assets makes no meaning, misery in Nigeria has continued to be high given the ever-increasing unemployment and inflation rate. In 2004, misery index in Nigeria stood at 23.4 percent and slightly increased to 23.5 percent in 2005 (CBN, 2022). In 2006, there was a decline in misery index as it went down to 20.8 percent and further declined to 19.3 percent in 2007. However, there was a massive leap in misery index as it went up to 30 percent in 2008. This upward trajectory was sustained in 2009 as the misery index rose to 31.7 percent. A decline was recorded in 2010 as the misery index dropped to 16.89 percent. In 2011, Nigeria's misery index further dropped to 16.26 percent (CBN, 2022). Yet again, misery index grew to 22.57 percent in 2012. The upward and downward trend in misery index continued in the years that followed until Nigeria's misery index stood at 56.07 percent in 2022 (CBN, 2022). Placing the misery experienced by Nigerians side by side with the growth of pension fund assets in Nigeria, it becomes imperative to determine the impact of pension fund assets on misery reduction in Nigeria. This is what the study aimed to achieve.

Statement of the problem

Misery in Nigeria has continued to remain within double digit threshold as unemployment and inflation rates consistently grew over the years. Several efforts, including pension reforms and monetary policy readjustments, have been made by the government to find a last solution towards reducing the ugly trend. Pension reforms, especially contributory pension reforms of

2004 and 2014 were aimed at ensuring that all bottlenecks hindering the payment of retirees' pensions were eliminated (Nwanna & Ogbonna, 2019). With this, it is expected that as pension investment increases, pensioners' benefits increase and misery is reduced. However, even with the growing pension assets (pension investment), misery in Nigeria has continued to increase. Based on this paradox, it becomes imperative to determine the impact of pension fund assets on misery reduction in Nigeria.

Objectives of the study

The major objective of the study was to determine the impact of pension fund assets on misery reduction in Nigeria. In specific terms, the study aims to achieve the following:

(i) Examine the impact of pension fund assets on misery index in Nigeria.
(ii) Determine the impact of private pension fund contributions on misery index in Nigeria.
(iii) Explore the impact of public pension fund contributions on misery index in Nigeria.
(iv) Assess the impact of number of retirement savings account on misery index in Nigeria.

Research questions

Fundamentally, the study sought to provide answers to the following questions:

(i) To what extent do pension fund assets impact misery index in Nigeria?
(ii) What is the impact of private pension fund contributions on misery index in Nigeria?
(iii) To what degree do public pension fund contributions impact misery index in Nigeria?
(iv) What is the impact of number of retirement savings account on misery index in Nigeria?

Hypotheses

Three hypotheses were tested in the study as follows:

(i) H_0: Pension fund assets do not significantly impact misery index in Nigeria.
(ii) H_0: Private pension fund contributions have no significant impact on misery index in Nigeria.
(iii) H_0: Public pension fund contributions have no significant impact on misery index in Nigeria.
(iv) H_0: Number of retirement savings account does not have significant impact on misery index in Nigeria.

Conceptual Review

Misery Index

Misery index measures the state of discomfort experienced in nations as it has to do with unemployment and inflation rates. Thus, it is captured by the un-weighted sum of the rates of inflation and unemployment. The combined value of unemployment and inflation is a helpful measure of the state of the economy as a whole because both are viewed as harmful to an individual's financial security. First, general increase in the cost of goods and services, known as inflation, has a significant effect on a person's life expectancy. People's well-being is directly correlated with the decline in the money's purchasing power (Wang, Shah, Abbas & Ulla, 2019). Second, high unemployment rate indicates low productivity and could likely lead to starvation.

A higher score in the misery index reflects the extent to which an economy is miserable. The misery index is also associated with a broad measure of the quality of life and the macroeconomic performance of an economy. Given that the misery index threshold of a healthy economy is in the range of 6 to 7, the Nigerian economy has continued to perform miserably, with an average misery index of 30 (1970 to 2016) (Ezekwesili, Adenikinju, Onyeanakwe & Longe, 2019). Between 1984 and 1995, the Nigerian economy featured an average misery index of 53. In 1995, the misery index was an incredible 74. In 2016, the misery index was as high as 36.8. In 2020, the misery index shot up to 49.05% and reaching 59.04% in 2022 (Okojie & Olatunji, 2023).

Pension Fund Assets

Assets purchased with contributions to a pension plan with the goal of supporting pension plan benefits have been recognized as pension fund assets. Accordingly, a pension fund asset is often managed with the purpose of ensuring that eligible retirees receive the benefits due to them upon retirement (Abubakar, 2014). FGN and state government securities, ordinary shares, corporate debt instruments, local money market securities, supranational bonds, mutual funds, infrastructure, and private equity funds were among the asset classes in which the funds were invested (PENCOM, 2020).

Private equity, real estate, securities, and infrastructure are common investments for pension funds. Typically, private equity investment is an asset class representing monies financed in the equity of private-owned companies with the aim of eventually selling such investment for high gains (profits). Returns from the private equity investment are used to fund the pension plan benefits of the retirees upon retirement. Based on the foregoing, it is argued that pension fund assets must be well managed in order to ensure that eligible retirees received their benefits as well as when due (Adekoya, 2019).

Theoretical Framework

This study anchored on Keynesian/neoclassical theory. This theory argues that macroeconomic factors, especially through role of government in providing economic stabilization, were needed in ensuring economic development. One of the ways in which government could provide economic stabilization was through prompt pension payments. Expectedly, if pensions are promptly paid, misery is reduced and standard of living is enhanced. On the other hand, if government fails to promptly and effectively pay pensions, misery increases and standard of living is adversely affected. Central to the argument of the Keynesian/neoclassical theorists is that government plays vital role in ensuring stabilization of the economy and economic development. Of course, at the core of achieving economic stabilization and economic development is the issue of enhanced standard of living. And there cannot be enhanced standard of living in an economy frost with unemployment and high inflation rate (both leading to misery). This theory is relevant to the study because it brings to the fore the role of government in misery reduction which it could achieve through pension reforms. With such reforms, number of retirement savings account, pension fund assets, private sector pension fund contributions, and public sector pension fund contributions increase. These are expected to lead to reduction in misery in Nigeria.

Empirical Literature

There is dearth of empirical works on the relationship between pension fund contributions and misery reduction. However, vast array of literature laid emphasis on the nexus between pension and other components of economic development. For instance, Alehile, Yakubu and Joseph (2023) examined the impact of contributory pension scheme on per capita income in Nigeria from 2004 to 2020. Autoregressive Distributed Lag (ARDL) technique was utilized for analysis. Findings showed that pension sector scheme measured by total retirement saving account with Pension Fund Administrators (PFA) and contributory pension scheme total fund have direct impact both in the short-run and long-run but the direct impact in the long-run is not statistically significant as that of the short-run.

Yakubu, Muritala, Abubakar, Bakare, Yusuf and Afolabi (2023) investigated the effect of pension funds on capital market development in Nigeria from 1995 and 2022. Autoregressive distributed lag (ARDL) technology was used for analysis. Findings showed that there is a long run relationship between market capitalization-GDP ratio and selected pension fund variables in Nigeria. However, there is no long run relationship between all share index-GDP ratio and selected pension fund variables in Nigeria. Etim, Asuquo, and Udo (2023) assessed the impact of Nigeria's contributory pension scheme on the nation's human development index. Fully Modified Least Squares (FMOLS) technique was utilized. The study showed positive and significant effects of pension funds in the public, private, and combined sectors on Nigeria's human development index. The analysis concluded that Nigeria's economic development had benefited greatly from the contributory pension scheme.

Nwala, Aza, Onuorah and Vincent (2024) looked into the effect of pension fund asset and savings on pension fund performance in Nigeria for the period 2013-2022. Ordinary Least Squares (OLS) regression was employed and findings show that pension fund assets have a negative significant impact on benefits paid in Nigeria. In contrast, pension fund savings is statistically significant in explaining the variation in benefits paid in Nigeria. Oteme and Onuorah (2024) assessed the effect of contributory pension scheme on human capital development in Nigeria from 2005 to 2022. Ordinary least square multiple regression was employed for analysis. Results revealed that public sector pension fund, private sector pension fund, pension fund investment and total pension fund had positive and significant impact on HDI, while Retirement Savings Account had negative and insignificant effects on human development index in Nigeria.

Ariyo, Ezeugwu, Okparaka and Agbo (2024) utilized the years 2007-2021 as the scope of their study to evaluate the relationship between contributory pension scheme and workers' investment in Nigeria. The study employed Engle Granger Causality Test as estimation technique with the result revealing a causal relationship between contributory pension scheme and workers investment in Nigeria and unidirectional relationship from private sector contribution to workers investment. In addition, there was unidirectional relationship from public sector contribution to workers investment.

Methodology

The study adopted *ex-post facto* research design whose beauty stems from its use of already existing data devoid of manipulation by the researcher. In addition, data for the study were collected from National Pension Commission (PENCOM) reports and Central Bank of Nigeria (CBN) Statistical Bulletin. Studying the impact of contributory pension scheme on per capita income in Nigeria from 2004 to 2020, Alehile *et al* (2023), adopted the model specified as:

In accordance with Alehile et al (2023) with modifications and bearing in mind that the study examined pension fund contributions and misery reduction in Nigeria, the model for this study is specified as:

MSI = f (PFA, PRFC, PUFC, NRSA) .... (2)

Where:
MSI = Misery index (proxy for misery reduction)
PFA = Pension fund assets in N' Billions
PRFC = Private sector pension fund contribution in N' Billions
PUFC = Public sector pension fund contributions in N' Billions
NRSA = Number of retirement savings account
Specifying equation (2) in econometric form, the econometric equation for the study is specified as:
$MSI = \alpha_0 + \alpha_1 PFA + \alpha_2 PRFC + \alpha_3 PUFC + \alpha_4 NRSA + €$ .... (3)
Where:
α_0 = Constant term
$\alpha_1 - \alpha_4$ = Coefficient parameters of the explanatory variables
€ = Stochastic error term

Regression Results

Unit root Test

Table 1: Augmented Dickey-Fuller unit root test result

Variable	ADF Values		0.05 Critical Values		Decision
	Levels	1st Difference	Levels	1st Difference	
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: Researcher's computation (2024) from e-views 10 software package

From table 1 above, it could be seen that pension fund assets (PFA), private sector fund contributions (PRFC), public sector fund contributions (PUFC) and number of retirement savings account (NRSA) were stationary at level given that their individual ADF values (in absolute terms) were greater than their critical values at 5 percent, respectively. However, misery index was not stationary at level as its ADF value was less than its critical value at 5 percent level of significance. But after first differencing, misery index (MSI) became stationary as its ADF value exceeded its critical value at 5 percent level of significance. Based on this outcome, the variables were said to be integrated of order zero and order 1(i.e. I(0)) and I(1) resulting in mixed order of integration.

Cointegration Test

Having established that there was existence of mixed order of integration among the variables in the model, the study carried out cointegration test using Autoregressive Distributed Lag (ARDL) Bound test.

Table 2: ARDL Bounds test result

Test Statistic	Value	Critical Value	I(0)	I(1)
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: Researcher's computation (2024) from e-views 10 software package

Table 2 revealed the cointegration test result for the misery index (MI) model of the study. In table 2, the ARDL bounds cointegration test result showed that the F-statistic value (5.572711) exceeded the critical value for the upper bound (3.49) at five percent level. With this result, the null hypothesis that there was no cointegration was rejected and it was concluded that there was long run relationship among the variables in the misery index (MI) model.

Error correction mechanism (ECM) test

Table 3: Parsimonious error correction mechanism (ECM) test result

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				
Prob. F-statistic = 0.041058				
DW = 1.943787				

Source: Researcher's computation (2024) from e-views 10 software package

Current pension fund assets had negative relationship with misery index in Nigeria. 1 percent increase in pension fund assets led to 13.5 percent reduction in misery index in Nigeria. Probability value of current pension fund assets (0.0613) was less than the test significant level (0.10). Thus, the researcher concluded that pension fund assets had significant effect on misery index of Nigeria. Lagged one year's fund contribution had negative relationship with misery index in Nigeria. From the result, 1 percent increase in lagged one year's 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, the researcher concluded that private sector pension contribution had significant effect on misery index in Nigeria.

Current public sector pension contribution had positive relationship with 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.

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). This indicated 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. This is a slow speed of adjustment and suggests that any distortions in misery index in Nigeria in one year can be corrected at the speed of 17 percent by the instrumentalities of pension fund assets, private sector pension contribution, public sector pension fund contribution and number of retirement savings account.

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. Probability F-statistic (0.041058) was less than the test significant level (0.05) and this indicated that the 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

The study showed that pension fund assets had negative and significant effect on misery index. This indicated that an increase in pension fund assets reduce misery index in Nigeria. This finding corroborates Nwala *et al* (2024) which argued that pension fund assets increased benefits paid. As benefits paid increases, misery is reduced. 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). With this, the misery index in Nigeria would be reduced.

Private sector pension contribution has negative and significant effect on misery index in Nigeria. This finding is in tandem with Oteme and Onuorah (2024) which found that private sector pension fund contributions positively and significantly influenced human development. Given that human development cannot be achieved in the presence of high unemployment and inflation rates, this explains why the positive and significant nexus between private pension fund contributions is likened to the negative and significant relationship between private sector pension fund contributions and misery index. 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). In this way, misery of retirees and their dependants is reduced.

Current public pension contribution had negative and significant effect on misery index in Nigeria. This finding is in conformity with Etim *et al* (2023) which argued that public pension fund contribution significantly increased economic development. A nation with high economic development is expected to be devoid of misery. Perhaps, 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. Number of retirement savings account had negative and significant effect on misery index in Nigeria. This finding agrees with Oteme and Onuorah (2023) which found that number of retirement savings account undermined economic development (which has misery index as one of its measures) 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.

Conclusion

Misery has continued to bedevil many Nigerians as unemployment and inflation rates soar. The government has adopted several policies and programmes to reduce the misery. Typically, reforms have been carried out in the pension sector. With the 2004 and 2014 pension reforms, government aimed to strengthen pension contributions and investment so as to ensure that well-being of retirees is enhanced. Having undertaken these reforms and achieving increased pension assets, this study examined how pension assets/investment has reduced misery in Nigeria. Evidence in this study suggested that pension assets/investment had reduced misery but its effect on misery reduction is insignificant. The underlying implication of this finding is that government's efforts in the pension sector has reduced misery but more needed to be done for misery to be significantly reduced in Nigeria.

Recommendations

Recommendations made include the following:

(i) Pension administrators in Nigeria should fashion out ways of investing in viable assets so as to achieve increased return on assets. With this, prompt payment of pensions to retirees would be ensured thereby reducing misery in Nigeria.

(ii) Well-organized and coordinated private sector approach to contributory pension scheme in Nigeria should be encouraged through sound policies. This would ensure that misery in Nigeria is further reduced.

(iii) All the relevant stakeholders in the pension sector should be mandated to key into the contributory pension scheme so as to ensure prompt payment of pensioners in the public sector. This would lead to reduction in misery of Nigerians in the public sector.

(iv) Pension industry players should shore up the number of retirement savings account with the aim of investing the pension fund contributions and pension fund assets thereby reducing misery.

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