African Journal of Social and Behavioural Sciences (AJSBS)
Volume 12, Number 2 (2022) ISSN: 2141-209X

PENSION REFORM ACTS AND PERFORMANCE OF INSURANCE INDUSTRY IN NIGERIA, 2004-2020

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ABSTRACT: This research work investigated the effect of pension reform acts on the performance of the insurance industry in Nigeria from 2004-2020. The study had four specific objectives: to analyze the effect of pension fund contributions from the public sector, pensions fund from the private sector, economic growth, inflation rate on insurance industry's gross premium income which was used as a measure of performance of the insurance industry. The sample size comprised all the 47 insurance companies registered with the National Insurance Commission (NAICOM). The data were analyzed using the Autoregressive Distributed Lag (ARDL) model and the findings revealed that public sector pension contribution under the pension reform act decreased gross premium income of the insurance industry both in the short and long run. Private sector pension contribution had positive effect on gross premium income of the insurance industry but was only significant in the long run. While the prevailing economic condition (real GDP) increased insurance gross premium, inflation rate exerted negative effect. The study concluded that the private sector pension contributions increased insurance premium income more than the public sector and that pension's portfolio was being affected by inflation rate. It was recommended that more insurance companies be encouraged to participate in pension matters as PFAs, public sector pension's contribution should be promptly remitted and that pension funds should be securitized on long term non-volatile securities.

Keywords: Insurance Industry, Pension Reform, Private Sector Pension, Public Sector Pension, Auto Regressive Distributed Lag, Nigeria

INTRODUCTION

Pensions generally represent the sum of money paid regularly to a person who no longer work because of old age, disability, retirement or to his widowed or dependent children by the state, former employers or from provident fund to which he and his employer both contributed (Edogbanya, 2013). On the other hand, gratuity is a lump sum of money payable to a retiring officer who has served for a minimum period of term year, usually ten years (Adam, 2005 in Ojiya, Ajie and Isiwu, 2017). Ijeoma and Nwufu (2015) asserted that pension is a vital social security scheme for employees in both public and private sectors of the economy; and that it can contribute to increased investment portfolio for insurance companies since it involves series of instalment payments that matures over a long period of time. This makes pension funds administration similar to insurance policies with the latter only maturing at the expiration of 35 years of service, or 65 years of age, whichever comes first.

The operation of pension scheme in Nigeria has a history traceable to the Colonial Administration following the 1951 Pension Ordinance with retroactive effect from 1946; the Ordinance provided public servants with both pension and gratuity (Binuomoyo, 2009). Nnanta, Okoh and Ugwu (2011) observed that the first pension scheme in Nigeria was set up for the employees of the Nigerian Breweries Limited in 1954, followed by United African Company in 1957. Nwanne (2015) added that the first Social Security Scheme in Nigeria came into being in 1961 by the Act of Parliament, which established the National Provident Fund (NPF); the NPF scheme was set up to address pension matters of private organizations in Nigeria.

From independence in 1960 till 1st July 2004, Nigeria practiced a traditional social benefit scheme, in which case the retirement benefits of retired workers were basically paid from the current year‘s budgetary provisions using a pay-as-you-go (PAYG) approach; which made the financial involvement so burdensome on the government, in the face of the basic current year‘s financial challenges. The flaws associated with the conventional pension system were various. On the one hand, Nweke (2014) observed that the system inadvertently fuelled fiscal leakages as it created room for massive corruption, fraud and misappropriations of public funds by corrupt elements in the public service; on the other hand, prompt payment of retirement benefits was like a tall order to the government; pensioners were subjected to unimaginable hardship (Abu & Musari in Nweke, 2014).

The Federal Government of Nigeria took a ground-breaking step in 2004 to ameliorate the hardship experienced by retirees by enacting the Pension Reform Act, 2004. With the emergence of the 2004 pension reform act, the issue of operating a crude unfunded pension scheme system was brought to a compulsory demise; a defined funded Contribution Pension Scheme was enthroned. The act also laid a more solid foundation for effective and hitch-free administration of pensions and indeed retirement benefits of retired workers in Nigeria through the establishments of regulatory and administrative bodies such as the National Pension Commission (PENCOM), Pension Fund Administrators (PFAs) and Pension Fund Custodians (PFCs).

In lieu of the numerous gains associated with the 2004 Pension Reform Act, another major pension reform was carried out in Nigeria in 2014. The intents of the reform were capsulated in the Pension Reform Act of 2014. Some of the key highlights of the 2014 reform as reported by the KPMG (2014) include (but not limited to): the minimum threshold for private sector employers to participate in the Scheme was increased to 15 (as against the previously 5) employees; increase in the rate of contribution for employees and employers to a minimum of 8% and 10%, respectively, although, employers who choose to bear the full pension cost of their employees, are required to contribute a minimum of 20% to the Scheme; all interests, dividends, profits, investments and other income attributable to pension funds and assets now became tax exempt; thus, the issue of whether withholding tax deductions at source should apply to the investment of the underlying funds and assets, which was not clearly spelt-out in the previous reform was now finally addressed.

The pension reform Acts of 2004 and 2014 led to a unified data on pension funds contribution in Nigeria which hitherto was sketchy and hugely unknown. The pensions fund grew to about N15.6 billion in the first year of the enactment in 2004. This figure grew to N60.41 billion when the private sectors were incorporated in the pensions Act. As at end of 2020, the pension funds was put above N700 billion with the public sector contributing N331

billion while the private sector contributed N369 billion (PENCOM Annual Report, 2020). The Insurance industry, being custodians of long term funds became actively engaged in pension matters as Pension Fund Administrators. The 2004 and 2014 pension reform Acts presented an avenue for the insurance industry to leverage on the huge potentials of the pension funds to grow her premium base beyond what it used to be. As a result, the insurance companies set up subsidiaries known as "pension fund administrators". Thus, this study intends to find out the extent to which the reformed pension scheme has affected the performance of the insurance industry in Nigeria with particular emphasis on insurance companies' gross premium income generated.

Statement of the Problem

As earlier stated, the pension commission (PENCOM, 2020) reported that pension fund grew above N700.69 billion in 2020 representing more than 100% growth rate from the year 2004 when it was first enacted. Similarly, insurance premium base grew from N50.1 billion in 2004 to about N920 billion at the end of 2019 reaching N1.1trn in 2020 (CBN, 2020). The figures above show that pension fund grew by more than quadruple of a thousand percentage while premium income grew by half of that. With the analysis made so far, can we really say that insurance premium income grew as a result of the pension reform Acts of 2004 and 2014? Up to the time of this study, we do not know exactly how the reformed pension funds have affected the premium base of the insurance industry. This is the major problem which this study intends to provide answers to.

Furthermore, available literature could point to no prior recent study that directly linked, in specific terms, pension funds and performance of insurance industry in terms of premium generation in Nigeria. Previous studies such as Amaefule (2020), Nwite and Ehiogu (2014), Nwanne (2015); Farayibi (2020); Ojiya, Ajie and Isiwu (2017), to mention but a few, all studied the contributory pension scheme and its effect on Nigeria's economic development with more of theoretical review than empirical analysis. None of the extant literatures reviewed in the course of this study showed any indication of a specific focus on the insurance industry.

Objectives of the Study

The broad objective of this study is to examine the effect of the Pension Reform Acts on the performance of the insurance industry in Nigeria from 2004 to 2020. The specific objectives are to:

1. analyze the effect of pension fund contribution from the public sector on insurance gross premium income;
2. determine the effect of pension fund contribution from the private sector on insurance gross premium income;
3. investigate the intervening effect of real gross domestic product on the reformed pension – gross premium income nexus; and
4. as certain the intervening effect of inflation rate on the reformed pension – gross premium income nexus in Nigeria.

Consequently, four hypotheses were formulated for the study thus:

$H0_1$: Pension fund contribution from the public sector has no significant effect on insurance gross premium income in Nigeria.

$H0_2$: Pension fund contribution from the private sector has no significant effect on insurance gross premium income in Nigeria.

$H0_3$: There is no significant effect of real gross domestic product on the reformed pensions – insurance gross premium income nexus in Nigeria.

$H0_4$: There is no significant effect of inflation rate on the reformed pension – insurance gross premium income nexus in Nigeria.

This research is focused mainly on the pension reform Acts of 2004 and 2014 with the time scope ranging from 2004 through 2020. The geographical scope is Nigeria while the variable scope is pension fund contribution from the public and private sectors, real GDP and inflation rate since 2004 till 2020. The performance of the insurance industry is proxied by gross premium income generated.

LITERATURE REVIEW

Conceptual Issues: Pension and Pension Fund

Pension consists of lump sum payment paid to an employee upon his disengagement from active service (Adebayo and Dada, 2012). It generally represents the sum of money paid regularly to a person who no longer work because of old age, disability, retirement or to his widowed or dependent children by the state, former employers or from provident fund to which he and his employer both contributed (Edogbanya, 2013). Obasa (2019) asserts that pensions may represent deferred salary (on a socialized or individual basis); the means to secure long and better service from essential employees, a necessary investment in industrial restructuring, a source of venture capital, as well as protection against destitution in old age.

Pension fund, according to Amaefule (2020) represents the total sum of money standing to the credit of an employee from the various contributions made by the employee and his/her employer into the retirement savings account operated by a pension fund manager (administrator), appointed by the employee. It also includes any accruable income from the investment made by the pension fund administrator on behalf of the employee.

Pension Reform

Pension reform means an attempt to improve or rectify a pension system that has proven unsustainable or that faces future threat of insolvency (Odo, Ani & Agbo, 2021). Odo *et al,* observed that already, in Western countries, a widespread fear has been expressed that an increasing proportion of the elderly, combined with a decline in the workforce, will deteriorate economic development, leading to a lower Gross National Product (GNP) and per Capita GNP; it is feared that the development could lower net income for workers and the pensioners and ultimately undermine sustainability of the old age pension systems (Kune, 2011). Under these circumstances, pension funding based on pay-as-you-go system becomes burdensome and unsustainable. The factors highlighted above laid the foundation for the global pension crisis and the resulting popular demand for reform of the sector (World Bank,

1994). In fact, Alles (2010) observed that in many of the OECD countries with mandated retirement savings systems, pension funding is switching from defined benefit (DB) systems to defined contribution (DC) systems.

In Nigeria, before the Pension Reform Act of 2004, the public pension system had already become unsustainable, with a huge deficit pension burden of N2 trillion (Balogun, 2006). Two variants pension reforms were further identified namely, parametric pension reform and systemic/structural pension reform. 1) Parametric Pension Reform. This envisages changes or adjustments to the parameters of an existing pension system in order to make it functional. The parameters of interest include, age of retirement, contribution rate, vesting right, etc. Robalino (2005) as reported by Balogun (2006), claimed that majority of pension reforms entailed changes to the parameters of Defined Benefit pension systems.

It was the unsustainability of the pay-as-you-go pension system that made the Federal government to carry out total reform and overhaul of the pensions system in Nigeria. This kind of pension reform is exemplified in the contributory pension system which the Pension Reform Act of 2004 (as amended by 2014 Act), represent. The contributory pension scheme therefore is a pension plan in which both worker and employer jointly contribute regular, defined amount or stated percentage of worker's salary, perhaps on monthly basis and to be kept in a fund that will be invested (Odo *et al,* 2021). Both the aggregate contributions and the investment profits thereof target providing income streams for the worker at retirement.

The operationalities of the contributed pension funds falls within the shoulders of three key stakeholders as provided by the 2004 Pension Reform Act; namely, the National Pension Commission (PENCOM), the Pension Fund Administrator (PFAs) and Pension Fund Custodian (PFC). The PENCOM is the coordinator, supervisor and regulator of the administration of contributed pension funds in Nigeria.

Available statistics from PENCOM report (2019), states that the total membership of pension schemes stood at 8,949,536 as at 31 December, 2019 representing an increase of 5.67 percent (that is, 8,469,257) from 31 December, 2018. On the other hand, membership of Retirement Savings Account (RSA) scheme dominated total pension scheme memberships at 8,891,236 representing 99.35 percent, while the Approved Existing Scheme (AES) and Closed Pension Fund Administrators (CPFAs) accounted for the balance of 0.65 percent (40,951 and 17.349 respectively) of the total pension schemes membership. However, the total number of PFAs is 22; PFCs are 4 in number while the number of CPFAs is 6 in 2019.

Public Sector Pension Contribution

Under the reformed pension, the contributory pension scheme covers employees in the public service of the Federation, public services of the Federal Capital Territory and Local Governments in Nigeria. These are all combined as one and called the "public sector" (PRA, 2014). However, Judicial officers, Members of the Armed Forces, the Intelligence and Secret Services of the Federation are all exempted from the contributory pension scheme according to the pension reform Acts.

Notably, the PENCOM report reveals that the accumulated pension contributions from the public sector as at 31st December 2008 stood at 99.28 billion Naira. By 2013, prior to the

2014 reform, the public sector accumulated pension had reached 278.5 billion Naira representing 181% increase in public pension between 2008 through 2013.

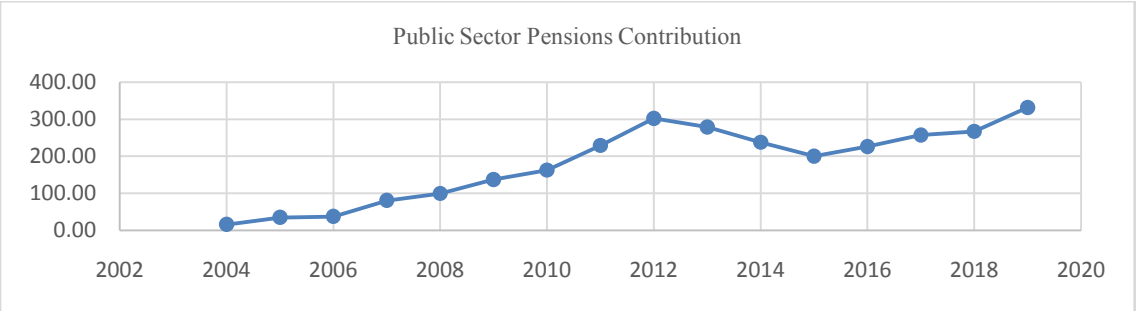

Figure 1: Trend of Nigeria's Public Sector Pension fund contribution from 2004-2020

The figure 1 above shows that public pensions contribution peaked at the end year 2020 at N331.56 billion. Prior to this year, the year 2012 recorded N302.24 billion in public pension funds contribution. Contributions from public sector stood at 237.49 billion Naira in 2014. This represent a growth of 40% in public sector contributions between 2012 through 2014 (PENCOM, 2020).Interestingly, the public sector contributed N15.6 billion at the inception of the reformed pension scheme in 2004 and grew by more than 100% in the subsequent years.

Private Sector Pension Contribution

The pension reform Act also incorporated the private sector employees based on its main objective of ensuring that every person that worked in either the public or private sectors in Nigeria receives his/her retirement benefits as and when due. Under the reformed scheme, the Pension Commission noted that the private sector comprises of businesses owned by private individuals with 3 or more employees and conglomerates. The 2014 reforms included self-employed persons (informal sector).

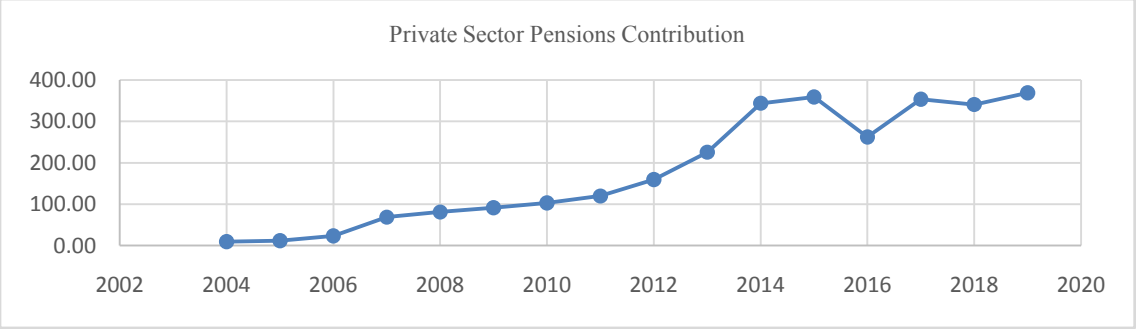

Figure 2: Trend of Nigeria's Private Sector Pension fund contribution from 2004-2020

Statistics from PENCOM (2020) show that the accumulated contributions from the private sector in 2006 stood at 23 billion Naira. This increased further to 80.81 billion Naira in 2008. But by 31st December 2013 (before the reform act in 2014), the accumulated contributions from the private sector increased to 225.42 billion Naira representing 179% growth between 2008 through 2013. The 2014 pension reform took the private sector pension contribution to

about 343.89 billion Naira by the end of the year 2014. However, in 2016, this dropped to 262.33 billion Naira and later increased marginally to N340.72 billion and N369.13 billion in 2018 and 2019 respectively. Thus, between 2014 through 2019, the private sector pension contribution declined by 7% according to the statistics presented by the Pensions Commission.

Gross Premium Income of the Insurance Industry

Insurance as we all know it is an organized system for the mitigation of risks, sharing of losses and a modern method to deal with risks (Irukwu, 1989 in Odo *et al*). There are institutions charged with the responsibility of mitigating risks through modern methods, these institutions are known as insurance companies. Insurance industry therefore is the aggregate of insurance companies that are legally registered to underwrite the risks of both individuals and corporate entities in a given economy. Prior to the year 2004, the insurance industry transact both life and non-life businesses including investment business. Accordingly, Odo *et al* (2021) noted that this arises from advance payment of premiums and the capital accumulation and consumption processes which typify the life insurance and health insurance sectors. However, with the enactment of the Pension reform Acts 0f 2004 as emended in 2014, the insurance companies created Pension Arms as subsidiaries.

Consequently, the insurance industry grew her premium base from N50.1 billion in 2004 to N268.4 billion in 2014 (NAICOM, 2019). This represents more than 400% increase in premium generation between 2004 through 2014. Also, insurance gross premium increased further to N616.2 billion in 2017 and reached N920.2 billion as at end of 2019. According to a report by Augusto & Co (2019), 48% of the premium income came from non-life business, 36% emanated from life business while 16% came from annuity businesses of the insurance industry. The bulk of the premium income generated, falling into life and annuity businesses gives credence to the fact that the pensions industry presents a very huge potential for the insurance industry to grow her premium base to one of the largest in Africa.

Theoretical Framework

This study is hinged on Solow‘s neoclassical exogenous growth model. The neoclassical exogenous growth model was propounded by Robert Solow in 1987. In the model, Solow employed Cobb-Douglas production function to establish labour, capital, and technical progress (which is exogenously determined) as important agents of growth while also stressing the importance of savings and capital formation for economic development (Amaefule, 2019). Solow’s model is stated thus:

$$Y = f(AK^{\alpha}L^{\alpha-1})$$

Solow‘s model believes that capital (K) and labour (L), in addition to other factors of production, is a cardinal agent of growth. Thus, when labour is adequately managed, it has the tendency of spurring economic growth and by implication increases output. Thus, we can also deduce from the theory that adequate labour management would include better remuneration and social security management (during active service and retirement).

It could thus be inferred from the theory therefore, that adequate retirement benefit (pension fund) administration and management has the tenacity to increase output of the insurance

industry in terms of their premium income generation. Solow's theory also stressed on the importance of long term savings and capital formation in economic performance. This also explains the importance of pension contribution; as it ensures that the pension custodians (insurance companies) enhances their long term capital formation through the accumulation of pension savings thus giving them access to investible funds.

Empirical Review

A review of empirical studies on the nexus between pensions and insurance industry performance revealed the presence of ample literature in this area of study. A study by Asekunnowo (2009) did an empirical survey of the nexus between funded defined contributory pension scheme in Nigeria and savings mobilization, financial market deepening and economic growth. Data generated were analysed using descriptive statistics. Some measures of financial deepening such as domestic credit to the private sector as a share of GDP, total bank deposits divided by GDP and contract intensive money were used as explanatory variables. His result indicated that the Nigerian capital market achieved some notable degree of deepening following the implementation of the pension reform. He concluded that the spinoff effects of these results had positive implications for the growth of insurance industry in Nigeria.

Nyong and Duze (2011) investigated the current status of the PRA 2004 in attaining the objectives for which it was promulgated. The authors conducted a survey of 3,000 serving teachers and teacher pensioners, using descriptive statistics and simple percentages to analyse the responses gathered from the survey. They found that the objectives of the 2004 PRA were yet to be achieved since retired persons still suffered trauma, pains, and even death before they received their pension packages in Nigeria; and that the sustainability of the reform was in doubt.

Edogbanya (2013) assessed the impact of Contributory Pension Scheme to Nigerian Economic Development with relevance to Pension Fund Managers. The researcher designed the study using survey design and sample size was taken as 30 and 70 for both staff and customers respectively. Data were collected from both primary and secondary sources and analyzed using percentage. The researcher adopted correlation analysis for testing secondary data and ANOVA for the primary data. The result of correlation analysis using t-test revealed that Contributory Pension Scheme (CPS) had significant impact on the GDP while the result of ANOVA revealed that risk prevalence had positive effect on the pension fund management. The researcher therefore, recommended that the Pension Fund Administrators should invest in less risky portfolio to enhance prompt payment of pension to retirees.

Ime and Mfon (2014) in their research on pension administration and capital formation notes that the private sector employers are unable to provide retirement benefits to their retirees which they traced to weak legitimate laws on pensions for the sector. Akowe, Ocheni and Akubo (2015) evaluated the contribution of portfolios of new contributory pension fund on Nigerian gross domestic product (GDP). They established a linear relationship between the pension portfolios with the Nigerian GDP. The study used regression analysis in analysing the data collected for periods between 2007 -2012 while Pearson product moment correlation test was carried in testing the hypotheses. They found that Domestic Ordinary Shares, Federal Government of Nigeria Securities and Real Estate Property of pension fund all had positive

contributions to Nigeria's gross domestic product for the period under review while Local Money Market Securities had negative contribution to Nigeria's GDP.

Nwanne (2015) examined the impact of contributory pension scheme on economic growth in Nigeria for the period 2004-2012. He used Ex-post-facto research design while employing Ordinary Least Square Regression method as the analysis technique. The result of his study revealed that pension funds had negative but significant impact on economic growth while pension savings had positive and significant impact on economic growth.

Jeff-Anyene, Ezu and Ananwude (2017) examined the effect of pension scheme on poverty reduction in Nigeria. National urban and rural poverty levels were used as proxies for poverty in Nigeria while Pension Contributions into Retirement Saving Accounts of employees was the proxy for pension scheme. The time scope of their study was for the period 2004 to 2015 and the Ordinary Least Square (OLS) regression technique was employed in data analysis. They found that pension contributions had no significant effect on national, urban and rural poverty levels; thus, they concluded that pension contribution had not impacted on economic growth of Nigeria for the period.

Tijani and Adekunle (2018) employed secondary data sourced from the Central Bank of Nigeria statistical bulletin for the period 2006 – 2016 to examine the impact of the contributory pension funds scheme on Nigeria's economic growth. They used pension fund assets and population of pensioners as the indices of contributory pension funds scheme while employing GDP as a measure of economic growth. They used the multiple regression method of statistical analysis and found that the contributory pension funds asset had significant impact on Nigeria's economic growth while population of pensioners had no significant impact on the growth of Nigerian economy.

Agbaji and Ipigansi (2018) investigated the impact of the new pension reform on the lives of Nigerian retirees. They used a structured questionnaire to obtain data and analyzed same using the information obtained from the questionnaires. Their findings suggested that pension business should not be run like government business. Stocks at the floor of the stock exchange should be allowed to compete for pension funds but with some form of 'Circuit Breaker' that stops the bidding process when the market begins to go chaotic. They recommended that the new pension reform act should be fully implemented as stated in section 4(1)(c) and section 12 (1) (b) of the Act so that all retirees under the CPS can, at least, receive 50% of the last salary they received before retirement.

In another related study, Baridoo and Leyira (2019) examined the relationship between contribution Pension Fund and economic growth in Nigeria from 2014 to 2016 for both private and public sector contributions. Their ordinary least square regression analysis revealed that positive and significant relationship existed between public sector PenCom contribution and real GDP and Per Capital Income but a negative and insignificant relationship existed between private sector Pension contribution and Real GDP and Per Capital Income. Thus, they held that an increase in public sector Pension Contribution accelerated an attendant growth in the real GDP and Per Capita Income.

Farayibi (2020) in his study of the funded pension scheme and economic growth in Nigeria used public and private sector pensions contribution, total pensions asset and market capitalization to formulate an error correction model. His findings revealed that the pension

fund contributions from both private and public sectors in Nigeria increased greatly and constituted a huge investment fund in the capital and money markets. The study concluded that with good risk and portfolio management by pension fund administrators and custodians, the contributory pension has the capacity to boost the Gross Domestic Product (GDP) in Nigeria and very convenient to retirees compared to the previous defined benefit scheme. Iwegbu (2020) studied pension fund, financial development and output growth in Nigeria by using data on pension funds, exchange rate, inflation, financial development (M2/GDP) and market capitalization as the independent variables. The ARDL model found that pension fund contribution was effective in stimulating growth through investment in portfolios that yield short term returns.

Amaefule (2020) comparatively evaluated the impact of pension fund administration on the economic wellbeing of Nigerian populace under the 2004 and 2014 Pension Reform Acts regimes. Pension fund administration was measured with pension fund contributions from public and private sectors and real gross domestic product per capita was used as proxy for economic wellbeing. He divided his study period into two, from 2008 – 2013 (2004 PRA regime) and 2014 – 2019 (2014 PRA regime). Data were analysed using Ordinary Least Square Regressions and Chow breakpoint test. He found that pension fund contribution by public and private sectors had no significant impact on the economic wellbeing of Nigerian populace under the 2004 and 2014 Pension Reform Acts (PRAs). The study also revealed that the relegation of 2004 PRA for 2014 PRA had warranted a structural change in pension fund administration in Nigeria. Therefore, pension fund contributions under 2004 PRA regime supported economic wellbeing better than the 2014 PRA periods.

Odo *et al* (2021) carried out a study on the contributory pension scheme and its effect on the premium base of the Nigerian insurance industry for the period 2005-2015. They investigated the veracity of the hypothetical expectation that the implementation of the Pension Reform Act of 2004, as amended, would lead to a quantum growth in the premium base of the Nigerian insurance industry. They used annual gross premium as a proxy for insurance industry growth while contributory pension, GDP, market capitalization, interest rate and non-contributory pension funds were the explanatory variables in their regression model. Their analysis showed that premium income of insurance industry had a positive but insignificant relationship with contributory pension scheme. They concluded that the failure of PFAs to expose the early retiring workers to the annuity option of pension payment structure hamstrung the growth of the annuity business, a major component of the insurance industry in Nigeria.

More recently, Obi (2022) studied the nexus between pension funds, insurance companies and the changed equity market in Nigeria. The research adopted the content analysis methodology where-in stylistic facts on pensions investments in relation to insurance assets were analyzed. The study found that the young pension fund industry in Nigeria has seen significant growth in 5 years while insurance asset expansion remains tepid in comparison. Also, pension funds and Insurance companies continue to have similar profile and focus mobilizing/allocating resources to high yield long-term investment instruments in order to honour their short-term cash obligations.

Recent studies such as Amaefule (2020), Jeff-Anyene, *et al* (2017), Tijani and Adekunle (2018) etc. all studied the contributory pension scheme but their study were focused on economic growth and economic well-being of Nigerian retirees. There is little literature on

the effect of the reformed pension scheme on the insurance industry in Nigeria. A closely related study by Odo *et al* (2021) aggregated pension fund as a single variable while also including market capitalization, interest rate and non-contributory pension fund. The individual effect of the public and private sector pension funds were neglected in the study. Also, Amaefule (2020) tried to disaggregate pension fund into public and private but his study was more of a comparative study of the 2004 and 2014 pension reform Acts. Another study by Obi (2022) was not quantitative as he adopted qualitative analysis of the pensions market and insurance companies. This study establishes a direct nexus between the public and private pension funds and insurance performance indicator (gross premium) from 2004 through 2020. The choice of this time scope is an update to previous studies which were obviously limited to the year 2015.

METHODOLOGY

This research follows an *ex post facto* design. Asika (2005) underscored the importance of *ex post facto* research design by stating that such research provides a systematic and empirical solution to research problems, by using data which are already in existence. This study relied on secondary data. Specifically, insurance gross premium income generated were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin 2019 edition while data on the public and private sector pension contributions were sourced from the National Pension Commission 2019 Annual report.

The study followed econometric approach in the analysis of the data. Since the data are time series in nature, we tested for stationarity of the data using the Augmented Dickey Unit root test. Based on the outcome of the stationarity test, we carried out the Autoregressive Distributed Lag (ARDL) Bounds test to determine the long run relationship between the pension reforms and performance of the insurance industry in Nigeria. The model parameters were estimated using the ARDL long run and short run estimates which followed the Ordinary Least Squares technique with distributed lags for each variable. The lag period tells us the maximum number of past years, prior to the current year, which the model can accommodate. The lag period was selected using the Akaike Information Criterion (AIC).

Model Specification

The model is a modification of the model specified in Odo *et al* (2021) with the inclusion of key control variables and disaggregation of pension contributions into public and private. The model is stated thus:

$$GPI = f(PFPB, PFPV) \quad [i]$$

The above functional equation reads that gross premium income is a function of pension fund contribution from the public and private sectors. With the intervening effect of the prevailing economy, we shall include real gross domestic product and inflation rate in the model thus:

$$GPI = f(PFPB, PFPV, RGDP, INF) \quad [ii]$$

We now expand the functional model by stating the econometric form as follows:

$$GPI = \alpha_0 + \alpha_1 PFPB + \alpha_2 PFPV + \alpha_3 RGDP + \alpha_4 INF \quad [iii]$$

In order to capture the effect of the error term in the model, we express the model in the form and as well include the time variant thus:

$GPI_t = \alpha_0 + \alpha_1 PFPB_t + \alpha_2 PFPV_t + \alpha_3 RGDP_t + \alpha_4 INF_t + \varepsilon_{it}$ [iv]

Where *t* denotes time

GPI = Gross premium income of the insurance industry

PFPB = Pension fund contribution from the public sector at time "*t*"

PFPV = Pension fund contribution from the private sector at time "*t*"

RGDP = Real gross domestic product at time "*t*"

INF = Inflation rateat time "*t*"

α_0 = Intercept of the model

α_1, α_2, α_3 and α_4 = Unknown coefficients of the model to be estimated

ε_{it} = Stochastic error term at time "*t*"

DATA ANALYSIS

Unit Root Test: The adoption of econometric procedure necessitates the need to ascertain the stationarity of the variables since they are time series in nature. The stationarity test is carried out at level and first difference as summarized below:

Table 1: Summary of the ADF Unit Root Test

Variables	Level	First Difference	Order of Integration	Decision
GPI	0.1572	-5.0670*	I(1)	Stationary @ 1st difference
PFPB	-4.0014*	-2.8309	I(0)	Stationary @ Level
PFPV	-2.8162	-6.4945*	I(1)	Stationary @ 1st difference
RGDP	-1.8564	-5.4773*	I(1)	Stationary @ 1st difference
INF	3.3575*	-6.7432	I(0)	Stationary @ Level
Critical Values				
1% (*)	-3.9591	-4.0044		
5% (**)	-3.0810	-3.0989		
10%	-2.6813	-2.6904		

Source: Eviews 9 output

The unit root test above shows that gross premium income (GPI), private pensions contributions (PFPV) and real GDP are all stationary after first differencing i.e. they are integrated of order one *I(1)*. On the other hand, public pensions contributions (PFPB) and inflation rate (INF) were stationary at level and are said to be integrated of order zero i.e. *I(0)*. The stationarity test is a clear indication of a mixed order of integration and as such we test for the long run relationship amongst the variables using the Autoregressive Distributed Lag (ARDL) Bounds test approach as justified in Pesaran, Shin and Smith (2001).

Bounds Test Approach to Cointegration: Since the variables have mixed order of integration, we proceeded to ascertain their long run properties using the ARDL Bounds test approach as explained in Pesaran *et al* (2001). The hypothesis for the Bounds test states thus:

H0: There is no long run relationship

H1: There is long run relationship

Table 2: Summary of the ARDL Bounds Test

Test Statistic	**Value**	**k**
F-statistic	22.38878	4

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Source: Eviews 9 output

Since the F-statistic value of 22.389 is greater than the critical value I(0) and I(1) bounds at 5% level, we reject the null hypothesis and conclude that there is long run relationship between pensions contribution under the reformed pensions Act and the insurance industry in Nigeria.

Estimation of the Short Run Relationship between Pensions Contribution and the Insurance Industry

The ARDL model estimates both the short and long run parameters of the model. The short run is summarized below as follows:

Table 3: Summary of the ARDL Short Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GPI(-1)	-0.059167	0.188251	-0.314297	0.7831
GPI(-2)	0.379927	0.167617	2.266646	0.1516
GPI(-3)	0.458497	0.219904	2.084986	0.1724
PFPB	-0.041013	0.195830	-0.209431	0.8535
PFPB(-1)	-0.485478	0.124770	-3.890969	0.0602
PFPB(-2)	-0.258803	0.090368	-2.863877	0.1034
PFPV	0.235374	0.095853	2.455576	0.1334
PFPV(-1)	0.276255	0.088345	3.127014	0.0888
PFPV(-2)	0.321810	0.079125	4.067102	0.0555
PFPV(-3)	-0.041266	0.067946	-0.607336	0.6054
RGDP	-0.197457	0.041867	-4.716292	0.0012
RGDP(-1)	0.185782	0.074689	2.487408	0.0611
INF	-0.100532	0.028548	-3.521508	0.0016
C	6.085647	3.083010	1.973931	0.1871
CointEq(-1)	-0.220742	0.054168	-4.075137	0.0143

R-squared	0.899573	Mean dependent var	26.30331
Adjusted R-squared	0.817440	S.D. dependent var	0.732888
F-statistic	46.85589	Akaike info criterion	-3.930909
Prob(F-statistic)	0.002131	Durbin-Watson stat	1.684766

Source: Eviews 9 output

The short run analysis summarized above shows that the ARDL model has a lag structure of ARDL(3, 2, 3, 1, 0) which was selected based on the Akaike Information Criteria (AIC). The dependent variable GPI has 3 lag periods and the coefficients show that the "own" effect of GPI is negative in the first period lag but the 2nd and 3rd lag periods have positive own effects.

Pension fund contribution from the public sector (PFPB) has 2 lag periods and the coefficients reveals that for the entire short run periods with 2 lags, public sector pensions negatively influenced gross premium income.

Conversely, pension fund contribution from the private sector was positively related to GPI in the entire short run periods including the first 2 lag periods. Interestingly, both public and private pensions contribution were insignificantly related to insurance gross premium income in the short run analysis. The short run speed of adjustment was estimated at 22.07% annually.

The intervening variables real gross domestic product (RGDP) and inflation rate (INF) both have negative short run effects on the model. While RGDP had only 1 lag period, inflation had no lags. The coefficient values of -0.1975 and -0.1005 points to the fact that both RGDP and INF decreases insurance gross premium income for the period and the decrease was significant given their respective *p-value* 0.0012 and 0.0016.

The public and private sector pensions contributions as well as the intervening variables accounted for up to 81.7% of the changes in insurance gross premium income. The F-statistic also showed the existence of joint significant relationship between the pensions reforms and insurance gross premium income.

Estimation of the long run relationship between pensions contribution and the insurance industry

Table 4: Summary of the ARDL Long Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PFPB	-3.557512	1.746416	-2.037036	0.1786
PFPV	3.588678	0.558179	6.429260	0.0170
RGDP	1.085737	0.974563	1.114076	0.1689
INF	-0.836453	0.084929	-9.848850	0.0040
C	27.569013	21.044911	1.310009	0.3204

Source: Eviews 9 output

The long run analysis of the ARDL model shows that pension fund contribution from the public sector (PFPB) has negative relationship with gross premium income generated decreasing it by 3.5575 units. This means that a unit change in public pensions contribution decreases insurance gross premium in the long run.

Pension fund contribution from the private sector (PFPV) has a positive coefficient of 3.5887 implying that a unit change in private sector pension contribution increases insurance gross premium by 3.5887 units.

Furthermore, real gross domestic product (RGDP) increased gross premium income by 1.0857 units but the increase was not significant (*p-value=0.1689*). This means that a unit change in the economy will result to 1.0857 units increase in insurance premium which does not significantly affect the insurance industry. Inflation is another intervening variable and it was found to have negative long run effect on gross premium decreasing it significantly by 0.8364 unit. The implication of this is that inflation, as expected, hampers the growth of the insurance industry in relation to their pension fund earnings just the same way inflation affects every sector of the economy.

The intercept of the model is estimated at 27.57 which is an indication that holding both public and private pensions contribution and the intervening variables constant at zero, the insurance gross premium increases by 27.57 units in the long run.

Table 5: Test of Hypotheses

Hypotheses	Statement of hypotheses	t-stat/t-tab	Decision
H_{01}	Pension fund contribution from the public sector has no significant effect on insurance gross premium income	t-stat > t-tab, i.e. -2.037 < 2.570	Accept H_{01}
H_{02}	Pension fund contribution from the private sector has no significant effect on insurance gross premium income	t-stat > t-tab, i.e. 6.429 > 2.570	Reject H_{02}
H_{03}	No significant effect of real grossdomestic product on the reformed pensions – insurance gross premium income nexus in Nigeria	t-stat > t-tab, i.e. 1.114 < 2.570	Accept H_{03}
H_{04}	No significant effect of inflation rate on the reformed pension – insurance gross premium income nexus in Nigeria	t-stat > t-tab, i.e. -9.849 > 2.570	Reject H_{04}

The Table 5 above summarizes the hypotheses test. We accepted the null hypotheses one (H_{01}) and three (H_{03}) which implies that pension fund contribution from the public sector and real gross domestic product have no significant effect on insurance gross premium income in Nigeria.

Conversely, we rejected the null hypotheses two (H_{02}) and four (H_{04}) which implies that pension fund contribution from the private sector and inflation rate have significant effect on insurance gross premium income in Nigeria.

Discussion of Findings

The major objective of the study was to determine the effect of the pension reform Acts on the performance of the insurance industry in Nigeria from 2004 to 2019. The public sector and private sector pension contributions were used as the explanatory variables of the model while the performance of the insurance industry was measured using their gross premium income (GPI).

The findings from the Autoregressive Distributed Lag (ARDL) model revealed that public sector pension contribution decreased the overall performance of the insurance industry both in the short and long run but the decrease was not found to be significant given that the *p-values* were greater than 0.05 critical value. In a related study by Nyong and Duze (2011), they found that the objectives of the 2004 pensions reform act were yet to be achieved as the quantum of remittances was significantly low. This corroborates our finding and goes a long way to prove that even till the present times, public pensions fall short of expectations in terms of growing insurance savings mobilization through premium income generation. In a similar vein, Jeff-Anyene, Ezu and Ananwude (2017) also found that pension contributions had no significant effect on national, urban and rural poverty levels. Obi (2022) stated that the nascent pension fund industry has grown but its effect on insurance asset expansion remains stunted. However, in terms of growing the Nigerian economy, Tijani and Adekunle (2018), Baridoo and Leyira (2019) and Farayibi (2020) all found significant effect of pensions funds on the Nigeria's GDP and capital market savings mobilization. The findings

interestingly revealed that public pension funds seem to favor the economy more than the insurance industry.

Furthermore, private sector pension contributions were found to increase the performance of the insurance industry in terms of the gross premium income but not significantly in the short run. In the long run, private pension contribution increased gross premium income with a coefficient of 3.589. The implication of these findings is that the private sector pension contributions had more effect on the insurance inducts than the public sector. This negates the earlier findings of Ime and Mfon (2014) where-in they discovered that private sector employers were unable to provide retirement benefits to their retirees which they traced to weak legitimate laws on pensions. Perhaps, the 2014 reforms of the pension laws remedied this weakness and made private sector pensions to contribute more to insurance premium income mobilization. A study by Baridoo and Leyira (2019) found negative and insignificant effect of private sector pension contribution on Nigeria's real GDP. This negates our findings and may be attributed to the currency of this study which incorporated updated data on private pensions contribution. The study that seems to agree with our current findings on private pensions contribution was Iwegbu (2020) and Farayibi (2020).

The intervening variables showed varying degrees of effect on insurance gross premium income. While real GDP and inflation decreased gross premium in the short run, only inflation rate maintained negative effect on gross premium in the long run. The economic condition, measured by real GDP showed long run positive effect on insurance gross premium. The implication of this is that given a steady economic climate, pension funds will stimulate insurance industry towards recording increased gross premium but the intervening effect of inflation will stifle this growth. What now remains is for the insurance industry to device strategies to ameliorate the effect of inflation on their pensions portfolio which will form part of the recommendations of this study.

CONCLUSION AND RECOMMENDATIONS

The study focused mainly on the public and private sectors' pension contributions and how this has affected the insurance industry in Nigeria. The conclusion drawn from the analysis is that the private sector pension contributions under the pension reform acts have more effect on the insurance gross premium income than the public sector. The public sector pension decreased premium income by 3.558 units while the private sector pension contributions increased premium income of the industry significantly by 3.589 units.

Evidently, the data showed that private sector contributed more in excess of almost N100bn between 2014 and 2015 and the private sector pension contribution has always exceeded that of the public sector (National Pension Commission Annual Report, 2019). Thus, the conclusion drawn from the findings is not far from the a-priori expectation. While the prevailing economic condition proxied by real GDP increased the pension and insurance premium nexus in the long run, inflation rate, expectedly, decrease this nexus. Thus, there is need to safeguard the pension funds portfolio from the devastating effect of inflation by adopting some economic measures stated here. Also, there is need for the government to intensify efforts to give the insurance industry more participation in pension matters through the implementation of one or all of the recommendations made below.

1. The National Insurance Commission (NAICOM) and the Pensions Commission (PenCom) should encourage and license more insurance companies to go into pension matters as pension fund administrators. This will help to further diversify the portfolio of the insurance industry and grow the premium income generated by the industry.
2. The Pensions Commission should devise a more targeted approach to encourage more private sector players to enrol in the reformed pension scheme. This will further grow the pension contribution from the private sector.
3. Government should endeavour to promptly remit pension contributions by its employees in every participating Ministries, Departments and Agencies (MDAs) as this may be the reason for the low pension contribution from the public sector.
4. Government should further encourage private sector participation in the reformed pension scheme through the channel of insurance companies by carrying out periodic review of the pension reform Act so as to accommodate the informal sector since the private sector comprises of both the formal and informal sectors.
5. Pension funds should be stored in non-volatile assets to avoid the negative effects of inflation on these funds. For instance, these funds can be securitized by way of hedging them against capital market long term securities that are not too volatile.

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