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The Pension Reform Act (PRA) 2004 (as amended) and Financial Adequacy of Retirees in the Federal Capital Territory of Nigeria: An Assessment of Two - Third Retirement Model

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Abstract

This study examined the Pension Reform Act (PRA) 2004 and the Financial Adequacy of Retirees in the Federal Capital Territory of Nigeria. It investigated the current status of the PRA 2004 in attaining the objectives for which it was promulgated as perceived by 215 retirees under the scheme. The research made use of two-thirds model of replacement rate to estimate several retirement adequacy measures in an effort to reconcile the results of prior literature in the area. It was discovered that replacement rate estimates vary substantially depending on the treatment on programmed withdrawal and life annuity. The result indicated 71.36% and 71.47% for life annuity payout option for senior and junior cadres respectively while the result for programmed withdrawal was 28.5% and 28.6% for senior and junior cadres. The two-thirds retirement replacement rate revealed that life annuity may be the future direction to ensure retirees' income adequacy. The study recommends among others that the PRA 2004 should be redesigned to have a Cost of Living Adjustment (COLA) provision because pensioners still suffer the adverse

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effects of income unadjusted for inflation. The rate of contribution by both employees and employers should be increased to ensure that retirees are guaranteed adequate retirement income. More so, strict measures be put in place by government to ensure the effective monitoring and implementation of the provisions of the 2004 Pension Reform Act.

Introduction

The Nigerian government over the years has been grappling with the problem of how to manage her retired personnel for them to have a fruitful life after retirement. To achieve this, the federal government has evolved policies such as Pay-As-You-Go and the financial Defined Contribution (DC) pension schemes in the Pension Reform Act (PRA) 2004 with the aim of finding out how pensioners can be properly taken care of after retirement. Studies in the past had shown that many pensioners had not been properly taken care of in the Pay-As-You-Go or the Defined Benefit policies before the introduction of the Pension Reform Act of 2004. Some authors like Ogwumike, (2008),Ubhenin (2012), and Ijeoma and Nwufo, (2015), observed that the defined Benefit was saddled with the problem of vulnerability, inequitability, inefficiency and corruption prior to the 2004 pension plan. Ijeoma et al (2015) hinted that the contributory pension shifted the burden of financial risk of pension from the employer to the employee.

As a sequel, the government has responded to these pressures by revising the parameters of traditional Defined Benefit or Pay-As-You-Go (PAYG) public pension systems, through incremental changes to contribution/benefit rates, retirement age/indexation rules, in order to keep pension system in line with changing economic and demographic trends and state fiscal capability to ensure financial income adequacy of retirees at the right time for enhanced living condition. The government thus, opted for more fundamental, structural revisions of the design and objectives of the old pension system through the creation of mandatory individual, financial Defined Contribution (DC) pension schemes in the Pension Reform Act (PRA) 2004, wherein

pension benefits are based on individual contributions to a (typically) privately managed Pension Fund Administration (PFA), and the market return to capital on those funds. Available information shows that the contributory pension scheme since its inception has accumulated the sum of over ?5 trillion (Iloani, 2015).

Many years after the establishment of the new Pension Reform Act 2004, there is still doubt among Nigerians about the successes to be derived from this scheme. Whether the PRA 2004 will be able to address the many problems associated with retirement schemes in the past is yet to be seen. Specifically, some retirees have asked whether the Contributory Pension Act of 2004 would be able to address the problems of corruption, poor administration of pension fund, inadequate build-up of pension fund, embezzlement, poor monitoring, evaluation and supervision of pension fund that usually characterized pension schemes in Nigeria. Consequently, retirees often ask whether they would ever have financial security after retirement or does life after retirement mean signing bonds with poverty. These among others have occupied the minds of retirees in Nigeria. This study was poised to examine how effective the defined contribution of the PRA 2004 can guarantee financial adequacy of retirees in Nigeria taking FCT as the case study using the two thirds retirement model.

Conceptual Issues

Pension Scheme: The gamut of the Pension Reform Act 2004 revolves around pension and its exigency but fails to provide the definition for the word pension. Ogboru (2004) defined pension scheme as a form of security which employers (predominantly, government in the Nigerian case), set up for employees on retirement to enable them have a considerable and reasonable standard of living "similar" to the type they enjoyed while in active service. A pension scheme therefore, is arranged to provide benefits to employees upon withdrawal from service on attaining the establishment's retirement age, or due to ill-health, voluntary

retirement or death (Hornby, 1995). Simply put, the need for pension schemes can be linked to provision of security in form of retirement benefit, paid for today against future consumption.

Agomo (2004) posits that pension is the right of an employee to derive some sort of benefit upon retirement if certain condition, such as minimum years of service or minimum age, have been met. This benefit may be lump sum payments, called gratuity and periodic payments called pension. Raji (2006) sees pension as a post-employment benefit paid to a pensioner to make that person financially independent at old age. Ogwumike (2008) conceptualized pension as a regular payment by an employer to a retired employee, usually till the death of the employee; such payment may also be made to the next- of- kin of a pensioner, after the death of the employee, for a given period of time.

Pension Fund according to Odle (1974) is a fairly "compulsory" form of savings and as such can adversely affect other voluntary forms of savings. However, the introduction of pension schemes tends to increase the overall level of savings of the economy. Denendbery (1974) asserts that there are two types of retirement benefit formula. The first is called a "Defined Contribution" or a "money purchase" formula. Under this type of formula, contribution rates are fixed for example, 5 percent of an employee's compensation, and an employee's benefit will vary depending on such factors as the amount of contributions made. The second type is called a "Defined Benefit" or an "annuity purchase" formula. Here, a definite benefit formula is established for each employee, and contributions are determined to be whatever is necessary to produce the desired benefit results. The first formula has been in use in Nigeria from 2004-to-date.

Financial Adequacy: For the purpose of this study, the term financial adequacy of retirees is being used inter-changeably with retirement income adequacy and financial security. McGill, Brown, Haley and Sylvester (1996) explained that most retirement income adequacy models assume that workers can maintain their standard of living after retirement with a pension income between 70-80% of their pre-retirement wages. The

consensus about income needs in retirement of 70% replacement rate (a ratio of retirement benefits to pre-retirement earnings) was based on two assumptions about social norms and standards. First, most people want to and should be able to preserve pre-retirement living standards into retirement; and secondly, that income and wealth gaps should not be encouraged to grow after retirement (Reno and Lavery, 2007). Mintz (2009) observed that although 70% replacement rate of pre-retirement income has been used as typical guide to determine adequacy, the theory which is based on life- cycle considerations and empirical evidence suggest that optimal replacement rates varies considerably. Low income earners need a higher level of replacement income to avoid poverty. Some middle and high income earners may need even less than 60% of their pre-retirement income to sustain an adequate standard of living.

Therefore, financial security of retirees can therefore be described as the condition of having the consistency of resources/payments to support a standard of living now and in the foreseeable future, whereas adequacy of retirement income is about achieving material wellbeing and having an adequate income to meet basic needs such as housing, food and clothing (i.e satisfaction of needs). Also, achieving 70% and above replacement rate of pre-retirement income in this study means that such an employee stands well to be financially secured.

Empirical Literature

Farayibi (2016) investigates the impact of pension reform on the Nigerian economic growth using the error correction mechanism and ordinary least square method. The result from the finding shows that pension funds from both the private and the public sector have increased over the years and this has contributed significantly to the funds in the capital market,it has also helped to boost investment and increase employment and increased the growth of the economy. This finding from Farayibi, (2016) corroborates the study conducted by Ijeoma *et al* (2015). They used questionnaires to elicit information from pension fund administrators supplemented by some secondary sources which

employed the use of regression analysis, the Krustal-Wallis test and the Cronbach Alpha reliability test observed that the contributory pension fund has significant effect on the nation's economic growth and the development of the capital market.

Ibiwoye and Ajijola (2012) assessed the effects of the payout option in Nigeria's contributory pension scheme using replacement model with data from 2007-2010. The study reveals that life annuity may be the future direction if the scheme is not to face the same fate as the previous defined benefit scheme. Salami and Odeyemi (2012) evaluated the impact of the application of the contributory pension scheme on employees' retirement benefit of quoted firms in Nigeria. The study used data from both primary and secondary sources from the annual accounts and reports of ten quoted firms in Nigeria. The result shows that the contributory pension scheme has significant impact on employees' retirement benefits of quoted firms in Nigeria.

Studies carried out by Kajang (2012) in Federal Capital Development Authority, Abuja and Nigerian Bottling Company, Kaduna and Kano used 274 questionnaires to gather information from respondents and chi square test which observed that the contributory pension scheme has not improved on the payment of retirees' benefits as and when due and also that the scheme has not facilitated improvident individuals by ensuring that they save in order to cater for their livelihood during old age. Ogot (2011) did a comparative analysis between the defined benefits and the contributive benefits using 118 employees of the Teachers' Service Commission and 40 staff of the Jomo Kenyatta Foundation in Kenya. The result from the Gini coefficient shows that the DB plans are likely to be more secure in terms of retirement income than for retirees under the DC pension plan. The study also hinted that DC plans tend to have lower retirement income and higher income disparity among workers compared to the DB design.

Sule, Umogbai and Emerole (2011) assessed the impact of quoted companies' asset size and profitability on employee retirement benefits in Nigeria. The study used multiple regression with data drawn from 1998 – 2007 on Ten (10) quoted firms. The

result indicated that quoted firms fund their pension cost and this has direct bearing with their asset sizes and respective profitability while Chizueze, Nwosu and Agba (2011) used Pearson product moment correlation to evaluate the impact of contributing pension scheme on workers commitment in Nigeria. Findings revealed that contributive pension scheme significantly affects workers' commitment to work, retention and attitude towards retirement. In Malaysia, Folk and Tan (2011) examined expected retirement age cohorts as a main determinant to financial planning. Using hierarchical and stepwise regression analysis for the study, the results revealed that expected retirement age cohort variables made significant contribution to financial planning preparation as well as personal orientation towards retirement planning, particularly the younger age cohort.

Olurankinse (2010) analyzed the impact of the current pension reform scheme using questionnaires to gather information from respondents. Chi-square and frequency table were used to present the finding. The findings of the study revealed that, a pensioner under the former pension scheme suffered neglect in receiving gratuities and pensions while Cole and Leibenberg (2008) used probit regression and replacement rate of retirees income from 1993-1998 to show that the typical survey of consumer finances household has higher income replacement rates than does the typical health and retirement survey household.

Ellement and Lucas (2007) investigated retirement adequacy analysis of default options and lifecycle funds using quantitative analysis of retirement income replacement ratio. The result demonstrates that the plan sponsor's default investment selection has a direct and important impact on employees' retirement income adequacy. Obben and Monique (2007) analyzed the dynamic relationship between the state pension scheme and household savingin New Zealand. They employed the co-integrating vector auto-regression and auto-regression distributed lag approaches The results indicate that the trends in the household saving rate has been negative, increases in disposable

income and gross social wealth boost savings.

Macdonald and Cairns (2006) examined the retirement behavior of workers under a defined contribution pension scheme using a simulation approach to compare the outcome of three retirement decision models: the option-value model, the two-thirds replacement-ratio benchmark model, and a newly developed "myopic" model. Their findings show that myopic model could be suitable for a DC participant, while the option value model results in inappropriate assessing of retirement pattern when applied in a DC environment.

Theoretical Framework

This study used the paternalistic theory and forward looking theories as theoretical framework. This is because the paternalistic theory advocates the protection of individual employees/ retirees by a benevolent state. Weiss (1991) pointed out that many people, left to their own devices will not save enough for their old age. It thus, behooves on the government to make laws to force or encourage them to do so. Furthermore, the Life Cycle Hypothesis (LCH) and the Permanent Income Hypothesis(PIH) provide a basis for analyzing individual and aggregate saving which of course formalizes the idea that people maximize the utility of their future consumption.

This unique build of the forward looking theories are featured in the opportunities provided by PRA 2004 among which include: individual retirement savings, right for contributors, and accumulation of long-term funds; providing a pool for boosting the economy through savings and capital formulation. This means that PRA 2004 which provides for contributory scheme perfectly fit into the theory. This is because the contributions of employees constitute a saving which is kept for either old age or rainy day. The contributions saved are invested thereby creating wealth for economic growth and development for benefit of the present and future generations. The sum investment is what will keep the life pattern of retireesgoing when they can no longer earn any income, because they will be entitled to dividend that come from such

investment. This dividend could take care of fluctuations of income situations.

Methodology

Model Specification

The study adopted the two-thirds retirement model. The model described in MacDonald and Cairns (2006), states that a DC member retires once their DC accounts can provide a sufficient wage replacement income. We consider the worker's accumulated pension to be adequate once it exceeds two-thirds of their current income. The two-thirds retirement replacement rate was adopted to achieve the main aim of this study.The pension income, divide by the individual's pre-retirement salary, is referred to as the replacement-ratio, RR(t).

$$RR(t) = \frac{W(t) / \ddot{a}\square(t)}{Y(t)}$$

Where

t: current time;

x: member's age

äo(t): the annuity factor at time t for an individual age x, the variable 10 percent is being used to proxy annuity rate for an individual age x in time t as adopted by Cannon and Tonks (2011)

W(t): the worker's accumulated DC pension wealth at time t.

Y(t): the worker's salary at time t that is pre-retirement income.

The plan member retires as soon as the replacement – ratio exceeds two-thirds; that is:

$$\text{Retirement Age} = \min\{x : RR(t) \geq {}^{2}/_{3}\}$$

The two-thirds benchmark is an adequate salary replacement level according to the range given in a report prepared by the Canadian Institute of Actuaries (1996). It is also near the actual average replacement ratio, measured from all sources of retirement income, in each of the OECD countries (Disney, d' Ercole and Scherer, 1998). Moreover, McGill et al (1996) explained that most

retirement income adequacy models assume that workers can maintain their standard of living after retirement with a pension income between 60-80% of their pre-retirement wages.

A Priori Expectations

At the planned date of retirement, if the accumulated financial resources are greater than or equal to the financial resources needed for retirement i.e ?, the individual has adequate financial resources for retirement. On the other hand, if the accumulated financial resources do not exceed the financial resources needed for retirement i.e ?, the individual has inadequate financial resources for retirement.

Presentation of Results

Appendix 1 presents the socio-demographic information on gender, age, educational qualification and marital status of respondents. Most of the respondents representing 64.65% were male while 35.35% were female. Majority of the respondents (152 representing 70.70%) were between the ages of 60 and above years; 29.30% were less than 60 years of age – this group retires as a result of ill-health or the expiration of years of service. 58.14% of the respondents had university education; 28.84% had senior school certificate of education, while 13.02% had first school leaving certificate. Similarly, 78.14% of the respondents were married, 14.42%were separated, while 7.44% are single. More so, 56 respondents representing 20.05% fall within the cadre of 06 and below while 159 respondents representing 73.95% of the retirees are within the grade level of 07 and above.

The Application of the Two-Third Method (The Replacement Ratio) for Senior and Junior Staff of FCDA using CONPSS

The consensus opinion about income needs in retirement had been 70% and was based on two assumptions about social norms and standards. One: that most people want to and should be able to preserve pre-retirement living standards into retirement; and two:

that income and wealth gaps should not be encouraged to grow after retirement. In relation to this , the MacDonald and Cairns (2006) Two-Thirds Retirement Model is being used to test the reliability of the PRA 2004 to guarantee financial adequacy to retirees based on the decision rule RR(t) =?.

Table 1: The Two Third Replacement Ratio Application to Hypothesis

	LIFE ANNUITY PAYOUT OPTION	PROGRAMMED WITHDRAWAL PAYOUT OPTION
	$RR(t) = \frac{W(t) / ä□(t)}{Y(t)}$	$RR(t) = \frac{W(t) \times \alpha(t)}{Y(t)}$ Where α: withdrawal rate = 4%
SENIOR CADRE	$RR(t) = \frac{12,850,693 \div 10/100}{1,800,924}$ $= \frac{12,850,693 \times 100/10}{1,800,924}$ $= \frac{12,850,693 \times 10}{1,800,924}$ $= \frac{128,506,930}{1,800,924}$ $= 71.36\%$	$RR(t) = \frac{12,850,693 \times 4/100}{1,800,924}$ $= \frac{12,850,693 \times 4/100}{1,800,924}$ $= \frac{12,850,693/25}{1,800,924}$ $= \frac{514,027.72}{1,800,924}$ $= 0.285 \times 100$ $= 28.5\%$
LOWER CADRE	$RR(t) = \frac{2,793,127.8 \div 10/100}{390,837}$ $= \frac{2,793,127.8 \times 100/10}{390,837}$ $= \frac{2,793,127.8 \times 10}{390,837}$ $= \frac{27,931,278}{390,837}$ $= 71.47\%$	$RR(t) = \frac{2,793,127.8 \times 4/100}{390,837}$ $= \frac{11,172,511.2/100}{390,837}$ $= \frac{111,725.112}{390,837}$ $= 0.28586 \times 100$ $= 28.6\%$

Life Annuity (Senior and Junior Cadre): RR (t) = $\geq {}^{2}/_{3}$ Thus, Reject the null hypothesis (Ho) and accept the alternative hypothesis (H1). That is the defined contribution of the PRA 2004 has significant effect on the financial adequacy of retirees in the FCT. In other words, the defined contribution of PRA 2004 is effective to guarantee financial adequacy to retirees who choose the life annuity withdrawal payout option or have guaranteed financial security to retirees.

Programmed withdrawal (Senior and Junior Cadre): RR (t) $\leq {}^{2}/_{3}$. Thus, the alternative hypothesis (H1) is rejected and the null hypothesis (Ho) accepted. That is, the defined contribution of the PRA 2004 has no significant effect on the financial adequacy of retirees in the FCT. It therefore means that, the heuristic power of the defined contribution of PRA 2004 to effectively guarantee financial adequacy to retirees who choose the programmed withdrawal option is lacking.

In our study, we have used the CONPSS (See appendix 3) to calculate the accumulated amount in the RSA of retired members of the FCDA. The resulting replacement rates of either of the two cadres at the specified mandatory retirement ages are then calculated both under programmed withdrawal and life annuity as enshrined in section 4 subsections 1a, b and c of the PRA 2004 Act. The replacement rates for the senior staff cadre and the lower cadre who choose to opt for programmed withdrawal will not meet up with the required two-third replacement rates suggested by MacDonald and Cairns (2006) which is approximately 70% of the earning before retirement. The highest he or she will get is 28.5% and 28.6% respectively which largely depends on the unrealistic assumption of a participant entering into the workforce as a senior staff. However, for those who opted for life annuity, they will get a replacement rate of 71% which is consistent with the result of Ibiwoye and Ajibola (2012) and the MacDonald and Cairns (2006) two-third model specification. This also means that categories of retirees that fall within this group have the financial muscle to meet their obligations and have a better standard of living.

It would appear that life annuity is the future direction for every employee, since with programmed withdrawal, the retiree may be taking the risks on himself. The amount and duration of programmed withdrawals are generally calculated on the basis of average life expectancies, so an individual retiree can easily outlive these averages. Even where the payments are recalculated each year based on the projected future life expectancy of the retiree and the declining group of his surviving cohorts, the capital to be re-spread can eventually decline to such a level that the adjusted periodic payments will be correspondingly unattractive. It is also generally argued that the costs of administering a programmed withdrawal and more actively investing the assets are higher than the expense loadings in a life annuity contract (Antolin, Pugh and Stewart, 2008).

Sequel to the above results, what should you then do? Manage your own account or buy an annuity? The best answer may be to do one or both. Invest part of the money for long term returns and death benefit protection; buy an annuity with the rest to hedge against the investment return and longevity risks.

Conclusion and Recommendations

This study investigated the two-third retirement replacement rate and the findings revealed that, the scheme significantly affects retirees' financial security and has relatively reduced delays in the payment of retirees' benefits as and when due. So far, responses from retirees indicated that pensioners are skeptical about the PRA 2004 in effectively attaining the objectives for which it was promulgated but they agreed that the achievement of these objectives could happen and could be sustained if doors were shut to corruption, bad leadership and bad practices. This way, the systems of providing financial security for retired persons and old age will be put in place and sustained for national development.The study recommends among others that the PRA 2004 should be redesigned to have a Cost of Living Adjustment (COLA) provision because pensioners still suffer the adverse effects of income unadjusted for inflation.The rate of contribution by both employees and employers should be increased to ensure that retirees are guaranteed adequate retirement income. More so, strict measures should be put in place

by government to ensure the effective monitoring and implementation of the provisions of the 2004 Pension Reform Act.

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Appendices

Appendix 1 Demographic Characteristics of Respondents

Variables	Respondents	Frequency	Percentages
Gender	Male	139	64.65
	Female	76	35.35
	Total	215	100
Age	Less than 60	63	29.30
	60 and above	152	70.70
	Total	215	100
Educational Qualification	FSLC	28	13.02
	SSCE	62	28.84
	Tertiary	125	58.14
	Total	215	100
Marital Status	Married	168	78.14
	Single	16	7.44
	Separated	31	14.42
	Total	215	100
Cadre	06 and below	56	26.05
	7 and above	159	73.95

Appendix 2: Variables for the Two-Thirds Retirement Replacement Ratio for Senior Staff using CONPSS

YEAR	AGE	ER	LE	SALARY	CS(RSA)	CONT
2004	51	9	28.15	1,800,924	11,635,069.3	0.15
2005	52	8	27.32	1,800,924	11,770,138.6	0.15
2006	53	7	26.49	1,800,924	11,905,207.9	0.15
2007	54	6	25.68	1,800,924	12,040,277.2	0.15
2008	55	5	24.87	1,800,924	12,175,346.5	0.15
2009	56	4	24.06	1,800,924	12,310,415.8	0.15
2010	57	3	23.26	1,800,924	12,445,485.1	0.15
2011	58	2	22.48	1,800,924	12,580,554.4	0.15
2012	59	1	21.69	1,800,924	12,715,623.7	0.15
2013	60	0	20.92	1,800,924	12,850,693	0.15

Sources: National Pension Commission Annual Report 2007, 2008, 2009, 2010, 2011, 2012; National Salaries, Incomes and wages Commission; The Legacy Pension Managers; The New pension Reform Act 2004.

Appendix 3: Variables for Two-Thirds Retirement Replacement Ratio for Junior Staff using CONPSS

YEAR	AGE	ER	LE	SALARY	CS(RSA)	CONT
2004	51	9	28.15	390,837	2,529,312.78	0.15
2005	52	8	27.32	390,837	2,558,625.56	0.15
2006	53	7	26.49	390,837	2,587,938.34	0.15
2007	54	6	25.68	390,837	2,617,251.12	0.15
2008	55	5	24.87	390,837	2,646,563.9	0.15
2009	56	4	24.06	390,837	2,675,876.68	0.15
2010	57	3	23.26	390,837	2,705,189.46	0.15
2011	58	2	22.48	390,837	2,734,502.24	0.15
2012	59	1	21.69	390,837	2,763,815.02	0.15
2013	60	0	20.92	390,837	2,793,127.8	0.15

Sources: National Pension Commission Annual Report 2007, 2008, 2009, 2010, 2011, 2012; National Salaries, Incomes and wages Commission; The Legacy Pension Managers; The New pension Reform Act 2004.

COMPUTED FROM CONPSS	Senior Cadre	Junior Cadre
Annual contribution to the RSA	N135, 069.30	N29, 312.78
Monthly Contribution to the RSA	N11, 252.78	N2, 931.73
Annual Basic Salary	N1, 800,924.00	N390, 837.00
Monthly Basic Salary	N150, 077.00	N32, 569.75
Average Accumulated Amount Transfer From DB to DC RSA	N11, 500,000.00	N2, 500,000.00

The Yamane's Formula at Arriving at a Sample Size

$$n = \frac{N}{1+N(e)^2}$$

Where: n= Sample size
N= Population size
e= Level of Significance (95%)

$$n = \frac{3,648}{1 + 3,648\ (0.05)^2}$$

$$n = \frac{3,648}{1 + 3,648\ (0.0025)}$$

$$n = \frac{3,648}{1 + 9.12}$$

$$n = \frac{3,648}{10.12}$$

$$n = 360$$