

A Comparative Analysis of the Implementation of the Defined Contributory Pension Scheme in Nigeria and Chile

Stephen Oluemi Obasa*

Department of Political Science and Public Administration, Redeemer's University, Ede, Osogbo, Nigeria

ABSTRACT

The discourse on implementation of policy among scholars is increasing on daily basis. A lot of arguments and counter arguments were rooted in top-down, bottom-up and hybrid theories. The unprecedented challenges associated with the implementation trajectories cum defined contributory pension scheme have further posed a serious problem to countries adopting the new pension plan. The contemporary global debate about pension reforms is based mainly on the concern for the long-term financial viability of existing government operated pension systems. The recent global shift from the defined benefit to defined contributory plans has cut across different countries following the set-back in the former and the benefits associated with the latter scheme. Countries in Europe, North America, Latin America, Asia and Africa are now reforming their social security and pension systems following the success of the new scheme in Chile and other countries that earlier adopted it. The rationale behind this research is to investigate the success of the Chilean pension scheme; inquire how the defined contributory plans have enhanced the economic and social development of Chile; and compare analytically the relationship that exists between Nigeria and Chile in the course of implementing the scheme.

Keywords: Implementation; Defined contributory pension scheme; Economic development; Nigeria; Chile

INTRODUCTION

Many countries have shifted from the public pay-as-you-go social security to the defined contributory pension scheme drawing from the Chilean experience with a variety of individual characteristics. The development of funded pension scheme succinctly means a significant savings dimension and economic growth based on appreciable investment. Since the radical reform of Chile's social system in 1981 with the shifting from the defined benefit to defined contributory pension scheme, countries like Mexico, 1997; Hungary, 1993; Poland, 1999; Hong Kong, 1997; and Nigeria, 2004; made a similar shift in the various years. The US has a well-developed contributory scheme established as far back as 1935. In the United Kingdom, there was a long tradition of funded occupational pension scheme till 1978 [1,2].

In a defined contribution pension (DCP) scheme, an individual builds up his or her own pension fund to provide an income during retirement. Examples of such schemes are the USA's 401(k) scheme, the UK's personal and stakeholder pensions, Germany's Reister plans, and Australia's Superannuation Guarantee. Individual pension savings plans exist in Austria, Czech Republic, Denmark, Greece, Finland, Ireland, Netherlands, Slovenia and Spain; a number of countries, such as Estonia, Latvia, Lithuania,

Hungary, Poland, Slovakia and Sweden, have switched part of their social security pension system into private funded schemes [3].

The decline in defined benefit schemes has varied considerably across countries. The change has been necessitated by the perception that defined contribution shift enhances investment and longevity risks to workers. Again, for employers, defined contribution schemes have the advantage that the risks of poor stock market performance, increased life expectancy and a fall in interest rates are borne by the employee. It is however essential to say that employers have used defined benefit schemes in competitive labour markets to attract and retain skilled employees [1,4-8]. It should also be emphasized that defined contribution plans, in spite of their name, do not require contributions to be defined in advance, although typically they do have set percentages of earnings as regular contributions. The distinguishing feature of DCP schemes is that the benefits are determined by the contributions paid in, rather than the way round [2].

LITERATURE REVIEW

Conceptual clarification

A concern with implementation emerged as an outgrowth of the

Correspondence to: Stephen Olufemi Obasa, Department of Political Science and Public Administration, Redeemer's University, Ede, Osogbo, Nigeria, Tel: +08023303909; E-mail: obasaoluwafemi@yahoo.com

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renewed interest in the substances of policy among post-behavioural era political scientists [9]. Since 1973 when Pressman and Wildavsky introduced an infant area of study in implementation, prodigious growth and development has emerged [10,11]. The two scholars believed that government programmes can be attained through effective implementation of policy promises. Divergence in the view of implementation scholars over the years resulted into the emergent three schools of thought. The 'top-down', 'bottom-up' and 'hybrid' approaches emerged. Top-down theorists see policy designers as the central actors and concentrate their attention on factors that can be manipulated at the central level [12]. Among scholars in classical theorists are Pressman and Wildavsky [10] Van and Van [13], Bardach [14] as well as Sabatier and Mazmanian. However, bottom-up theorists while contending with the view of the top-down theorists criticised the latter for only considering the central decision-makers and neglecting other actors. Hence, the bottom-uppers focus on the individuals, their behaviour and contributions in the political process at the field level. Scholars like Elmore, Hjern and Hull [15] Barret and Fudge [16], Lipskey, Darling-Hammond [17] Walker and Gilson [18], Makinde [19] have criticised the top-down approach for only considering the central decision-makers and neglecting other actors. Hybrid focuses on bringing the micro-level variables of bottom-up approach together with the macro-level variables of top-down approach to form the hybrid in implementation research in order to maximize the benefits from the strengths of both. The hybrid or interactive approach emphasizes the complex process of negotiating and bargaining between policy and planning process [16-20].

Chronologically, implementation is thought to occur after adoption of a policy and before routinization of operations, activities, and tasks that are governed by the policy [21]. Effective implementation is said to be partially preordained by the strengths of the statute, including clear delineation and ranking of unambiguous objectives [11]. For a policy to experience effective implementation, the implementers or executors must not operate far away from their immediate environment since these principal actors have a fundamental impact on the outcome of the decision. Secondly, there must be regular monitoring evaluation of the implementation process to enable implementers to know the extent of deviation in the expected results and current outcome.

Three aspects can be distinguished as inherent to the term *implementation*. The first one regards the temporal order in which implementation in a policy process takes place. The second aspect concerns the causal logic, while the third one is about the form of authority (Hupe). The following definitions have been given by different scholars of policy implementation:

- "Policies imply theories. Policies become programs when, by authoritative action, the initial conditions are created. Implementation, then, is the ability to forge subsequent links in the causal chain so as to obtain the desired result. [10]"
- "Implementation involves a process of moving forward a policy objective by means of administrative and political steps" Grindle [22].
- "Implementation involves the committal of funds, the establishment of structures, and hiring of personnel, and the administering or executing of activities, and the securing of policy goods, services and other intended outcomes" [23].
- "Implementation encloses all actions that take place during the realisation of the plans, i.e., budgeting, construction of

infrastructure and the undertaking of necessary institutional changes for policy measures [24]"

- "Policy implementation encompasses those actions by public or private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions [13].

It is "the point at which intent gets translated into action." Their conceptual definition of implementation is "

- (1) A declaration of government preferences.
- (2) Mediated by a number of actors who.
- (3) Create a circular process characterized by reciprocal power relations and negotiations [25].

Implementation is the final stage of the planning process; actually, it is the operational phase, where the plans/projects are realised. In this stage is the most vital phase in the policy process as it determines the extent the policy formulated can survive or withstand the test of time [23-26].

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 (Whiteside). This definition draws attention, therefore, to a crucial ideological 'fault-line' running through pension policy. on the one hand, a view of pensions as instruments of private or public economic policy, largely describable as ways of holding back returns from labour market participation; and, on the other, a view of pensions as providers of an adequate income for all in old age (a perspective preferred here to describing them as 'protection against destitution', notwithstanding the fact that in much public policy they are seen as no more than that) [27].

A defined contribution *plan* simply means that a worker keeps contributing to an account. The account accumulates, earning interest. Upon retirement, the worker gets whatever is in the account. In many cases, the worker is not allowed to withdraw a lump sum.

Defined contribution pensions (DCP) are systems in which the benefit is determined by the value of assets accumulated toward a person's pension. Benefits may be taken as a lump sum, as a series of withdrawals, or through an annuity. The expected discounted value of benefits is thus equal to the value of assets (in technical terms, the benefits are determined actuarially [28,29]. There are several types of defined contribution plans, including money purchase plans, profit-sharing plans, 401(k) arrangements, savings plans, and employee stock ownership plans.

Paradigm shift from defined benefit to defined contributory pension scheme

Defined benefit plans provide a greater benefit to employees that participate in the plan for a longer time period. They also generally have longer vesting periods than defined contribution plans, and the benefit formula for retirees is based on age, years of service, salary, and a multiplier, which rewards employees for tenure with most employees achieving their highest benefit accruals at the end of their career [30,31].

Under defined benefit plans, employers guarantee benefit payments and are typically obligated to bear the costs of funding deficits. When a funding deficit occurs, it generates unfunded

benefit obligations for the plan sponsor. The benefit obligation in a defined benefit plan is also called the Actuarial Accrued Liability. The defined benefit plan sponsor's unfunded obligation fluctuates each year [30-32].

The pension reforms of the past few decades had almost inevitably three key objectives [33-38]; Fultz.

- i) To improve the actuarial features of the pension system in a way that would also increase its intergenerational fairness [38]. The latter feature, more microeconomic, relates to the link between benefits and contributions [39,40]. Many countries with very mature systems (Italy, Latvia, Poland, and Sweden) have improved actuarial fairness and balance by introducing notional defined contribution systems that combine partial funding with individual accounts [41].
- ii) To reduce the defined benefit (DB) and increase the defined contribution (DC) component in financing retirement income with the objectives (among others) of:
 - (a) Diversifying the financing mechanisms for pensions,
 - (b) Strengthening the consumption-smoothing component of the system, and
 - (c) Increasing the risk-adjusted return on pension contributions.
- iii) To increase the level of funding in the system as a means of increasing the value of the collateral behind the pension promise and of promoting national savings.

In many countries, these objectives were achieved through the introduction of second pillars. *Second pillars* are occupational or personal, fully funded plans targeting formal sector workers, with mandatory participation and with financial assets as the funding or collateral of the pension promise [35,41]. Currently, mandatory DC pension second pillars are present in a large number of economies, with coverage easily exceeding 100 million participants. In Latin America, economies include, but are not limited to, Chile, Colombia, Mexico, and Peru. The effective years of implementation of initial reform in Latin America are Chile (1981), Peru (1993), Argentina and Colombia (1994), Uruguay (1996), Bolivia and Mexico (1997), El Salvador (1998), Costa Rica (2001), Nicaragua (2002), Ecuador (2001) Panama (1999 and 2006) and the Dominican Republic (2003). In Europe, economies include Bulgaria, Denmark, Hungary, Poland, Sweden, Switzerland, and the United Kingdom. In Asia and Oceania, economies include Australia; Hong Kong, China; and New Zealand. The effective years of implementation of the initial reforms in Eastern Europe are Hungary and Poland (1998); Latvia (2001); Bulgaria, Croatia, Estonia, Kosovo, and the Slovak Republic (2005); and the former Yugoslav Republic of Macedonia [41].

Defined Contribution (DC) supporters argue that such plans save employers money when stock prices are falling, but they are actually less efficient and more costly than defined benefit (DB) plans and they significantly increase the risk of poverty among the elderly and would fail to attract good workers to state service [42].

However, DC proponents often fail to adequately evaluate the costs and risks of closing a DB plan. There are both direct costs and risks, and indirect costs and risks of closing a DB plan. Some risks are predominately borne by the employer and some are predominately borne by the employee. Direct risks include: The cost of administering two plans for both current and future employees and higher DC plan administrative costs; Asset Allocation and

Investment Return advantages of a DB plan; Liquidity requirements of a DB plan; Accounting Impact - frozen DB plan expenses must be amortized over a decreasing payroll which will lead to front-loaded expenses; Social Security - would have to add employees that currently do not participate; The economic impact on the state/local economy of a DB plan versus a DC plan.

Indirect Risks include: Impact on individuals' retirement decision making; Loss of a recruitment and retention tool; Disability and survivor benefits not offered in a DC plan; Longevity risk and leakage in DC plans; Cost of Living Adjustments are a DB plan benefit, not a DC plan feature [43].

Characteristics of defined contributory pension scheme in Nigeria and Chile

The following can be considered as the features or characteristics of the new scheme.

Contributory in nature: In a defined contribution plan, employers generally promise to make annual or periodic contributions to accounts set up for each employee. The contribution to a defined contribution plan may be stated as a percentage of the employee's salary and/or may be related to years of service. In a defined contribution plan, contributions can be viewed as a deferred wage once an employee has become vested. In Chile, Wagerworkers are mandated to contribute 10% of their monthly earnings plus an additional contribution to cover administrative costs and disability and survivor insurance. In Nigeria, workers are expected to contribute 8% while the employer is expected to remit 10% according Pension Reform Act 2014 (as amended).

Mobility/portability: Advocates of DC plans contend that modern workers prefer the mobility and control of a DC plan. Though some workers who change jobs frequently might prefer a DC plan that can follow them, employees in the public sector still opt for DB plans [42]. DC plans are not back loaded like final-pay DB plans. The result is that many DC plans are highly portable. An individual can build up a significant value for retirement even when switching employers every few years [44]. The DC plan is more portable than the DB plan because all benefits are accumulated in the member's individual retirement account (Peng).

Membership/coverage: The essence of imposing pension scheme on retirees is to enable prospective pensioner to have sound retirement plan for the future through their consistent savings. This development promotes economies of scale when large number of individuals takes part in the pension. In Nigeria, defined contributory pension is mandatory for workers in the private (if it has up to 5 workers) and public sectors. However, if a worker has 3 years to retire, he or she will be exempted. The Chilean Individual Pension System is compulsory for salaried workers while it is optional for the self-employed. When it was instituted existing workers had to choose whether to remain in the old pay-as-you-go system or switch to the new system; however, new workers entered the new system directly [45].

Management: The defined contributory pension scheme is not solely managed by the government of a country as it were under the pay-as-you-go scheme. Under this new scheme (DCPS), the scheme is basically managed by the government or private organisation (employer) and the employee. In terms of management, the two contributors have equal participation in terms of financing, risk bearing, investment, and other activities. In Nigeria, DCPS

is managed by private organisation such as the Pension Fund Manager and Pension Fund Custodian. In the same way, Chile's scheme is managed by Administradoras de Fondos de Pensiones, (AFP). Workers affiliate to one of the private pension funds where they have an individual pension account.

Retirement benefits: In a Defined Contributory plan, there is no benefit formula—there is no formula indicating how much a person will receive in retirement. In addition, benefits are not typically paid in the form of an annuity. Instead, when a person retires they get access to an investment account that has held funds on the person's behalf. The value of the account at retirement depends on two factors: the contributions that were made to the individual's account and the investment returns that were earned on the account. In some cases, it is the employer who makes the contributions on an employee's behalf [45]. Unlike DC plans, defined benefit (DB) plans provide a benefit based typically on time served and a predetermined proportion of either career average or final salary [46].

Claiming retirement: The retirement benefit can easily be claimed by the retirees since the pension managers are in custody of the cash. The pension law under which every pension manager is expected to operate must take into cognisance the power given to them in this regard. The ability of retirees to access their money is a function of what the pension act says as per the period when the money will mature for collection, age that is required before it can be collected, and verification of retirees' identities.

Pension liabilities: A pension liability is the difference between the total amount due to retirees and the actual amount of money the company has on hand to make those payments. It is the total amount that gets paid in future pensions. The defined contributory pension scheme creates opportunity for those under the old scheme (i.e., defined benefits) to have access to their retirement benefits based on the fact that the government pays the accrued pension liabilities. Hence, retirees are prevented from experiencing a financial setback. In Chile and Nigeria, the pension reform took into cognisance the existence of implicit liabilities accrued by the government both to retired and active workers which was experienced as a result of the transfer from defined benefit to defined contributory pension plans.

Tax exemption: The employers only allow tax to be paid by workers after deduction of contributory fund from salary. Hence, the amount paid by workers is relatively low compared to when such tax is paid before deduction. Earnings within the accounts are tax-free, but withdrawals in the form of lump-sum payments or annuity payments are taxable. Unlike defined benefit schemes, which promise a specific income, the income you might get from a defined contribution scheme depends on factors including the amount you pay in, the fund's investment performance and the choices you make at retirement.

Insurance policy: One of the features of defined contributory pension scheme is that it does not remove the idea of insurance policy for staff established to take care of the retirees by an organisation. The insurance policy is designed to provide retirees with life insurance protection at the lowest cost. Ideally every organisation is expected to establish insurance policy for the workers in case there are tragedies that result to their retirement. However, the insurance policy of any country should be factored in the pension plan Act regulating the defined contributory pension scheme (DCPS). Thus, aside from the entitlement benefit received

from the savings or invested in the pension administration institution, certain amount of money is given to the workers in the face of sudden death while in service.

Dismissal from service: If you are a member of a personal pension, stakeholder or defined contribution scheme you should be entitled to compensation for lost pension contributions during any period of notice. This loss will be reduced to reflect the fact that you'll be receiving the contributions as a single lump sum rather than over a period of time. Defined contributory pension scheme makes it possible for those covered by the plan to only lose their jobs rather than the money they have in their retirement savings account.

Collateral for loans: The defined contributory pension scheme does not provide opportunity for contributors to use their benefits for collateral loan. This could be as a result of the fact that the period of collection of benefits is attached to when a worker has left the service of an organisation.

Minimum service years: In Nigeria the pension reforms of 2004, 2011 and 2014 did not indicate the date of retirement, but only stated that a retiree would only have access to pension benefits at the age of 50 years, Chile's pension reform indicated 42 years (depending on the amount such retirees are having in their retirement savings account) and 55 years while the blue collar employees have 65 years as retirement age.

Gratuity: The introduction of DCPS in the two country practically means that the idea of paying gratuity which was part of the old scheme have ceased to exist. For instance, in Nigeria the Government is part of the contributory fund to increase the amount of retirement savings that the workers are having with their various pension managers, it would amount to financial burden if gratuity is retained.

Investment strategies and risk management

Under defined contribution plans it is the employee who bears the investment risk. Favourable investment results will increase benefits, while unfavourable results will decrease benefits. A defined contribution plan puts all the risk squarely on the worker. Workers bear the risk of the rate of return. Rates of return on funds are uncertain. The rate depends on macroeconomic shocks, investment strategies and many other factors.

The various common characteristics of defined contributory pension scheme in Nigeria and Chile can further be expanded as contained in the Table 1 beneath.

PROS AND CONS OF DEFINED CONTRIBUTORY PENSION SCHEME

Pros

The acceptance of the Defined Contributory Pension Scheme is fundamentally based on certain advantages associated with the reform. These are defined contribution pension plans in general, and 401(k) plans in particular are important vehicles for retirement savings [47]. Defined contributory plans create awareness for savings habit among workers. Increased pension savings may imply higher aggregate savings providing more funds available for investment in general. Second, higher pension savings will lead to a larger inflow for pension funds and life-insurance companies, who will invest these funds into capital markets. As pension funds' liabilities have a long maturity, they can afford to make long-term investments,

for example through long-term equity stakes. Even if these savings substitute savings through banks, this may have a net positive effect on economic growth, if banks have a more short-term focus. Third, pension funds are better able to diversify risks across younger and older generations, and - if properly regulated - across countries as well [45-49].

Some DC proponents also say that DC plans offer greater transparency because the employee selects their own investments, eliminating potential conflicts of interest in investment decisions by public retirement boards [43].

The DC plan addresses the funding risks to the plan sponsor of the DB plan. such funding risks result from the economic and demographic assumptions in the actuarial valuation as well as actions taken by both plan sponsors and members. All of these sources of funding risk are inoperative in a DC plan (Peng).

While eliminating funding risk is the major advantage of a DC plan, another advantage is its portability. The DC plan is more portable than the DB plan because all benefits are accumulated in the member's individual retirement account. More importantly, unlike the DB plan in which the bulk of the pension benefits are accrued toward the end of the career, the accrual of pension benefits is more evenly spread out over one's career in a DC plan (Peng).

Defined contribution plans offer distinct advantages to employees who change jobs frequently. Vesting provisions in these plans are generally more liberal than those for defined benefit plans. Many defined contribution plans provide at least partial vesting of employer contributions after two or three years of service.

Employee contributions are always immediately and fully vested as they are in defined benefit plans. Additionally, vested benefits under thrift and profit-sharing plans are normally paid in a lump sum at employment termination, but under defined benefit plans they are usually paid as an annuity.

Cons

The following points have made the arguments for the adoption of Defined Contributory pension Scheme by countries as proposed by some scholars to be opposed by supporters of Defined Benefit Plans. Those in a Defined Contribution program are more susceptible to poverty if circumstances go awry. A dramatic meltdown in the stock market just before retirement could deplete an employee's retirement nest egg. Once retired and unable to earn the money back or rely on other options, retired employees could slip into poverty [42].

Defined contribution plans can subtly alter the level of welfare within a family. In many countries, upon retirement, the worker (an overwhelmingly number of male workers) is required to buy an annuity. In most cases, the male workers buy single life annuity (which provides money as long as he lives) and not a joint life annuity (which provides money for the last surviving partner). Thus, there is a large drop in income for widows. Defined benefit plans typically provide substantially more benefits for the widows (Porterba et al.).

DC plans also tend to be more expensive to run than DB plans. The individualization that is central to the operation of DC plans

Table 1: Basic features are of defined contributory pension benefit in Nigeria and Chile.

S/N	Aspects of Reform	Chile	Nigeria
1.	Date of inception	1981	2004
2.	Optional or mandatory	Mandatory	Mandatory
3.	Parallel public system	None	None
4.	Contribution rate	10%	7.5% (later reviewed to 8% by PRA 2014)
5.	Voluntary contribution	Exist	Exist
6.	Contribution from government	Not existing	Existing (7.5%, PRA 2004 and 10%)
7.	Additional savings	Exist	Exist
8.	Fixed commission	Exist	~
9.	Variable commission on contributions	Exist	Exist
10.	Discount permitted	None	None
11.	Old age pension	Exist	Exist
12.	Disability and survivors pension	Exist	Exist
13.	Early retirement	Exist, 42 years	Exist, 50 years
14.	Number of funds per PFA	1	1
15.	Investment limits	Exist	Exist
16.	Guarantee minimum return	Exist	Exist
17.	Profitability fluctuation reserve	Exist	None
18.	Legal reserve	Exist	None
19.	Total pension fund administrators	6 as at 2018	21 as at 2018
20.	Pension fund custodians	None	4 as at 2018
21.	Compliant to contribution	~	7,975,976
22.	Asset under management	US4325 bn as at 2018	N7.943 trillion as at 2 nd quarter, 2018
23.	Rate of return	11.2% change USD 210,512 million, 2018	3.76% as at 1 st quarter, 2018
24.	Aum/gross domestic product	\$76, 952 million as at 2018.	N28,464,322.01million as at 1 st quarter, 2018
25.	Statutory reserve	~	N28,464,322.01million

Sources: Rodriguez [98], FGN, CBN [99], NBS, Ndimele [100], PenCom, Suleiman [101], Brown [102], OECD [93], *countryeconomy.com*.

means that they cannot easily pool risk. DC plans, therefore, typically accept less risk and hence receive lower average returns, particularly after investment and administration expenses [50].

The shift to DC plans passes the risk to the participants, who are far less able to manage it than shareholders and lenders. Participants lack the connections and resources to get the same quality of investment advice available to a large DB plan. The participant also now has a longevity risk which was less in the DB plan due to the pooling of individual risks [51,52]. Retirees face financial risks that are difficult to manage without specialized and sophisticated products. Central to the idea of a DC retirement plan is the idea that asset allocation can address all of the needs of the retiree [46,53]. In reality, there are risks facing retirees that are very difficult to ameliorate without using products that are specifically designed to deal with them.

While the level of returns varies by unweighted versus weighted and whether the focus is the whole universe or just large plans, defined benefit plans consistently report higher returns than defined contribution plans. This result is not surprising given that, for every asset size, the average return for defined benefit plans exceeds that of defined contribution plans [54].

Administrative costs tend to be higher for DC plans, and it must be kept in mind that, in general the employer pays the administrative costs in a DB plan and the employee pays the administrative costs in a DC plan. Switching from a DB plan to a DC plan almost always means, particularly in the public sector, that the DB plan will be maintained for current employees, adding additional costs to administer two plans [43].

DC plans often lack a clearly stated goal that allows contributors to measure their progress toward a secure retirement. There is a tendency for DC plans, particularly in compulsory systems, to set a goal of building up a lump sum. For most retirees, their lump sum is not inherently suited to ensuring financial security in retirement. Retirees find it difficult to estimate how much they can spend each year to fund a retirement of an indeterminate length. The trouble is that almost nobody has an "average" retirement. It is a highly individualized experience [46].

A considerable drawback of the integrated scheme design is that where the State pension increases faster than an individual's earnings in the years before retirement, the pension paid to that person from the scheme will be less than expected. If the individual is earning close to 150% of the State benefit, they could end up with a relatively small pension.

IMPLEMENTATION OF DEFINED CONTRIBUTORY PENSION SCHEME IN NIGERIA AND CHILE

Nigeria

Many sub-Saharan African nations introduced defined contribution pension scheme (DCPS) to replace the defined benefit plans inherited from their colonial masters in 1960 [55-59]. The reason for this shift to new pension scheme was to provide social protection for workers in the private and public sectors who were not covered in the old scheme. Aside from this, the various African governments introduced the new scheme (DCPS) to secure domestic funds that would enable them to access socio-economic development [60,61].

In Nigeria, the intention of the government to enact pension scheme dated back to the colonial era, precisely 1951, when the pension ordinance was enacted and made retroactive from 1st January, 1946 [62]. Under the ordinance, pension was not an automatic right of Nigerians because it was meant to cater for the interests of the colonial administrators and British officials in the public service. In order to enhance the proper implementation of government pension plan, the National Provident Fund (NPF) was established under the Act of Parliament of 1961 to regulate and address pension matters. In 1979, the pension Act No. 102 as well as the Armed Forces Pension Act No.103 was formulated. Similarly, the Police and other Government Agencies pension scheme was enacted under the Pension Act No.75 of 1987. In the same year, 1987, the Local Government Staff Pension Board was created to handle employee pension matters. In 1993, the National Social Insurance Trust Fund (NSITF) came on board under decree No.73 of 1993 to replace the erstwhile National Provident Fund (NPF). The NSITF was meant to cater for employees in the private sector of the economy with effect from 1st July, 1994 [1,62-66].

The inadequacy of the Defined Benefit Scheme or Pay-As-You-Go (as it is generally referred) made the Federal Government of Nigeria under President Olusegun Obasajo to embark on a Contributory Pension Reform Scheme through the enactment of Pension Reform Act of 2004. The objective of the new act was to unify the features of the public service with those of the private sector in terms of contribution to benefits, key players and regulations [1]. Before the reform took place, the pension liabilities of the Federal Government were almost 3 trillion naira; an amount which constituted a huge proportion of the average annual budget of the nation. For instance, by the end of 2003, the public pension liabilities were "more than 50 per cent of the total budgets of the federal government for 1999, 2000 and 2001 put together and far more than each of the budgets" [67]. As a result, federal and state workers in Nigeria came to regard retirement from employment with trepidation, not least since it often meant that income would cease [67].

The PRA 2004 established the defined contributory Pension Scheme in the Public and Private Sectors of the economy. The objectives are to:

- (a) Ensure that every individual who worked in either the Public Service of the Federation, Federal Capital Territory or Private Sector receives his retirement benefits as and when due.
- (b) Assist improvident individuals by ascertaining that they save in order to cater for their livelihood during old age.
- (c) Establish a uniform set of rules, regulations and standards for the administration and payments of retirement benefits in the Public Service of the Federation, Federal Capital Territory and the Private Sector.

On the 7th April 2011 and 1 July 2014, President Goodluck Ebele Jonathan signed into law the new Pension Reform Acts 2011 and 2014 which repealed the Pension Reform Act No. 2 of 2004. The new Pension Reform Acts govern and regulate the way the Defined Contributory Pension Scheme should be administered in the public and private sectors. Some of the major amendments include the exemption of the military personnel from the DCPS (Pension Reform Amended Act, 2011), increase in the minimum number of employees expected to make contributions towards the Retirement Savings Account (RSA) under the Act mandatory, increase in the

minimum contribution into the Scheme and the imposition of fines and penalties on Pension Fund Administrators (PFA) for failure to meet their obligations to contributors and violation of the provisions of the Act as well as other areas. Consequent upon this new development, employers may need to restructure their staff compensation to reduce the impact of likely rise in staff cost while maintaining staff take home pay at the current levels [1].

There are so many factors that are responsible for the shift from the defined pension scheme to the defined contributory scheme, among which are inability to pay pensions and retirement gratuities to retirees, inadequate funding, delay in remittance of retirement benefits by Government, poor administrative handling of scheme, inadequate training of pension official by Government, lack transparency and corruption from pension officials and diversion of funds by Government, undue intervention by the Government and politicisation of the payment of retirement benefits, discomfort and sudden death experienced by retirees.

Some of the above problems, particularly, those that consisted financing the scheme emanated from high payroll taxes and tax evasion, misallocation of resources, bureaucracies, and economic downturn, lack of budgetary provision and inefficiency in the management of the system, wrong investment decision, arbitrary increases in pension without corresponding funding arrangements, non-preservation of benefits, serious structural problems of non-payment and non-coverage [62,68-73].

In order to be able to operationalise or implement the new pension scheme following the shift from the defined benefits plan, a legal framework was established by the Government with the formulation of three pension reform acts of 2004, 2011, and 2014. While the PRA 2004 was enacted by President Olusegun Obasanjo on 25th June 2004, the PRAs 2011 and 2014 were enacted by President Goodluck Jonathan. The 2004 pension act was applicable to those in the public and private sector. The objective behind the establishment of DCPS is to (a) ensure that every person who worked in either the Public Service of the Federation, Federal Capital Territory or Private Sector receives his retirement benefits as and when due: (b) assist improvident individuals by ensuring that they save in order to cater for their livelihood during old age: and (c) establish a uniform set of rules, regulations and standards for the administration and payments of retirement benefits for the Public Service of the Federation, Federal Capital Territory and the Private Sector PRA 2004, Section 2).

The rate of contribution of fund according to PRA 2004 was a total of 15% equally shared between the employer and employee (7½% each) while the military personnel paid a minimum of 2½%, and the Government paid 12½ (totalling to 15%). This rate was later reviewed upwardly to a minimum of 18% as contained in the PRA 2014 (amended). In this new pension law of 2014, employer and employee contribute 10% and 8% respectively. The essence of this increase was to enable the retirees to have more in their savings. However, with the enactment of PRA 2011, the military personnel were exempted from the scheme by the Government. The major reason for the exemption of military personnel (Armed Forces, Intelligence and Secret Services) was to enable the Federal Government to comply with the international best practices.

The reasons for the enactment of the PRA 2014 (which repealed PRA 2004) are to: facilitate stringent penalties on defaulters, promote fund protection, empower PenCom more to enable the commission to institute criminal proceedings against non-conformists, review the contribution rates, adjust the periods of

accessing benefits by retirees (which was formally six months but now four months), make group life policy mandatory to every organisation, among others. The Act governs and regulates the administration of the DCPS both in the public and private sectors in Nigeria. Hence, it promotes participation in the new scheme.

The DCPS is being implemented through the National Pension Commission (NPC), known as PenCom, as contained in PRAs 2004, and 2014. The major function of the commission is to regulate and supervise the scheme established under the Act and also issue guidelines for the investment of pension funds among others (PRA 2004, Section 20 & 21). To enhance proper implementation, the Commission also established the Pension Fund Administration (PFA) and Pension Fund Custodians to carry out the responsibilities of opening retirement savings account for all employees; investing and managing of pension funds and assets; remitting of retirement benefits to employees; and other functions as spelt in the Act and as directed by PenCom [74]. Any company that is set up by the Nigeria Social Trust Fund (NSITF) under the PRA 2004 continues to operate as PFA. On the other hand, the Pension Fund Custodian plays the function of receiving the total contributions remitted by the employer on behalf of the PFA within 24 hours of the receipt of contributions from any employer; notifying the PFA; (c) hold pension funds and assets in safe custody on trust for the employee and beneficiaries of the retirement savings account [74]. Ahmad [75] suggested some fundamental factors that could enhance efficient implementation of the contributory pension scheme in Nigeria. These are: Intensified Public Education & Enlightenment; Strong Support from and collaboration with stakeholders especially social; Consistent support and strong political will from the executive and legislative arms of government; Consistently and religiously compliance to the obligation of remitting obligation the pensions fund contribution by the Government; Gradual adoption of the new scheme by other tiers of government especially state government; Major corporations and institutions have bought idea of the new scheme; Consistent macroeconomic stability to downtrend in inflation; and Development of comprehensive accounting standards for retirement benefits

Chile

As far back as 1920s, Chile began its implementation of a social security which was basically meant to provide income for pensioners. At this period, the social security system was not totally pay-as-you-go, as contributions were made by workers which were often beyond pension payments since it was based on collective capitalisation of funds. The challenge with this system was that the accumulated funds were badly managed, thus creating problem of sustaining it.

The Chilean Pension Reform was initiated in late 1980 and implemented in early 1981. Before the introduction of the Contributory Pension Scheme in Chile, there were series of policy initiatives between 1970 and 1980. During these periods Pay-As-You-Go was adopted by the government. This pension system was characterised by non-uniformity as it had over 180 regimes. Consequent upon this, total contribution by employers and employees in 1973 varied between 16 per cent and 26 per cent of wages, depending on the type of occupation [76]. According to Ogwumike [77] these differences created large differences in retirement benefits in which some workers could retire with large pension benefits at the age of 42 years while many blue collar

workers could not qualify for retirement benefit until the age of 65 years, and yet others could retire at 55 years old with a full pension.

Chile's traditional retirement system was again characterised by very high contribution rates. In 1973, for example, total contributions by employers and employees varied between 16 and 26 percent of wages, depending on the type of jobs the individual held. By 1980 total contributions had been reduced, on average, to an average of 19 percent of (taxable) wages [78]. Thus, Chile's traditional pension was hindered by inadequate number of contributors. Again, the old scheme had demographic trends that worked against it progressively. Rodriguez [76] posits that in 1955, the system had 12 active contributors per retiree but by 1979, it had reduced to 2.5 per cent contributors per retiree. Sierra Vasquez discovered in her work that administrative and equity problems affected the old scheme. Even when the system was progressive and respected the principle of vertical equity, it was widely seen as an unfair system. The reason for this social perception was that the system did not respect the horizontal equity principle: depending on whether the worker was a civil servant or a white or blue collar worker, the benefits received varied widely.

In 1979, there were 32 pension funds regarded as 'Cajas' in existence. The system was then based on pay-as-you-go (Defined Benefits). The system was associated with public finances through portfolio management. According to Sebastian [79] by 1980, the system was running deficit equal to 2.7 per cent of the Chilean gross Domestic Product and the discounted present value of the system's contingent liabilities exceeded the Gross Domestic Product. The deficit put increasing and unbearable stress and challenges on the system; a development which led to serious demand on the part of the citizens and government for pension reform in 1981. OECD [80] concluded that the unfairness of the system, the fiscal consequences of the highly inefficient management of the funds, and the desire to reduce the role of the government in economic affairs, moved the government to introduce reforms in 1981. Law no. 3.500, approved in November 1980, created a new pension system based on individual capital accounts managed by private institutions. Labor force entrants after 1980 were required to affiliate to the new system. Acuna and Iglesias discovered that by the end of 1983, seventy-seven percent of workers from the old system had switched to the new one. Joubert and Todd [81] pointed out that under the proposed plans and also under the current Chilean system, the government serves as a last resort guarantor, supplementing pension income if pension accumulations are insufficient, either due to low income or unfavourable investment returns. Fajnzylber, Herrera, and Rofman [82] in their studies asserted that the scheme was essentially maintained in its original form but significant improvements are introduced to increase the coverage of the poverty prevention pillar, to improve gender equality in the pension system, to intensify the scope of competition in the AFP industry, and to introduce a more flexible investment regime for the AFPs.

The AFP Pension system is a savings program based on defined-contribution individual accounts. The programme is mandatory for workers that received monthly salary and voluntary for the private business owners. Those workers that joined this scheme were expected to pay a 10 percent contribution of their monthly income into a tax-deferred pension account, which is for the most part cannot be accessed until after they have retired. Affiliated individuals only have the opportunity of accessing their pension benefits at the age of 65 years (if they are men), while 60 years (for

women). The fundamental features of this scheme are that those under the scheme can only make three withdrawals, which include Programmed Withdrawals (Retiro Programado), or purchase an annuity from an insurance company (Renta Vitalicia) or combine the three a specific period of time and a deferred lifetime annuity. The law allows individuals to retire at early age if they have adequate savings to sustain them after retirement which must not be less than 110 percent of guaranteed by the Chilean government.

It is essential to say that the fundamental objective of all the pension reforms that have swept across Latin America over the last decade has been to solve or to avoid fundamental financial imbalances. Replacing the conventional public pay-as-you-go defined benefit system (PAYG-DB) with private fully funded defined contribution schemes (FF-DC) appeared as a radical yet definite solution to actuarial disequilibria that otherwise would have required an unbearable increase in contribution rates, a reduction in benefits, or a growing drain on scarce public resources. According to Piliera one of the objectives of the Chilean pension reform was to increase the real value of pensions, especially for the poorer groups in the country.

Chile was the first country in the globe to adopt the defined contributory pension scheme. The ability of the country in managing the defined contribution scheme fundamentally orchestrated the adoption of this new innovation by some countries. Kritzer [83] posits that in 1981, Chile introduced a new system of privately managed individual accounts, also called capitalization, replacing its public pay-as-you-go pension system (PAYG). Chile's privately managed pension system has inspired reform in many other countries and is considered by some as a possible prototype for reform in the United States and elsewhere [28,84,85]. Since 1990, 10 other countries in the region have adopted some form of what has become known as the "Chilean model": Argentina [82] Bolivia, Colombia, Costa Rica, Dominican Republic, El Salvador, Mexico (1997), Panama (2008), Peru (1993), and Uruguay (1996). Barr and Diamond [38] says in Central and Eastern Europe, funded individual accounts were introduced in Hungary (1998), Poland (1999), Latvia (2001), Bulgaria (2002), Estonia (2002), Lithuania (2004), Slovakia (2005) and Romania (2008). Funded individual accounts were also introduced in China (1998) and Hong Kong (2000).

In March 2006, newly elected President Michelle Bachelet appointed a presidential committee of 15 professionals, experts in the different areas related to the pension system, to draw a report with reform recommendations for the pension system. The 2008 reform replaces these programs with a unique scheme that guarantees that all individuals in the 60% less affluent fraction of the population will have a guaranteed basic pension, regardless of their contribution history. This new program provides old age and disability subsidies, financed by general revenues of the State [82].

The objectives of the 2008 Chile's reforms are to Berstein et al. [86] improve quality of coverage through the voluntary pillar; Encourage gender fairness in the pension system; Increase competition and efficiency in the AFP Industry; Optimize the risk/return ratio of pension savings; Improve the quality of benefits by solving situations of unfairness; Enhance participation, information and education; Facilitate institutional structure of pensions.

The 2008 reforms enacted in Chile were justified by similar concerns about the unsatisfactory performance of privatized pension systems in terms of coverage, equity and efficiency. Chile maintained private pension accounts and the defined-contribution

(DC) approach and strengthened mainly the non-contributory poverty reduction pillar. Although the 2008 reform did not change the basic structure of the pension system, which is still based on IFF accounts managed by private companies; it was the first more substantive modification to the model that had guided pension reform in Latin America and beyond [87].

In 2015, a commission known as Bravo Commission consisting of both domestic and foreign experts discovered the lacuna identified in the 2008 pension reforms. One of the gaps was the rate of 10 per cent contribution considered to be extremely. Secondly, the period prescribed for contribution was very not adequate. Thirdly, there was insufficient coverage of workers meant to operate under the system. The fourth gap was the exorbitant administrative costs associated with the scheme [88]. The solidarity pillar does not provide adequate minimum pensions, since levels are only 40 percent of the minimum wage and just above the poverty line [89].

COMPARATIVE EVALUATION OF THE ECONOMIC IMPLICATION OF THE DEFINED CONTRIBUTORY SCHEME IN NIGERIA AND CHILE

A well defined pension scheme helps to spread the cost of benefits evenly overtime, thus eliminating the vagaries in economic fortunes [90]. The creation of a fully funded, privately managed pension system may accelerate the process of financial market development, thereby improving growth and welfare [18]. Pension design affects the labour market, economic growth, the distribution of risk, and the distribution of income, including effects by gender and generation [28,29]. The goal of pension plan investment is to achieve a long-term rate of return that can generate sufficient investment income. This rate of return should be at least equal to the assumed rate of return used to discount future pension benefits. The fundamental principle of investment is the tradeoff between return and risk (Peng). The presence of big institutional investors may lead to better governance of firms by reducing free-riding incentives, which in turn improves these firms' efficiency and hence may lead to higher growth.

The development of the pension reform scheme led to the investment of significant proportion of the Chile's portfolio in fixed income securities; it also led to significant growth of insurance company reserves [91]. This is made possible through Chile's financial regulations which allow for more flexibility and greater participation of equity instruments in investment funds, in hedging instruments, asset backed securities and foreign instruments, with a maximum limit for foreign investments in 2008 as 45% of the portfolio [92].

A long period of strong economic growth has improved the well-being of Chileans and reduced poverty dramatically [93]. In fact, Chile has been ranked as a high-income economy by the World Bank and is considered as South America's most stable and prosperous nation due to her effective utilisation of pension funds in the economy. The gross domestic product of Chile expanded 4.2% year-on-year in the first quarter of 2018, quickening from a 3.3% advance in the previous period and slightly above the market expectations of a 4.0% growth. It was the fastest expansion since the third quarter of 2013, as household spending, fixed investment and exports rose significantly. Among economic activities, the mining sector was the main contributor to growth [94].

In Nigeria, the investment of pension funds also made a positive impact on her economy. For instance, Nigeria, as at December 2017,

the Net Assets Value of Pension Assets under the Contributory Pension Scheme was N7.5 trillion. This happened against a background of Federal government budgetary pension deficit estimated at N2 trillion as at June 2004, when the Contributory Pension Scheme took off and a non-existing industry before the CPS took off, is a huge achievement. Of the N7.5 trillion Net Assets Value, 70.42% was invested in FGN Securities, 10.33% in Ordinary shares, 9.08% in local money market securities, 2.03% in State Governments securities, 271% in Real Estate properties. The fund was also invested in Supra National Bonds, Mutual Funds, Specialised Funds (Infrastructure and Private Equity) etc [95-102].

COMPARATIVE EVALUATION OF THE SOCIAL IMPLICATION OF THE DEFINED CONTRIBUTORY PENSION SCHEME IN NIGERIA AND CHILE

Social development is about improving the well-being of every individual in society so they can reach their full potential. Social development theory attempts to explain qualitative changes in the structure and framework of society that help the society to better realize aims and objectives. Social development means investing in people. Chile has been able to invest in social projects as a way of transforming the society. The improvement in the economy following well established pension resulted to this.

Chile had built one of the most comprehensive social welfare systems in the world, with over 50 separate agencies participating in programs (nations encyclopedia). The adoption of DCPS in Chile resulted to the establishment of new infrastructure fund geared towards securing private capital. Chile has a successful record of collaborating with the private sector in developing and managing transportation projects via Private-Public-Partnerships (PPPs).

In Nigeria, the pension has made provision for social security for the retirees at old age. With enough fund for investment in stocks, the PFAs have been able to generate high returns from their business transactions. However, the role of promoting social development through infrastructural projects has been handled by the Government at different levels.

DISCUSSION AND CONCLUSION

The idea of adopting a social security and pension reforms that would improve the lot of the workers is now going on across the global community. Apart from the intention to take care of the retirees, the desire of political leaders to improve on their economic development also motivated governments in the various countries to shift from the defined benefit to defined contribution plans. Pension system reform has become one of the most important economic and political issues in recent years. The Nigerian pension system like some of the countries across the globe has witnessed a lot of challenges and reforms before the recent adoption of the defined contributory plans. The Nigerian government took after the Chilean pension system to enhance a transformation in this area. Chile, after some trials in the course of salvaging her pension system over the years, eventually succeeded in maintaining a successful defined contributory scheme.

It is however important to say that one of the major challenges experienced in the course of the transition from defined benefits to defined contributory plans was the huge transition costs. The cost in Nigeria and Chile deferred greatly depending on the amount

of accrued liability transferred from the old scheme to the new pension plan. This challenge emanated from those that were covered under the old scheme but owed and have to be remitted by the Government following the shift to new scheme. Aside from this, the huge amount of contribution made every month to fund the scheme by the government in addition to the wage bill payable to employees has further increased the financial burden experienced from the adoption of the new scheme.

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