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Contributory Pension Fund Assets and Economic Performance of Nigeria

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Abstract

This study examined contributory pension fund assets on economic performance of Nigeria, specifically, to determine the impact of pension fund assets on the real capital market capitalization in Nigeria. The proxies for measuring pension fund assets included ordinary shares, government securities, corporate debt securities, money market instruments, real estate property and other securities. To achieve the stated objectives, the study adopted the exploratory research design and employed the ordinary least square (OLS) estimation technique within the modelling framework of autoregressive distributive lag (ARDL) analytical methods in testing and in the estimation of the relevant equations. The findings from the analyses revealed that the relationship between pension fund assets and real capital market capitalization in Nigeria was found to be positive and significant in the long run as well as in the short-run. In conclusion, contributory pension fund asset has effective and efficient capacity in boosting economic performance (capital market capitalization) in Nigeria. Based on the findings from this study, there should be more investment of pension fund in ordinary shares, government securities, money market instruments and other forms of assets in order to boost credit to core private sector in Nigeria.

Keywords: pension funds, financial intermediation, credit to private sector, capital market capitalization, money market instruments, corporate debt securities

1. Introduction

Within the range of physical possibility, employees who have been engaged in an establishment, company, ministries and have worked for some qualified numbers of years are entitled to from ten to forty years are entitled to payment of pension or gratuity. Pension is a system in which an employee pays a certain percentage of his monthly income into a pension scheme in his active service days. The monthly deductions then provide retirement income at retirement that is treated as earned income as it is exempted from taxation. In the opinion of Edogbanya (2013), pension is income paid to retired employee or dependent next of kin by the former employers or from other super-annuation scheme to which he had subscribed to. Pension scheme came into being in Nigeria during the Colonial Administration especially, the 1951 Sir Huge Macpherson Constitution.

However, the existing pension scheme in the public sector was non-contributory, Pay-As-You-Go (PAYG) Defined Benefit and was bedeviled with myriad of challenges which include: lack of records, poor funding, inefficient administration, outright fraudulent practices, inconsistent laws, criminal conversion of remittances and or allocations, inclusion of ghost workers and weakness to manage and implement budgetary provisions. This litany of issues became the burden of pension scheme, from which arose high unfunded pension indebtedness. This is why Moddibo (2007), is of the view that there exist an estimated N2 trillion national pension deficit, and 216,000 retirees in the nation's Federal Government Civil Service owed a whooping sum of N56 billion pension benefits in 2002. From the foregoing, the pre-2004 pension reforms which was characterized with the obvious weaknesses and shortcomings which negatively impacted on retirement benefits payment in Nigeria was replaced with/by the pension Reform Act (PRA) on 25th June, 2004 (as revised in 2014). The PRA

2004 is a multi-faceted pension scheme adopted from the Pension Scheme of Chile in 1981 (Orifowomo, 2006). The necessity for the PRA 2004 in the country was predicated on the desirable properties of the Chilean model of making available the much needed long-term finances to boost the financial markets, stimulate growth of the economy, and address the menace of increasing pension indebtedness, unfunded entitlements and accelerating the degree of trust on government economic reform programme.

By pooling huge savings, pension funds have assumed centripetal position in domestic economic performance equation. Chan-Lau (2004) was of the view that for efficient functioning of pension, financial instruments and investment plan of action are more pertinent than the ecosystem of either the financial markets (their expansion, depth and adaptation) or the financial systems (fund managers and life assurers, etc). According to Walker and Fernando (2002), pension reform may increase the rate of financial intermediation through may ways, for example, there are several accompanying situations that may strengthen or reduce the positive impact on financial system growth. Consequently, through the important functions carried out, this would be made feasible by mobilization of savings that heightens economic growth, development of financial markets, substantial lowering of poverty at old age, adequate provision of long-term investment funds through reduced interest rate.

The contributory pension fund has amassed huge quantity of assets in the previous years, and with the increasing aging population and less reliance on pay-as-you-go pensions, thus, the pension fund assets are kept aside from the onset to meet future pension liabilities and be invested in securities and stocks from which the returns accrued to the retirees and the overall economic performance enhanced. As at October 2020, the National Pension Commission (Pencom) said that the nation's pension assets have risen to N10.57 trillion as at April, 2020 from N9.23 trillion recorded in 2019 (PenCom, 2020). While there is substantial amounts of pension fund assets in Nigeria, there was strong demand for effective intermediation function so that the investments of pension assets can have effective impact on economic performance (credit to core private sector, development of the capital market, economic growth, and so on) in Nigeria in particular.

Empirically, Henshaw (2012) argued that pension funds investment through effective intermediation could provide the much needed long-term funds for socio-economic growth of the country. He asserted that financial intermediation is key in promoting economic growth in that it serves as a channel for transferring funds to the deficit economic unit from excesses in the surplus economic unit, often, through mobilizing funds and enhancing efficient movement of funds into the real manufacturing sector of the economy. In addition, it also creates changes as the majority of savers and investor portfolio, making available enough resources in the system as may be needed, and the reduction of risk in the banking system through risk sharing and pooling, and diversification techniques. In a broader perspective, pension funds' important function in the financial sector is far more-wider than the areas covered by the traditional theory of intermediation. Their operations amongst other things include: mobilizing savings, securities market investments, paying annuities, other financial assets, providing insurance services, cross border investors and owners of companies. According to Allen and Santomero (1998), within the framework of the theory of intermediation, there is a suitable conceptual structure for examining the pivotal function of pension funds as financial intermediaries and the stimulus it gives to economic performance, having in view the general role of the financial system.

Therefore, in an attempt to situate the justification from contributory pension fund assets to economic performance, Walker and Lefort (2002), argued this nexus from three economic phenomenal points of view. They summed up these points of view into processes that are influenced by the aggregation of pension funds, simultaneous situations to pension reform processes and the effect on economic performance. Despite the repealed Pension Act in 2014, the scope of investment remains quite limited and highly restricted by the commission, hence, the expected impact of the contributory pension fund assets on economic performance is a critical concern that must be empirically examined. It is against this background that this research is being conducted to examining theoretically and empirically, the impact of contributory pension assets and economic performance in Nigeria. Therefore, the main objective of this study was to specifically examine the impact of contributory pension assets on the real capital market capitalization of Nigeria.

2. Theory of Financial Intermediation

The theory of financial intermediation was originally postulated by Goldsmith in 1969, who opined that financial institution plays a central role in the development of an economic, supporting economic growth differences amongst nations to the quality and quantity of services offered by financial institutions. He further noted the direct nexus between financial development and the real per capita gross national product level to the real effect that financial development has on motivating more effective application of the capital stock. More so, the growth path has signal impacts on the financial markets by providing motivation for increase development of the financial system. The theory of intermediation as it relates to finance was further formalized and made acceptable in the works of Shaw (1973) and Mckinnon (1973).

The rapid growth of pension funds globally, and the encouragement they are furnishing to the growth of

economic activities, indicates that their operations as financial intermediaries deserve tremendous focus. Consequently, monies are intermediated by pension funds into a diversity of financial assets, such as real estate, government bonds, corporate equities, corporate debt, foreign assets holding, securitized loans, deposits and instruments of money market as classes of liquidity. In addition, some distinctive features of pension funds that are characteristics of a primary corporate investors consist of risk pooling for smaller investors, furnish a direct holdings good trade-off of return and risk; an inducement on diversification, similarly by holding a wider array of domestic assets and more so by external investment; an option for liquidity, and thus, for a capital market liquid and big assets; capacity to take in and produce information, more qualitative to that of capital market individual investors. Therefore, different from bank credit, pension funds depend on general information against private information, which connect seriously to the appetite for availability of cash, big size and hence economies of scale that produces reduced investors' average costs.

Basically, pension funds growing function in the financial sector becomes much wider than the issues canvassed by the known hypothesis of theory of intermediation. There, it was raised that their operations encompass amongst others collecting savings, investing in securities and other financial instruments, producing kinds of insurance, working as security market agents, cross border investors and proprietors of companies. This theory is chosen to determine how the investment structure and administration of greater magnitude of pension funds contribution and the indivisible assets can contribute to economic growth and development. The theory of financial intermediation was adopted in this study to determine if the activities of pension fund is working as agent economic growth by boosting the roles of the financial system more effectively in funding supply more than the alternatives.

2.1 Conceptual framework

Contributory pension fund assets can have profound effect on the economy by creating of savings that translates to capital aggregation and thus, induces investment and shifting of funds in favour of future assets that could have positive effect on economic activities. The move to future assets occasioned by pension fund assets seems to lower the cost of capital and cause the supply of equity shares and long-term debt funding to enterprises, and thus enhance economic performance. Contributory pension finance scheme is likely to trigger higher need for fresh investment openings, provoke innovation and growth of fresh long-term instruments, improved market honesty/openness corporate administration, strengthening of new rules and monitoring of the market and its effectiveness, generation of domestic institutional fund users with future attention, average stock market and price fluctuation and initiate the modernization of capital market facilities such as clearing and liquidation.

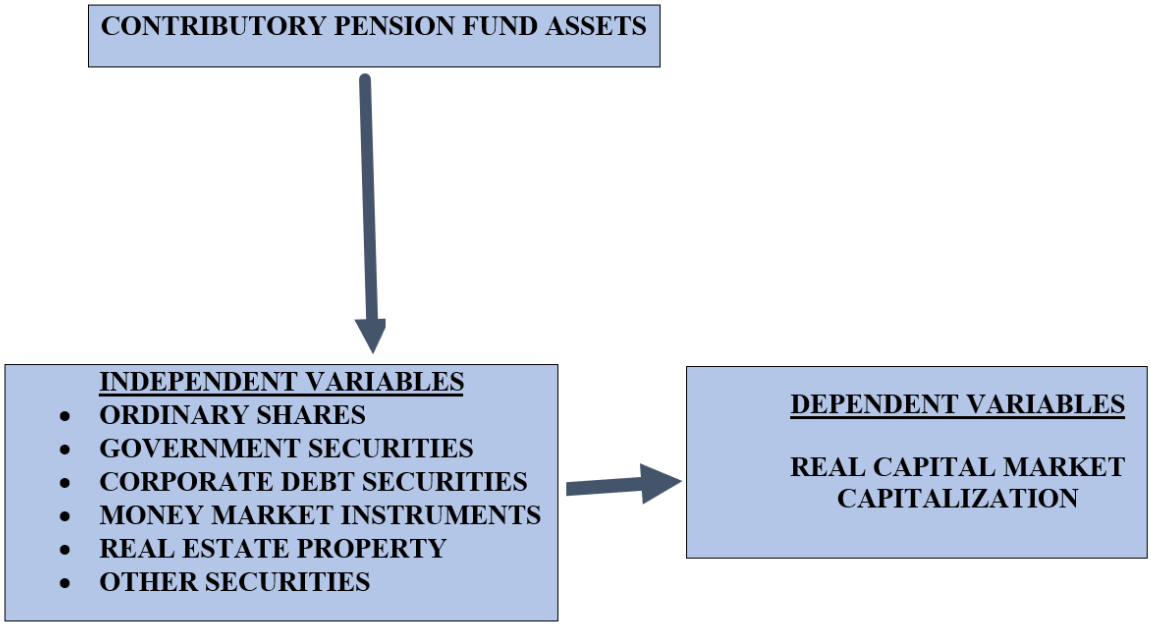

Figure 1. Conceptual framework

Sources: Author's Compilation

While the is substantial amounts of pension funds in Nigeria, there are strong evidences on how the investments of pension fund assets would engender financial deepening, economic growth and development, and capital market development in particular. Conceptually, the contributory pension fund asset has the ability of gathering savings capable of facilitating the desired performance position of economy. The contributory pension system is anticipated to gather savings for enhancing the growth and development of the financial market and economy as a consequence. It is hoped that pension fund assets should have far reaching effective on real capital market capitalization, in that, as the pension fund improves, it results to capital creation, bringing about public and private sector investment, infrastructural development, real sector financing, financial intermediation and risk management. This is manifested in the rise in the scale of contributions of pension funds to the development of both the informal and formal sectors.

2.2 Contributory Pension System in Nigeria: Features and Safeguards

The contributory pension scheme is anticipated to have positive impact on employee dedication and behavior as they move towards disengagement in the civil service in Nigeria, as well as behavior tilted to corruption mostly in the public service. Therefore, the doubt of collecting gratuity and pension after disengagement seriously account for increased frequency of labour turnover rate in the civil service. The World Health Organization (WHO) in 2007 posited that, inadequate emolument, delay in releasing fringe entitlements and deficient condition of service are the factors that largely account for the brain drain in the medical sector from Nigeria to other foreign lands such as the United States of America, Canada and others in search of greener pastures. There are identifiable characteristics that account for the distinctiveness of the scheme.

Retirement savings account (RSA): The provision of Section 8(1) of the Act stipulates that each employee shall operate a personal account with any PFA of her/his selection. The account remains exclusively with the worker and is not affected by vicissitudes in employment. The account is intended to collect remuneration from the employee and his employer every month. The contribution is meant to be invested in a specified investment window. For safety concerns, the PFAs are permitted to plough 75 percent of financial assets into Federal Government Bonds while the remaining 25 percent assets could possibly be channeled into investment in the stock exchange and others. Pension fund administrators (PFAs): The Act specifies for PFAs licensing whose responsibility is to operate workers' retirement accounts, invest and administer the finances in designated income generating assets and other options which could be decided by the Regulatory body, National Pension Commission (PENCOM).

Pension fund custodians (PFCs): The legislative enactment specifies for the PFAs licensing in order to preserve all assets of the pension fund in a secured environment. This means that every monthly collections from each worker are remitted to a Pension Fund Custodian, who in turn also on receiving the deductions, without failing, directs the PFA to enter same into the account of the worker(s) with the sum of complete contributions thus transferred. Clearly, the individual in custody of the assets (PFC) is not the same as the individual who executes the investment (PFA). The Custodian will carry out financial dealings and undertake operations concerning the management of pension fund investments on directives from the PFA. Due to the huge sum of assets being managed, the licensed Pension Fund Custodian, as an authorized financial institution and a public liability company is mandated to possess a capital base not less than N5,000,000,000 unaffected by losses. The National Pension Commission (PENCOM): To provide for efficient management of pension issues in Nigeria, the law put in place a regulatory body, (PENCOM) to monitor and supervise the activities. The commission is to ensure that collection and transfers of contributions are carried out immediately and pensioners are remunerated forthwith without any hitch. Also, the body will be responsible for the protection of funds by releasing directives for registration, approving, standardizing and watching the investment attitude of PFAs. It is the detective of the programme who has to act in good faith for the wellbeing of parties.

Transition gap: Retirement benefit bond redemption fund: In transiting to the current new programme gives rise to a financing hiatus for employees who have earned their pension privileges in the previous pension programme. The retirement allowance bonds would be given to employees, the quality that will be at par to the earned pension privileges from the time when the contributory scheme came into existence. The bonds are recoverable at the time of disengagement by every employee. The Federal Government pays five percent of its total salaries every month in the civil service and the Nation's Capital Territory into the account to pensioners and issued with retirement benefit bond. The fund becomes dysfunctional when all affiliates in the old scheme have had their bonds redeemed.

2.3 Contributory Pension and Capital Market Development

According to Diamond (1996), one benefit of reforming pension funds is its positive impact on the capital market development. More often than not, the lead-in of privatized system of pension usually induces an aggregation of finances. With finance accumulation, the demand for management of finance takes center stage. The financial market agents, then react by bringing in varied financial products that takes care of the interest of

financial product consumers. Thus, both the capital and money market stocks/instruments are enhanced. Over time, the consequent growth of fund infrastructure changes into fund market growth, particularly the capital market segment. It is more so held that investment is a complex work that demands advanced training, skills, capability, sense-experience and decision making strengthened by wide and steady research. The application of such magnitude of managerial expertise should culminate in qualitative returns higher than the intermediate and only whether the necessary alternatives are selected from the lot of ultimate investment alternatives. The capital market provides different types of those alternatives. As a central mover of the capital market growth, pension funds is a predominant agency investor. Thus, Howell (1958) has long ago recognized its all-embracing effect, when he asserted that pension financing have taken the financial lead in contemporary capital market. In his opinion, Balogun (2006) affirmed that PRA in the country was about to raise more than N900b long term yearly investment fund. In his justification, a significant part of pension fund can easily be accessed capital market trading.

In evaluating the Chilean model, Ogwumike (2006), justified the position that capital market grew tremendously in buoyancy, depth and size. In addition, postulations were made that stock dealings rose faster; stock market asset verification became bigger, while the value of asset assumed a growth level averaging at 56 percent. The accumulative effect of the new pension fund (contributory pension) on capital market growth, as shown in Nigeria situation, is the poignancy of the financial market. This financial poignancy is taken to connote a rise in the availability of financial resources and, sequel to this, the totality of all the efforts of financial resources determines the level of financial poignancy (Asekunowo, 2010). Furthermore, Asekunowo (2010), viewed that institutional fund users, particularly mutual funds, pension funds and assurance enterprises have improved their function as savings collectors over a couple of years ago. It finalizes by justifying that the move could seemingly advance as the growth in pensions grow and the growth in the scheme savings supports the effective functionality of the capital market. The huge savings pool in the custody of pension funds account has to be channeled into ventures providing substantial profit so that the outstanding pension debt can be settled as the need arises. To achieve this, a more robust financial intermediation system that assembles the seekers and givers units of the Exchange is specified. This associated union of deficit and surplus units of long term finances usually led to financial penetration of the system. Unequivocally, this leads to capital market growth.

2.4 Empirical Review

Akpan and Ukpong (2014) studied the challenge of pension management and capital generation in Nigeria using quality review. Having capital formation as the dependent variable and total investment, total contributions and funds unit price as the independent variables, the study found that, pension management and capital generation in Nigeria, in as much as it is channeled into performance businesses has the potential of rejuvenating the system into an industrialized economy. Odo and Chinedu (2016) examined contributory pension programme and the growth of the Nigerian financial system using qualitative review and reported that, provided that its actual performance would engender collection of a reserve of liquid finances, simply observing how funds planted have affected strongly on the capital and money segments of the market. Fresh funding outlets were generated to accommodate the funds growth. This has accounted for the growth of the capital segment of the market, incorporating the life assurance unit of the economy. It was then noticed that its performance has generated a remarkable situation in which currently pension funds are estimated for 8% stock and 30% bond capitalization of the market relatively.

Zubair (2016) investigated the effect of pension fund investments on the Nigerian capital market implementation and adopted the loanable fund theory as the theoretical framework for the study. Applying the regression technique of autoregressive integrated moving average (ARIMA), the dependent variables were total market capitalization (MCAP) and total value of stock traded (VTRD) while real GDPP per capita, inflation rate, interest rate and total pension fund assets are the independent variables. The study found that pension funds investment has no positive effects on the performance of the Nigerian capital market. The study therefore infers that pension funds positively affected the performance of capital markets in Nigeria during the period under review, especially in terms of market depth (total debt and equity capitalization). Moreover, macroeconomic indicators and pension funds investment has important joint effects on the performance of the Nigerian capital market. The study infers that the interaction of investments and macroeconomic indicators has significant influence on the performance of the Nigerian stock market during the period under review, especially the GDP per capita. These findings that the goal of pension industry reforms is not likely going to be achieved if the monetary policy committee did not stabilize the macroeconomic indicators in Nigeria.

Using the pearson product moment correlation coefficient as its analytical technique, Madukwe (2015) evaluated the effects of contributory retirement plan on the Nigerian capital market. The capitalization of the capital market was used as the dependent variable and domestic ordinary share of the contributory retirement scheme and National contributory retirement scheme (AUM) as independent variables. The study unfolded that National

contributory retirement scheme (AUM) has no strong and important effect on market capitalization (MC) in Nigeria. Local ordinary share (LOS) of the contributory retirement plan in Nigeria has a positive relationship, but has no significant relationship with market capitalization (MC) in Nigeria. Pension plan on market capitalization in Nigeria could be as a result of the fact that the large proportions of the assets are held on government securities, which affect the retirement finance investment in capital market in Nigeria. Meng and Pfau (2010) examined the function of retirement fund on the growth of the capital markets between OECD applying panel data research to conduct the least square dummy variable (LSDVC) approximation in a panel data research. Generally, the research divulged that the positive effect of retirement fund on capital market varies based on the strength of financial growth. Nations with advanced financial markets (properly administered investment plans in the shares and bond markets) have positive increase in their retirement funds than others with less financial growth.

3. Research Methodology

To evaluate the impact of contributory pension fund assets on the performance of the Nigerian economy, a number of variables have been taken into consideration. The dependent variable was proxied by real capital market capitalization (RMCAP), while the independent variables which were contributory pension fund assets shall be proxied by ordinary shares (ORDS), government securities (GOVS), corporate debt securities (COPDS), money market securities (MMI), real estate property (REP) and other securities (OTS). The sources through which data were gotten were from annual reports of PenCom, Central Bank of Nigeria statistical bulletins and World Bank database. The study utilized quarterly time series data from 2011-2021. One of the features of the data in developing nations is the defects in their database and therefore generating disbelief on their usefulness for predictions or influence to policy definition (Akpan, Riman & Mboto, 2011) and Nigerian data has not been bereft of this deficiency. This research was limited to the period (2011Q1 – 2021Q2) in which data were selected for analysis. Furthermore, the study is also limited to proxies and measures adopted for the dependent and independent variables adopted of this study. The study shall take a cue from the model specified by Farayibi (2015) with some modifications. The proposed model for this study was as follows:

$$RMCAP = f(ORDS, GOVS, COPDS, MMI, REP, OTS) \quad 1$$

Where:

Real capital market capitalization (RMCAP)

Ordinary shares (ORDS)

Government securities (GOVS)

Corporate debt securities (COPDS)

Money market instruments (MMI)

Real estate property (REP)

Other securities (OTS)

$$\log RMCAP = \beta_0 + \beta_1 \log ORDS + \beta_2 \log GOVS + \beta_3 \log COPDS + \beta_4 \log MMI + \beta_5 \log REP + \beta_6 \log OTS + \mu t \quad 2$$

μt = Error term.

The contributory pension fund assets measures are theoretically expected to positively impacts on economic performance in Nigeria ($\beta 1$, β_2, β_3, β_4, β_5, $\beta_6 > 0$) because as the pension fund increases, positive economic performance would be enhanced. To emphasize the relationship amongst variables of interest, this study used a time series appraisal method. The research also carried out descriptive statistics of the data trend, variables stationarity test of unit root, traditionally, the augmented Dickey-Fuller (ADF) unit root test were employed. The autoregressive distributed lag (ARDL) method was applied in order to examine the contributory pension fund assets on economic performance in Nigeria. The unit root test was further employed in attempt to establish the non-stationarity or stationarity of the series under consideration. In order to do this, the ADF unit root examination was engaged as a preliminary test method. This critique produced empirical facts in respect of the asymmetric association between contributory pension fund assets and economic performance in Nigeria. The research designed the ARDL technique for appraisal as stated beneath:

$$\Delta LogMCAP_t = \alpha_0 + \sum_{k=1}^{n} \alpha_1 \Delta LogPVFC_t + \sum_{k=1}^{n} \alpha_2 \Delta LogPUFC_t + \sum_{k=1}^{n} \alpha_3 \Delta LogCPR_t + +p1$$

$$\Delta LogPVFC_{t-k} + p2 \Delta LogPUFC_{t-k} + p3 \Delta LogCPR_{t-k} et \quad 3.5$$

4. Data Analysis and Discussion of Findings

Table 1. Descriptive statistics test

	RMCAP	ORDS	GOVS	COPDS	MMI	REP	OTS
Mean	288.9878	528.5905	2992.507	159.5552	489.2438	187.6272	31.74558
Median	242.5321	590.9086	2706.328	82.80298	477.0482	207.4066	30.88177
Maximum	561.0289	842.1319	6659.322	505.8205	1047.550	279.1931	214.2146
Minimum	113.1357	36.56050	276.9067	0.992700	179.3594	0.378000	1.633100
Std. Dev.	130.8163	214.6804	1985.313	144.4774	181.8019	67.69431	34.75058
Skewness	0.664697	-0.733474	0.357624	1.038464	0.871417	-1.876973	3.500410
Kurtosis	2.232664	2.827770	1.932209	2.911708	4.178854	5.993920	19.21742
Jarque-Bera	4.123163	3.817798	2.890574	7.562492	7.747538	40.34743	546.0281
Probability	0.127253	0.148244	0.235678	0.022794	0.020780	0.000000	0.000000
Sum	12137.49	22200.80	125685.3	6701.319	20548.24	7880.342	1333.314
Sum Sq. Dev.	701628.6	1889594.	1.620908	855823.0	1355129.	187883.3	49511.71
Observations	42	42	42	42	42	42	42

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics on the selected pension fund assets and economic performance measures in Nigeria captured in this study. The aim of the descriptive statistics was to reveal the trend behaviour of the dataset used over the course of time of this study. As depicted in the Table 1, the mean values of the variables were ₦288.98 billion real market capitalization (RMCAP); ₦528.59 million for ordinary shares (ORDS); ₦2992.50 million for government securities (GOVS); ₦159.55 million for corporate debt securities (COPDS); ₦489.24 million for money market instruments (MMI); ₦187.62 million for real estate property (REP); and ₦31.74 million for other securities (OTS). The standard deviation values of the variables were: ₦130.81 billion real market capitalization (RMCAP); ₦214.68 million for ordinary shares (ORDS); ₦1985.31 million for government securities (GOVS); ₦144.47 million for corporate debt securities (COPDS); ₦181.80 million for money market instruments (MMI); ₦67.69 million for real estate property (REP); and ₦34.75 million for other securities (OTS).

The maximum values of the variables were: ₦561.02 billion real market capitalization (RMCAP); ₦842.13 million for ordinary shares (ORDS); ₦6659.32 million for government securities (GOVS); ₦505.82 million for corporate debt securities (COPDS); ₦1047.55 million for money market instruments (MMI); ₦279.19 million for real estate property (REP); and ₦214.21 million for other securities (OTS). The minimum values of the variables were: ₦113.13 billion real market capitalization (RMCAP); ₦36.56 million for ordinary shares (ORDS); ₦276.90 million for government securities (GOVS); ₦0.99 million for corporate debt securities (COPDS); ₦179.35 million for money market instruments (MMI); ₦0.37 million for real estate property (REP); and ₦1.63 million for other securities (OTS). The descriptive statistics analysis further indicated that the measurement of skewness showed that variables such as COPDS, MMI, REP and OTS are rightly skewed (positively skewed) while variables such as RMCAP, ORDS and GOVS were skewed negatively. The kurtosis coefficient of the variables revealed that COPDS, MMI, REP and OTS were found to be peaked (3.00 and above) (Leptokurtic) relative to the normal distribution, while RMCAP, ORDS and GOVS were flat (platykurtic or below 3.000) relative to normal distribution. The Jarque-Bera (JB) values of 4.12, 3.81 and 2.89 for variables such as RMCAP, ORDS and GOVS respectively and their equivalent probability of greater than or equals to 0.05 per cent assumes the distribution is normal.

4.2 Augmented Dickey-Fuller (ADF) Unit Root Test

In order to establish whether the time series is stationary, the statistic values of the ADF must be found to higher than the Mackinnon critical value at one percent, five percent and ten percent level of significance. The outcome of the unit root test based on the ADF test is reported in Table 2. The outcome of the tests revealed that only ORDS, GOVS and REP were stationary at level. This is because the augmented Dickey-Fuller (ADF) test statistics values calculated in absolute term were greater than its respective tabulated value at conventional 5%

level of significance.

Table 2. Augmented Dickey-Fuller (ADF) test

Variable	Level	p-val at levels	1st Difference	p-values at 1st Difference	Remarks
RMCAP	-2.0639	0.2597	-4.8609	0.0003***	1(1)
ORDS	-4.6732	0.0005***	-	-	1(0)
GOVS	-3.3727	0.0180***	-	-	1(0)
COPDS	-2.4527	0.1343	-4.7544	0.0004***	1(1)
MMI	-1.9435	0.3098	-6.6633	0.0000***	1(1)
REP	-3.9525	0.0039***	-	-	1(0)
OTS	-1.5239	0.5114	-4.0661	0.0031***	1(1)
TEST OF CRITICAL VALUES:					
1%= -3.6055					
5%= -2.9369***					
10%= -2.6068					

4.3 Ardl Bound Testing Approach

The ARDL bounds test was employed in order to determine the existence of a long-run association between pension fund assets (ORDS, GOVS, COPDS, MMI, REP, OTS) and real capital market capitalization (RMCAP) in Nigeria. By employing margins on the long run coefficient approximations of pension fund assets proxies (ORDS, GOVS, COPDS, MMI, REP, OTS) and real capital market capitalization (RMCAP) in Nigeria, the tabulated Wald test upper bound and lower bound as shown in Table 3 are chosen based on a significant level of five per cent. Table 3 revealed that determinants (ORDS, GOVS, COPDS, MMI, REP, OTS) are co-integrated jointly with the real capital market capitalization (RMCAP) in Nigeria, hence, a long-run association is assumed. The Wald test (F-test) was to primarily establish the existence or otherwise of a joint significance of the coefficients of pension fund assets proxies (ORDS, GOVS, COPDS, MMI, REP, OTS) and real capital market capitalization (RMCAP) in Nigeria. The calculated F-statistic is 4.26 was found to be higher than corresponding the ARDL upper (3.28) and lower (2.27) critical bound values. By implication, the value is an indication of the presence of long run cointegration between pension fund assets (ORDS, GOVS, COPDS, MMI, REP, OTS) and real capital market capitalization (RMCAP) in Nigeria.

Table 3. ARDL F-bounds Wald test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.268565	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99
Actual Sample Size	38		Finite Sample: n=40	
		10%	2.218	3.314
		5%	2.618	3.863
		1%	3.505	5.121
			Finite Sample: n=35	
		10%	2.254	3.388

	5%	2.685	3.96
	1%	3.713	5.326

4.4 Ardl Cointegrating and Long Run Form

Table 4. ARDL long run form estimates

Dependent Variable: D(LRMCAP)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LORDS	-1.026111	0.625609	-1.640180	0.1763
LGOVS	2.576069	0.821804	3.134651	0.0350
LCOPDS	-2.213115	0.524447	-4.219900	0.0135
LMMI	1.148035	0.446575	2.570755	0.0619
LREP	3.254272	1.339654	2.429188	0.0720
LOTS	-0.457458	0.295850	-1.546251	0.1969
C	-20.15240	5.686818	-3.543705	0.0239
EC= LRMCAP - (-1.0261*LORDS + 2.5761*LGOVS -2.2131*LCOPDS + 1.1480*LMMI + 3.2543*LREP -0.4575*LOTS -20.1524)				

The results in Table 4 revealed that ORDS, GOVS, COPDS, MMI, REP, OTS have a joint significant positive effect on RMCAP in Nigeria in the long run. By this, an increase in ORDS, GOVS, COPDS, MMI, REP, OTS have a non-significant positive effect with changes in the RMCAP in Nigeria in the long run. Notwithstanding, real capital market capitalization in Nigeria will increase by 20.15 per cent as a result of the interaction within its pension fund assets in the long run, ceteris paribus. The ARDL long run estimates revealed that, all things being equal, a percentage increase in ordinary shares (ORDS) of pension fund assets will result in an increase in the RMCAP in Nigeria by 1.02 per cent but was insignificant statistically at five percent. Similarly, a percentage increase in corporate debt securities (COPDS) will results in an increase in RMCAP in Nigeria by 2.21 per cent and was found to be statistically significant in the long run at five percent significance level. Similarly, the ARDL long run estimates further showed that, a percentage variation in other forms of pension fund assets (OTS) resulted to an increase in real capital market capitalization (RMCAP) in Nigeria by 0.45 per cent but was statistically insignificant at 5 per cent significance level in the long run.

On the other hand, the long run ARDL approximations further showed that, a percentage variation in pension fund investment in government securities (GOVS) will not result to an improvement in real capital market capitalization (RMCAP) in Nigeria but was found to be statistically significant. Similarly, the ARDL long run coefficients further showed that, a percentage variation in pension fund investment in money market instruments (MMI) will not result to an increase in real capital market capitalization (RMCAP) in Nigeria and was found to be statistically significant. Lastly, the ARDL long run coefficients further revealed that, a percentage variation in pension fund investment in real estate property (REP) will not lead to an increase in real capital market capitalization (RMCAP) in Nigeria and was found to be insignificant statistically in the long run at five percent level of significance.

4.5 Ardl Short Run Dynamics Test

Given an intercept value of 28.16 as presented in Table 5, real capital market capitalization (RMCAP) in Nigeria will increase by a 28.26 per cent when all other variables (ORDS, GOVS, COPDS, MMI, REP, OTS) are held constant. The R^2 (R-squared) value of 0.9913, approximately 99.13 per cent revealed that the ARDL has a very high good fit. By this, the interactions of ORDS, GOVS, COPDS, MMI, REP, OTS is attributable the variation of about 99.13 per cent in RMCAP in Nigeria. In the same vein, the F-statistics value of 13.83 revealed that the overall model is statistically significant, implying that, there existed the presence of a joint significant association of ORDS, GOVS, COPDS, MMI, REP, OTS in describing the short-run variations in real capital market capitalization (RMCAP) in Nigeria.

Table 5. ARDL short run dynamic result

Dependent Variable: LRMCAP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LRMCAP(-1)	0.153895	0.413243	0.372409	0.7285
LRMCAP(-2)	-0.211166	0.297968	-0.708687	0.5176
LRMCAP(-3)	1.056408	0.375506	2.813293	0.0482
LRMCAP(-4)	-1.396908	0.590887	-2.364085	0.0773
LORDS	1.155266	0.966844	1.194884	0.2981
LORDS(-1)	-0.306357	0.734787	-0.416934	0.6981
LORDS(-2)	-1.589752	0.977172	-1.626891	0.1791
LORDS(-3)	-0.693424	0.599438	-1.156790	0.3117
LGOVS	-1.739514	2.271118	-0.765929	0.4864
LGOVS(-1)	-0.036578	1.466310	-0.024946	0.9813
LGOVS(-2)	1.635874	1.326500	1.233226	0.2850
LGOVS(-3)	3.217180	2.034504	1.581309	0.1890
LGOVS(-4)	0.523792	0.981001	0.533936	0.6217
LCOPDS	-1.082454	0.532802	-2.031625	0.1120
LCOPDS(-1)	-0.873066	0.370813	-2.354467	0.0781
LCOPDS(-2)	0.009992	0.482031	0.020728	0.9845
LCOPDS(-3)	-0.543796	0.530462	-1.025136	0.3632
LCOPDS(-4)	-0.604103	0.498814	-1.211077	0.2925
LMMI	-0.548943	0.659914	-0.831840	0.4523
LMMI(-1)	0.108110	0.486578	0.222184	0.8351
LMMI(-2)	0.398835	0.378092	1.054861	0.3510
LMMI(-3)	1.077815	0.710175	1.517676	0.2037
LMMI(-4)	0.568873	0.424571	1.339878	0.2513
LREP	3.620132	1.919207	1.886265	0.1323
LREP(-1)	0.450947	0.281598	1.601383	0.1845
LREP(-2)	0.364729	0.285371	1.278089	0.2703
LREP(-3)	0.211460	0.153323	1.379184	0.2399
LREP(-4)	-0.098541	0.110760	-0.889679	0.4239
LOTS	-0.085783	0.085055	-1.008559	0.3702
LOTS(-1)	-0.140808	0.114937	-1.225089	0.2877
LOTS(-2)	-0.146703	0.103693	-1.414786	0.2300
LOTS(-3)	-0.121677	0.083662	-1.454384	0.2195
LOTS(-4)	-0.144450	0.096767	-1.492762	0.2098
C	28.16844	9.423331	-2.989223	0.0404
R-squared	0.991317	Mean dependent var		5.631626
Adjusted R-squared	0.919680	S.D. dependent var		0.420647
S.E. of regression	0.119215	Akaike info criterion		-1.877596
Sum squared resid	0.056849	Schwarz criterion		-0.412387
Log likelihood	69.67433	Hannan-Quinn criter.		-1.356286
F-statistic	13.83803	Durbin-Watson stat		2.355195
Prob(F-statistic)	0.009954			

*Note: p-values and any subsequent tests do not account for model selection.

Examining further the short-run estimates, the ARDL model showed that variations in the current period of ordinary shares (ORDS) had a positive significant impact; while the previous lagged period, lag two periods and lag three periods of ordinary shares (ORDS) had an insignificant positive effect on RMCAP in Nigeria. The insinuation is that, a percentage decrease/increase in ordinary shares of pension fund assets resulted to a corresponding decrease/increase in RMCAP in Nigeria. The examination of the short run estimates of the ARDL model further showed that changes in the current period and lag one period of government securities (GOVS) had an insignificant negative effect, while the lag two periods, lag three periods and previous four lagged periods of government securities (GOVS) had a positive but insignificant impact on real capital market capitalization (RMCAP) in Nigeria. The insinuation is that, a percentage decrease/increase in government securities of pension fund assets resulted to a corresponding decrease/increase in RMCAP in Nigeria. Further assessment of the short-run estimates of the ARDL model showed that changes in lag two periods of corporate debt securities (COPDS) had a positive but insignificant impact; while variations in the current period, lag one period, lag three periods and lag four periods of corporate debt securities (COPDS) had an insignificant negative impact on real capital market capitalization (RMCAP) in Nigeria. The insinuation is that, a percentage decrease/increase in corporate debt securities of pension fund assets resulted to a corresponding decrease/increase in real capital market capitalization in Nigeria.

The examination of the short-run estimates of the ARDL model further showed that variations in the current period of money market instruments (MMI) had an insignificant negative effect; while changes in lag one period, lag two periods, lag three periods and the previous four lagged periods of money market instruments (MMI) had a positive but insignificant impact on real capital market capitalization (RMCAP) in Nigeria. The insinuation is that, a percentage decrease/increase in money market instruments of pension fund assets resulted to a corresponding decrease/increase in real capital market capitalization in Nigeria. Further investigation of the short-run estimates of the ARDL model showed that changes in lag four periods of real estate property (REP) had an insignificant negative effect; while changes in the current period, lag one period, lag two periods and lag three periods of real estate property (REP) had a positive but insignificant impact on real capital market capitalization (RMCAP) in Nigeria. The insinuation is that, a percentage decrease/increase in real estate property of pension fund assets resulted to a corresponding decrease/increase in real capital market capitalization in Nigeria. Lastly, the short run estimates of the ARDL model further showed that changes in the current period, lag one period, changes in lag two periods, lag three periods and lag four periods of other forms of pension fund assets (OTS) had an insignificant negative impact on real capital market capitalization (RMCAP) in Nigeria. The insinuation is that, a percentage decrease/increase in other forms of pension fund assets resulted to an equivalent decrease/increase in real capital market capitalization in Nigeria in the short run.

4.6 Ardl Error Correction Test

The ECT factor as shown in Table 6 is statistically significant with the expected negative sign indicating the existence of both short run and long run equilibrium in the system. The ECT factor (CointEq(-1) is -1.39 implying that the previous disequilibrium in the system has been assumed to be corrected at an adjusted speed of 139 per cent annually. This is considered a very high speed of adjustment.

Table 6. ARDL short run error correction term (ECT) result

ARDL Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LRMCAP(-1))	0.551666	0.151825	3.633564	0.0221
D(LRMCAP(-2))	0.340500	0.136802	2.488996	0.0676
D(LRMCAP(-3))	1.396908	0.175593	7.955376	0.0014
D(LORDS)	1.155266	0.189672	6.090874	0.0037
D(LORDS(-1))	2.283176	0.329702	6.924977	0.0023
D(LORDS(-2))	0.693424	0.216196	3.207381	0.0327
D(LGOVS)	-1.739514	0.504390	-3.448751	0.0261
D(LGOVS(-1))	-5.376846	0.941504	-5.710910	0.0046
D(LGOVS(-2))	-3.740972	0.644885	-5.800993	0.0044
D(LGOVS(-3))	-0.523792	0.278693	-1.879457	0.1334

D(LCOPDS)	-1.082454	0.187760	-5.765102	0.0045
D(LCOPDS(-1))	1.137907	0.284244	4.003283	0.0161
D(LCOPDS(-2))	1.147899	0.263877	4.350122	0.0122
D(LCOPDS(-3))	0.604103	0.152633	3.957882	0.0167
D(LMMI)	-0.548943	0.147919	-3.711102	0.0206
D(LMMI(-1))	-2.045523	0.348333	-5.872319	0.0042
D(LMMI(-2))	-1.646688	0.296332	-5.556897	0.0051
D(LMMI(-3))	-0.568873	0.160471	-3.545028	0.0239
D(LREP)	3.620132	0.514505	7.036142	0.0022
D(LREP(-1))	-0.477648	0.105448	-4.529698	0.0106
D(LREP(-2))	-0.112919	0.065663	-1.719677	0.1606
D(LREP(-3))	0.098541	0.035399	2.783756	0.0496
D(LOTS)	-0.085783	0.024373	-3.519554	0.0245
D(LOTS(-1))	0.412830	0.061685	6.692554	0.0026
D(LOTS(-2))	0.266127	0.042927	6.199527	0.0034
D(LOTS(-3))	0.144450	0.024046	6.007158	0.0039
CointEq(-1)*	**-1.397771**	**0.197856**	**-7.064591**	**0.0021**

5. Discussion of Findings

The main study purpose was to evaluate the consequence of pension fund assets on economic performance of Nigeria. This was further broken into specific objectives and hypotheses of the study. In order to meet these objectives, the study conducted employed the ARDL model analysis. The objective was to examine the effect of pension fund assets on the real capital market capitalization of Nigeria. The ARDL short-run f-test was used to test the objective and hypothesis in order to ascertain the relationship between pension fund assets and real capital market capitalization in Nigeria. This was tested empirically to buttress the objective. The result showed that the pension fund asset significantly impacted real capital market capitalization in Nigeria. The implication is that pension fund assets investments have been properly utilized in productive and profitable investment ventures in the capital market. This finding agrees with Diamond (1996) who submitted from his findings that potentially, reform in pension significantly contribute and enhance capital market development. He maintained that the introduced pension privatized system forms naturally an accrual of funds needed by players in the financial market given the available variety of financial products. This in turn brings about the development of capital market instruments/securities and services which engenders capital market development. By this finding, the variety of options offered by capital market empowers pension fund as a key capital market development enhancer, being a foremost institutional stakeholder. In support of this finding, Balogun (2006) and Asekunowo (2010) pinpointed that over N900bn of pension funds have been generated annually in Nigeria and a substantive amount of this fund was traded in the capital market, notably, the Nigerian Stock Exchange. Such interaction between givers and seekers funds on a long term period consequently leads to financial deepening of the system and translates to capital market development. Similarly, Meng and Pfau (2010) supported this finding.

6. Conclusion

This research has divulged facts on the effect of pension fund assets on economic performance in Nigeria employing autoregressive distributive lag (ARDL) methodology. It is crystal from the study that increment in pension fund assets generated from the contributions from both informal and formal sectors in Nigeria strongly impacts on economic performance such as capital market development. This connotes that increment in pension contribution raises the reserve of investment finance, which improves capital sufficiency for industrial take-off and growth in national product. Albeit, the impact of the retirement fund assets on capital market capitalization was significantly positive in the short run. The research further concluded that in the long period, retirement fund assets variables such as ordinary shares, corporate debt securities and other forms of assets had positive effect on capital market capitalization while retirement fund assets variables such as real estate property, money market instruments and government securities had a negative effect on capital market capitalization as the case may be. Undauntedly, the new contributory pension scheme as revealed by extant literatures and the findings of this study has triggered the discharge of funds yet to be invested and the channeling of excess available cash into capital and money markets by instruments such as investment, bond, ordinary shares, profits etc. With sufficient

uncertainty and portfolio administration by retirement fund administrators and custodians, the contributory pension has been useful in efficient and effective capability in stimulating capital market capitalization in Nigeria.

7. Contribution to knowledge

The model of the study was successfully modified while able to modify the model, enlarge the extant literature and provided up-to-date data in order to aid researchers carry out related studies in the future. Conclusively, the study asserted that assets of the pension fund are not fully utilized in the productive sector to stimulate Nigerian economic growth and development. The study concludes that pension fund assets should be centered on investments that facilitates real sector growth in Nigeria.

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