

Effect of Contributory Pension Scheme on the Development of Nigerian Capital Market

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Abstract

The study examines the effect of contributory pension scheme on the development of Nigerian Capital Market. The variables which are used to determine the specific objectives are:; the Contributory Pension Scheme (Independent variable) proxied by Public Sector Pension Contribution Fund, and Private Sector Pension Contribution Fund as the main (focused) variables; and Inflation Rate and Interest Rate as Control Variables. Besides, Nigerian Capital Market Development (dependent variable) was proxied by Nigerian Market Capitalization. The study employed annual time series data spanning the years from 2004-2020. The study is based on the Ex-post facto research design. The target population of the study comprised of the National Pension Commission and all the Pension Fund Administrators (PFAs) in Nigeria between the years 2004–2020. Data were analyzed using the Auto-Regressive Distributed Lags and the Ordinary Least Square via the use of E-views 10. The study concludes that Public Sector Pension Fund has not contributed significantly to the development of the Capital Market in Nigeria, but Private Sector Pension Fund has contributed significantly to the development of the Capital Market in Nigeria. The study established that pension fund investment affects capital market development positively. It is recommended that there should be proper liberalization of public pension fund investment and monitoring of the management of pension assets invested in the capital market to improve market capitalization; and in the sense that the Private Sector Contribution Fund has had a significant effect on the Nigerian capital market development, there should be a generation of huge pool of long term investible funds, promotion of foreign direct investment, effective measures to reduce inflation rate, jobs creation, increase in return on investment, better and guaranteed retirement benefits.

Keywords: Contributory Pension Scheme, Nigerian Market Capitalization, Public Sector Contribution Fund, Private Sector Contribution Fund

INTRODUCTION

There is a growing global interest about public and private sector pensions. Interest, really, has shifted from the need for it to the issue of how to provide adequate funds to pay emerging pension benefits. This concern has been triggered, in part, by worldwide crisis in the management of public and private sectors pension system. This was the concern of Ellison (2011) when he commented that UK pension system has been sick for a long time. The crisis, too, has been brought about by several isolated factors namely, the escalating costs of government expenditure in other sectors, the growing proportion of old people in the global population, increase in life expectancy, impact of the recent global financial crisis (Alles, 2019) and, not the least, the issue of official corruption by those who manage pension and the decline in government revenues, as were the case in Nigeria (Oloja, 2019). The capital market, as part of the

financial market, plays a vital role in the economy, especially in developing countries that need large long-term loans to stimulate a large untapped real sector for economic growth. According to Owolabi and Adegbite (2018), the capital market is important for mobilizing various economies in the economy and channeling these funds to the right sectors, i.e. savings in profitable self-liquidating investments and market capitalization; and the capital market offers easy access to various forms of financial instruments that allow economic agents to pool assess and exchange risks over a given financial period. This is why Owolabi and Adegbite (2018) stated that as companies succeed, they must grow and develop to meet the needs of their customers, these customers show mixed interest in their product and may be looking for of ideas generated during the management of a business.

Already, in advanced countries, a widespread fear has been expressed that an increasing proportion of the elderly, combined with a decline in the workforce, will deteriorate economic development, leading to a lower Gross National Product (GNP) and per Capita GNP; it is feared that the development could lower net income for workers and the pensioners and ultimately undermine sustainability of the old age pension systems (Kune, 2018). Under these circumstances, pension funding based on pay-as-you-go system becomes burdensome and unsustainable. The factors highlighted above laid the foundation for the global pension crisis and the resulting popular demand for reform of the sector (World Bank, 1994). This study is motivated by the fact that; the nexus between pension fund investment and capital market development has been a subject of interest among researchers. It is often argued that the creation of funded pension plans has major long-term implications for the functioning and growth of the financial market. As noted by Tsado and Gunu (2019), the question of the links between pension fund investment and financial markets has two aspects. One concerns the preconditions in terms of financial sector development for the successful implementation of pension reform, while the other refers to the long-term impact of pension reform on the development of financial markets. The contributory pension scheme since its inception by the concerned entities and possible enforcement to make it operational in the economy witnessed serious setback due to unacceptable dynamism and non- conformity by various sectors; With the success recorded in the industry so far within the short- period of operation in the economy, cannot be compared with desire result pre-supposed to have been attained assuming all affected entities, individuals and states that are yet to enact a bye- law to back its operational and enforcement embrace the scheme. Therefore, the problem of enforcement of the enacted law/act becomes imperative as there is no strong task force or sanctions even though there are paper enacted sanctions for those individuals, entities and government parastatals that refused to embrace into the scheme; but there has been no significant implementation of the act on the affected. This nonchalant attitude on the part of the regulatory agency has really encourage most affected entities to evade or circumvent the scheme that could have serve as a pool of funds for long- term source of funds for capital market development, infrastructure development, provision of social amenities and other economic growth greed.

On the other hand, the quoted companies probably complied not because they really want to but as an operational requirement for them to remain in the floor of capital market, but what happen to unquoted companies in which most of them employ large active workforce of the population that have refused to embrace the Scheme. Most of them become compelled to comply because either they require a compliance certificate for contracts bidding, otherwise after then they discontinued to remit for the employees, thereby create unfunded accounts. The Pension Fund Administrators might follow up to recover the un-remitted sum; but they are not empowered by the law to compel the employer to pay or remit for the employees. Though, the new Act provides that such companies should be reported to the regulator in the event of non- remittance of pension contribution over a certain period of time (not specific) but most Pension Fund Administrators give a grace period of six (6) months of discontinuity. However, the basic question we should be asking is that, how many of these defaulters have been persecuted or tried in the law court? This reveals the lackadaisical attitude of the regulator in enforcing the provision of the Act.

Effect of contributory pension scheme on the Nigerian capital market has been a focus of a substantial amount of empirical research for many years. For instance, Becceea (2017); Edogbanya (2018); Odia and Okoye (2018); Catalan, Impavido (2019), and Musalem; and Dostal(2020) amongst others carried out studies on a similar topic. Their studies focused on the Contributory Pension Scheme (proxied by Retirement Savings Account, Approved Existing Account, Closed Fund Contribution, Pension Fund Assets, Numbers of Pension Funds Contributors, and Total Pension Fund Assets); and the Nigerian capital market/Nigerian Economic Growth (proxied by Market Capitalization, All Share Index, Gross Domestic Product and Real Gross Domestic Product). However, there is a wide vacuum on subject gap that this study intends to fill. This is because no any research work use the focused and the controlled variables in a single study that this current study used; which are Contributory Pension Scheme proxied by Public Sector Pension Contribution Fund and Private Sector Pension Contribution Fund as the main (focused) variables; and Inflation Rate and Interest Rate as Controlled Variables. Also, the Nigerian Capital Market proxied by Nigerian Market Capitalization. Besides, this current study contributes to knowledge by providing more recent findings regarding the subject. Therefore, it is against these backdrops that this study aims to examine the effect of contribution pension scheme on development of the Nigerian capital market. However, for the purpose of this research work, the following null hypotheses are formulated:

HO₁: Public sector pension contribution fund has no significant effect on the Nigerian market capitalization.

HO₂: Private sector pension contribution fund has no significant effect on the Nigerian market capitalization.

LITERATURE REVIEW

Conceptual Framework

Pension

Pension may be defined as a regular flow of income paid by an employer to a previous worker who is currently in retirement. Mummy (2014) sees pension as a series of regular income (annuity) paid through the years following retirement to someone who has retired from formal employment in recognition of past economic contributions to organisation's prosperity. Anyafo (2018) defines it as a periodic payment or allowance to an individual or his family given because of some meritorious work or when certain conditions such as age, length of service, desired degree of contributions, and so on, have been met. Diamond (2016), however, insists that pension is a device for dividing business output between workers and pensioners. While it could be true that workers and pensioners share in business outputs, care must be taken to avoid giving an impression that only these two parties partake of business profits. As can be deduced from the above definitions pension has been explained to mean regular payments made in connection with past formal employment.

Public Sector Pension Contribution

A pension is the strongest and most stable retirement option. Workers earn their pension by contributing a portion of every paycheck toward their retirement. Their contributions are combined with their employer's contributions and then that money is invested. After they retire, the worker receives their pension through a monthly benefit that will last for the rest of their life. PenCom's latest monthly report tells us that the assets under management (AUM) of the regulated pension industry increased by 16.6% y/y to NGN12.25trn (USD29.9bn) at end-February yet declined by -0.4% m/m (Joda, 2016). The commission explains the rare, albeit small, decline on a marked to market basis as the result of falling prices for some fixed-income securities in identified funds. FGN debt securities represented 65.6% of the total at end-February. When we add corporate and state government issuance, we find fixed-income exposure equivalent to 73.7% of the industry's AUM. For whatever reason, the pension funds are wary of taking sizeable positions in other assets such as real estate, private equity and infrastructure funds (Joda,

2016). The share of domestic equities rose from 5.1% to 7.0% over the twelve months, and members' holdings by 61.1% to NGN857bn. Over the period the all-share index (ASI) increased by 51.8%, indicating a shift in allocation in addition to price gains in the market (Rewane,2019).. This momentum has been lost, however, as fixed-income returns have recovered from the lows that fuelled the surge on the bourse in Q4 '20. The holdings of FGN paper are predominantly the bonds, which represented 59.9% of total AUM. They are essentially the only game in town. Investors have enjoyed a very healthy yield pick-up since the start of the year and may reasonably expect a little more of the same in view of the huge deficit financing requirement this year.

Private Sector Pension Contribution

This has to do with the total money contributed by all employees of private sectors as pension. The Contributory Pension Scheme (CPS) in Nigeria which commenced in July 2004 was created for assist workers to save in order to cater for their livelihood during old age employees to save towards retirement, receive their retirement benefits, and to establish a strong regulatory and supervisory framework. Consequently, before the adoption of the Contributory Pension Scheme, there existed other pension schemes like the Defined Benefit Scheme (DBS). However, the downside to this old pension scheme and other similar ones comprised of unsustainable pension liabilities, weak and inefficient administration of schemes in both public and private sectors and the existence of diversified arrangements which were largely unregulated in the private sector (Rewane, 2019). As compared to the old pension scheme(s), where most of the accounts were not fully funded and there were no ready funds to pay the pensioners, the contributory pension scheme is fully funded and provides for the contributor to account for his own self-security. As the name implies, the pension scheme is contributory in nature. This means that the employer is expected to contribute a minimum of 10% of the employee's monthly emoluments (sum of the basic salary, transport, and housing allowances) while the employee contributes a minimum of 8%; making a total of 18% pension contributions.

Inflation Rate

Friedman (2016) referred to inflation as a monetary phenomenon and can be produced only by a more rapid increase in the quantity of money than output.” This was defined by Azar (2018), as a situation of a rising general price level of a broad spectrum of goods and services over a long period of time. It is measured as the rate of increase in the general price level over a specific period of time. Moya-Martinez and Escribano-Sotos (2018) pointed out, that the real effect of inflation is caused by money illusion. To the neo-classical and their followers at the University of Chicago, inflation is fundamentally a monetary phenomenon. Bekaert and Engstrom (2017) see inflation as an illusion which suggests that when expected inflation rises, bond yields duly increase, but because equity investors incorrectly discount real cash flows using nominal rates, the increase in nominal yields leads to equity under-pricing and vice versa. Azar (2018) viewed that inflation targeting is that form that disregards entirely the real effect of monetary policy both in the short and medium-term and focuses exclusively on controlling inflation within the shortest possible time horizon. Inflation can also be described as a persistent tendency for price and money wages to increase. It is measured by the proportional changes over time in some appropriate price index, commonly a pension fund index (Black, 2017).

Interest Rate

Interest rate is described as the price of money that is the amount of interest paid per unit of time expressed as a percentage of the amount borrowed. The cost of borrowing money, measured in naira, per year per naira, borrowed, is the interest rate. Interest rates differ mainly in terms/maturity that is the length of time for repayment and liquidity is the quick conversion of assets to funds (Adekunle, Alalade, & Okulenu, 2016). When maturity and liquidity together with other factors are considered, many different financial instruments and so many different interest rates will emerge (Anyanwu, 2016).

There are two main types of interest rates according to Pandey (2019) which can either be nominal or real. The nominal interest rates can be measured in naira terms, not in terms of goods. The nominal interest rate measures the yield in naira per year, per naira invested while the real interest rate is corrected for inflation and is calculated as the nominal interest rate minus the rate of inflation. A positive real interest rate indicates that nominal rates are in excess of inflation while a negative real rate is a direct reflection of high inflation.

Capital Market

According to Aremu and Ladipo (2017), the capital Market on the other hand is a market where both government and companies raise long-term funds to trade securities on the bond and the stock market. It consists of both the primary market where new issues are distributed among investors and the secondary markets where already existing securities are traded. In the capital market, mortgages, bonds, equities, and other such investment funds are traded. The capital market also facilitates the procedure whereby investors with excess funds can channel them to investors in deficit. The capital market provides both overnight and long-term funds and uses financial instruments with long maturity periods. The following financial instruments traded in this market include foreign exchange instruments, equity insurance, Credit market derivatives, and hybrid instruments (Aremu & Ladipo., 2017). According to Al-Faki (2016), the capital market is a network of specialized financial institutions, series of mechanisms, processes, and infrastructure that, in various ways, facilitate the bringing together of suppliers and users of medium to long-term capital for investment in socio-economic developmental projects". The capital market is divided into primary and secondary markets. The primary market or the new issues market provides the avenue through which government and corporate bodies raise fresh funds through the issuance of securities which is subscribed to by the general public or a selected group of investors. The secondary market provides an avenue for the sale and purchase of existing securities.

Market Capitalization

Market capitalization is the price of a stock at any given time multiplied by the number of shares outstanding. From a market perspective, market capitalization comprises the sum of individual outstanding shares by their prices for all the companies listed in a given stock market. Market capitalization can be divided as follows; one, large-cap ranging from \$10 – 100 billion; mid-cap (\$ 1 – 10 billion); Small-cap (\$100 million – 1 billion) and micro-cap (\$10 - \$ 100 million) (Osaze, 2017). Olson notes that no clear consensus or roles are governing the exact cut of values and whether categorization should be dollar-denominated or percentiles. Market capitalization is the total value of all equity securities listed on a Stock Exchange. It is computed daily. The market capitalization of a particular company on a particular day can be computed as the product of the number of shares outstanding and the closing price of the share. Here the number of outstanding shares refers to the issue size of the stock. Market Capitalisation = Closing price of share * Number of outstanding shares (Osaze, 2017). On the other hand, the need to be adjusted over time as a result of inflation, population change and overall market valuation is cut by categorization. Usually, this changes daily depending on the variation in prices of the respective shares. Therefore, the need to identify appropriate indicators that will help players in the stock market to monitor the changes.

Empirical Literature

Dagauda and Oyadiran (2019) did an analysis on Impact of Pension Contribution Fund of the Nigerian Civil Servants on the Nigerian Capital Market, with emphasis on five selected federal ministries in Abuja. Data for this research were collected through questionnaire using random sampling technique on one thousand five hundred respondents. The analysis was carried out using simple percentage and regression analysis. Findings that emerged clearly indicated that the implementation of the funded pension significantly improved the Nigerian capital operations, but did not address the problem of corruption and inadequate budgetary allocation and therefore not effective in overcoming the problems of retirees in

Nigeria. In view of the above findings, the study concluded that regulatory environment has failed to encourage interaction between pension reform and capital market reform whilst problems of regulation within the new system have also contributed to a lack of reform credibility, and has failed to offer any prospect to allow for coverage of workers outside of the formal sector of employment. They recommended among others that government and Pension Commission must strengthen monitoring and supervision unit of the commission to ensure effective monitoring, supervision, and enforcement; and effective implementation of penalties should be provided by the Act on non-compliers regardless of their status in the society. The above study failed to carry out normality test of the primary data collected, thus, this could make the findings of the study to be spurious and unreliable. But however, this current study will fill the gap by using secondary data; and avoid spurious results by carrying out the stationarity test of series from 2004 to 2020. Besides, this study will contribute to knowledge by providing more recent findings regarding the effect of pension contribution fund on the Nigerian capital market.

Uche (2020) assessed effect of Contributory Pension Fund and Capital Market in Nigeria; PenCom data bank from 2014 to 2019 for both private and public sector contributions were used. Data were analyzed using multiple regression analyses with the help of ordinary least square. Findings revealed that positive and significant relationship exist between Market Capitalization and Public Sector Pension (PSP) contribution. However, there were negative and insignificant connection between Market Capitalization and Private Sector Pension contribution. Thus, whenever PSP Contribution increases, it here would be a related growth in the Market Capitalization. The researcher concludes that pension fund assets and pension contribution/savings mobilized over the years have negative and insignificant impact on Market Capitalization; this is because authorities in charge have failed to harness huge opportunities in pension asset built up over the years to enhancement Nigerian Capital Market. He therefore recommended that the Commission should ensure Pension Reform Act be enforced particularly in the private sector to reduce leakages in the nation's economy. The results of the above study could be spurious and unreliable, this is because the study failed to conduct stationarity test of the data used, but this study intends to conduct stationarity and co-integration tests of the data to be used; thus, this will make the results of the present study to be more reliable. Besides, this study will contribute to knowledge by providing more recent findings regarding the effect of pension contribution fund on the Nigerian capital market.

Theoretical Framework

Efficiency Wage Theory

This theory was propounded by Henry Ford in 1914. This is the theoretical basis for payment of pension. The efficiency wage theory argues that companies such as, Siemens, that paid pensions at the earliest times, might have been goaded to pay premium wage to workers in order to prevent shirking of responsibility by workers and also to elicit extra effort from them. It is further argued that creating a pension fund is akin to wage raise in that when workers cared about their future they will take into account the benefits of being taken care of during retirement. It was even reasoned that Henry Ford's "five dollar day" policy in 1914 acted as an efficiency wage by increasing productivity, profits and queues for jobs at the Ford factory (Raff and Summers, 1987 cited by Kastl and Moore, 2009). Even, as a plausible explanation, it was further posited that the mid-1870s economic decline in Europe occasioned by banks' failure and Franco-Prussian War caused loss of skilled workers for Siemens due to war enlistment. Everything therefore was being done to woo and retain the few available workers. The adoption of the pension fund was that it would provide a wage premium over the prevailing market wage. But why Siemens had to pay wage premium through such a complicated system such as pension may have been for either of two reasons. The first could be because Siemens had a higher discount rate than workers such that postponing the payments associated with the wage increase into the future, there was the possibility that both firm and worker could have gained by the creation of pension fund. The second, and an alternative explanation, is that the cost of such a wage premium, via pension fund may have been lower when compared to direct wage payments.

Endogenous Growth Theory

This theory was developed by Paul Romer in 1986. According to the theory, the long-run growth rate of any capital market and economy depends on its rate of savings. Pagano (1993), while offering endogenous “AK” growth theory assumes that economic growth could be affected by financial intermediation in three different ways: how productivity of capital changes, channelling of savings to investment and rate of savings. Specifically, growth in finances reduces the loss of funds that are required for distribution, enhances higher savings ratio, and improves on the productivity of capital. The theory’s assumption is that only one type of good is produced and capital is the only input factor. However, this study anchored on the Endogenous Growth Theory. This is because it talks about savings and growth of capital market of a nation. It states that the growth of a capital market and an economy on the long run depends largely on its long-term savings.

METHODOLOGY

Ex-post facto research design was adopted for this study, this means cause-effect research design and this is chosen because of the research-specific objectives. The target population of the study comprises of National Pension Commission and all the Pension Fund Administrators (PFAs) in Nigeria between the years 2004–2020. All population was Censused, in which case the public sector pension contribution fund and private sector pension contribution fund as individual component of the aggregate were taken into consideration. The study adopts the secondary method of data collection. Secondary data is research data that has been previously gathered for other uses by researchers or institutions other than the present user.

Time series data was used in this study. The method that was employed to analyze the behaviour of the data is the use of both descriptive and inferential statistics. The variables which used to determine the formulated are presented as follows:

Independent variable is Contributory Pension Scheme, and it was proxied by Public Sector Pension Contribution Fund and Private Sector Pension Contribution Fund as the main (focused) variables and Inflation Rate and Interest Rate as Controlled Variables). And dependent variable is Nigerian Capital Market, and it was proxied by Nigerian Market Capitalization. The study modeled according to the studies of Okey and Amba (2018) but used different variables. The relationship between the two variables will be:

Model 1: Public Sector Pension Contribution Fund, Private Sector Pension Contribution Fund and Market Capitalization

$$LMCAP = L\beta_0 + L\beta_1 PUPCF + L\beta_2 PRPCF + L\beta_3 INFR + L\beta_4 INTR + \varepsilon \text{ ----- (1.1)}$$

Where:

LMCAP = Log of Market Capitalization

LPUPCF = Log of Public Sector Pension Contribution Fund

LPRPCF = Log of Private Sector Pension Contribution Fund

LINFR = Log of Inflation Rate

LINTR = Log of Interest Rate

β_0 is the intercept of the regression model of Log of Market Capitalization.

$\beta_1, \beta_2, \beta_3$ and β_4 are rates of change of the Public Sector Pension Contribution Fund and Private Sector Pension Contribution Fund variables with respect to Market Capitalization

ε is the error term associated with the model of the Public Sector Pension Contribution Fund and Private Sector Pension Contribution Fund variables with respect to Market Capitalization variable.

Re-writing equation (1.1) in general Error Correction Model (ECM) form to capture the dynamic relationship among the variables in the short and long-run, the model becomes:

$$\Delta LMCAP = \alpha_0 + \sum_{g=1}^l \alpha_{1g} \Delta LMCAP_{t-g} + \sum_{h=1}^m \alpha_{2h} \Delta LPUPCF_{t-h} + \sum_{i=1}^n \alpha_{3i} \Delta LPRPCF_{t-i} + \sum_{j=0}^o \alpha_{4j} \Delta LINFR_{t-j} + \sum_{k=0}^p \alpha_{5k} \Delta LINTR_{t-k}$$

Therefore, equation (1.2) was used to estimate and analyze the short-run and long-run the effect of contributory pension scheme on the development of Nigerian capital market. However, from equation (1.2), $\Delta LMCAP_{t-i}$ is the lag 1 of the Log of Nigerian Market Capitalization which is the dependent variable. The following are the independent variables: $\Delta LPUPCF_{t-i}$ is the lag 1 of the Log of Public Sector Pension Contribution Fund; $\Delta PPUPCF_{t-i}$ is the lag 1 of the Log of Private Sector Pension Contribution Fund; $\Delta INFR_{t-i}$; $\Delta INFR_{t-i}$ is the lag 1 of the Log of the inflation rate in Nigeria and $\Delta INTR_{t-i}$ is the lag 1 of the Log of interest rate in Nigeria. The model that is equation (1.2) above was used to adjust the estimation until the ECM turned negative. The negative sign of the coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

RESULT AND DISCUSSION

Descriptive Analysis of Variables

Table 1: Descriptive Analysis of Variables

	MCAP	PUPCF	PRPCF	INFR	INTR
Mean	13449.40	201.9359	192.4000	11.99588	20.82353
Median	14800.94	225.8600	159.5200	12.20000	20.82000
Maximum	21904.04	536.9400	371.1200	18.27000	26.71000
Minimum	2112.500	15.60000	11.20000	5.400000	12.50000
Std. Dev.	6573.777	131.2409	142.0965	3.533051	3.992706
Skewness	-0.334654	0.654002	0.058212	0.102985	-0.227024
Kurtosis	1.835960	3.606362	1.406035	2.389492	2.277376
Jarque-Bera	1.277099	1.472306	1.809281	0.294061	0.515912
Probability	0.528058	0.478953	0.404687	0.863268	0.772629
Sum	228639.9	3432.910	3270.800	203.9300	354.0000
Sum Sq. Dev.	6.91E+08	275586.9	323062.6	199.7192	255.0672
Observations	17	17	17	17	17

Source: Output from E-views 10 (2021)

The summary of descriptive statistics of relevant variables of study is as reported in Table 2 above. As may be observed from the table, the mean, median, standard deviation, as well as the skewness and kurtosis measures of our variables of interest, are given. The mean values of Market Capitalization (MCAP), Public Sector Pension Contribution Fund (PUPCF), Private Sector Pension Contribution Fund (PRPCF), Inflation Rate (INFR) and Interest Rate (INTR) are 13449.40, 201.9359, 192.4000, 11.9958 ,and 20.82353 respectively. Their respective standard deviations are 6573.777, 131.2409, 142.0965, 3.533051, and 3.992706. Also, the minimum values for MCAP, PUPCF, PRPCF, INFR, and INTR in Nigeria are 2,112.5 Billion Naira, 15.6 Billion Naira, 11.2 Billion Naira, 5.4 percent, and 12.5 percent respectively, while their maximum values are 21,904.04 Billion Naira, 536.94 Billion Naira, 371.12 Billion Naira, 18.27 percent, and 26.71 percent respectively . The Jarque-Bera test of normality shows that the error term in our specified equation is normally distributed. This is evidenced by the respective insignificant Jarque-Bera statistics of the relevant variables.

Unit Root Test

Table 2: Summary of Augmented Dickey-Fuller Test

Variables	ADF P-value @ 5% Level	ADF P-value @ 1 st Difference	Order of Integration
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LMCAP	0.0961	0.0224	I(1)
LPUPCF	0.0509	0.0151	I(1)
LPRPCF	0.0218	-	I(0)
LINFR	0.0520	0.0037	I(1)
LINTR	0.0721	0.0396	I(1)

Note: * represents 1% significant level; ** represents 5% significant level and *** represents 10% significant level. Calculated at trend and lag lengths selected automatically using the Schwarz Info Criterion (SIC).

Source: Output from E-views 10 (2021)

Table 4.4 shows the Augmented Dickey-Fuller stationarity test results of the five economic variables used in this study. From the results, Log of Capital Market Capitalization (LMCAP), Log of Public Sector Pension Contribution Fund (LPUPCF), Log of Inflation Rate (LINFR), and Log of Interest Rate (LINTR) were stationary at a first difference, while Log of Private Sector Pension Contribution Fund (LPRPCF) was stationary at first difference. This implies that the economic variables are fit and suitable to be used for the analysis. However, the analysis of the unit root test results are shown in appendix II.

Based on the above table, the outcome of our results revealed that the series are integrated of different orders. Therefore, in this case we cannot use Johansen Co-integration Test; we can only use the Bound Test of Co-integration proposed by Pesaran, Shin, and Smith in 2001.

Co-integrating Hypothesis:

H₀: There is no Co-integrating Equation

H₁: There are Co-integrating Equations

Decision Criteria:

Null Hypothesis is rejected, if the F-value is greater than 5% Critical Value for the upper bound series; otherwise, we fail to reject the Null, if the F-value is less than 5% Critical Value for the upper bound series.

Table 3: Co-integration Results

ARDL Long Run Form and Bounds Test

Dependent Variable: D(LMCAP)

Selected Model: ARDL(1, 0, 0, 0, 0)

Case 3: Unrestricted Constant and No Trend

Date: 08/26/21 Time: 12:10

Sample: 2004 2020

Included observations: 16

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.878597	1.400256	4.912384	0.0006
LMCAP(-1)*	-0.809985	0.215529	-3.758125	0.0037
LPUPCF**	0.313900	0.176934	1.774104	0.1064
LPRPCF**	0.091867	0.122210	0.751714	0.4695
LINFR**	-0.385509	0.217847	-1.769631	0.1072
LINTR**	-0.121612	0.067915	-1.790639	0.1036

* p-value incompatible with t-Bounds distribution.

** Variable interpreted as $Z = Z(-1) + D(Z)$.

Levels Equation
Case 3: Unrestricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPUPCF	0.387538	0.223278	1.735678	0.1133
LPRPCF	0.113418	0.133859	0.847294	0.4166
LINFR	-0.475946	0.339697	-1.401092	0.1914
LINTR	-0.150141	0.086065	-1.744515	0.1117

$$EC = LMCAP - (0.3875*LPUPCF + 0.1134*LPRPCF - 0.4759*LINFR - 0.1501 *LINTR)$$

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic k	6.725314 4	Asymptotic: n=1000		
		10%	2.45	3.52
		5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06
Actual Sample Size	16	Finite Sample: n=35		
		10%	2.696	3.898
		5%	3.276	4.63
		1%	4.59	6.368
		Finite Sample: n=30		
		10%	2.752	3.994
		5%	3.354	4.774
		1%	4.768	6.67

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-3.758125	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26
		1%	-3.43	-4.6

Source: *Researcher Computations (2021) employing E-Views*

The above results revealed that F-Value of 6.725314 is greater than the I(1) bound (Critical Value for the upper bound) of 3.52 at 5% level of significance. Similarly, the absolute T- statistics value of 3.758125 is greater than the I(1) bound (absolute Critical Value for the upper bound) of 3.66 at 5% level of significance. Therefore, it indicates that the null hypothesis of no level of relationship is rejected and accepts the alternate hypothesis of there is long run relationship among the variables. Thus, we estimate the long-run model and extract the residual via the use Ordinary Least Square and Error Correction Model.

Table 4: Ordinary Least Square Test and Error Correction Model

Dependent Variable: D(LMCAP)

Method: Least Squares

Date: 08/26/21 Time: 13:43

Sample (adjusted): 2006 2020

Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.085381	0.572819	-3.640562	0.0066
D(LMCAP(-1))	0.253153	0.324606	0.779879	0.4579
D(LPUPCF(-1))	-0.137639	0.320608	-0.429305	0.6790
D(LPRPCF(-1))	0.309266	0.104842	2.949821	0.0184
LINFR(-1)	0.870979	0.232724	3.742535	0.0057
D(LINTR(-1))	0.047655	0.113198	0.420994	0.6848
ECM(-1)	-0.623537	0.452024	-1.379434	0.0251
R-squared	0.757409	Mean dependent var		0.130920
Adjusted R-squared	0.575465	S.D. dependent var		0.334575
S.E. of regression	0.217997	Akaike info criterion		0.096054
Sum squared resid	0.380182	Schwarz criterion		0.426478
Log likelihood	6.279594	Hannan-Quinn criter.		0.092534
F-statistic	4.162880	Durbin-Watson stat		1.915237
Prob(F-statistic)	0.033824			

Source: *Researcher Computations (2021) employing E-Views*

From the long-run regression results shown in Table 5, the following interpretation can be inferred; a unit increase in Public Sector Pension Contribution Fund on the average holding other independent variables constant will lead to a 0.137639 unit decrease in Annual Capital Market Capitalization in Nigeria. While a unit increase in Private Sector Pension Contribution Fund, Inflation Rate, and Interest Rate in Nigeria on the average, holding other independent variables constant will lead to 0.309266, 0.870979, and 0.047655-unit increase in Annual Capital Market Capitalization in Nigeria (ACMCN) respectively. However, based on the probability value, the Private Sector Pension Contribution Fund and Inflation Rate in Nigeria were statistically significant in explaining the variation in the Nigerian Market Capitalization, while Public Sector Pension Contribution Fund and Interest Rate in Nigeria were statistically insignificant in explaining the variation in Nigerian Market Capitalization. Besides, the ECM parameter is negative (-) and significant which is -0.623537 and the p-value is 0.0251; this shows that 62 percent disequilibrium in the previous period is being corrected to restore equilibrium in the current period.

Moreover, the table above shows the relationship between Contributory Pension Scheme and the Development of Nigerian Capital Market. The R² value is 0.76; it indicates the prediction capability of

the independent variables. This indicates that 76% changes in the development of Nigerian Capital Market are explained by the changes in the Contributory Pension Scheme. Also, that only about 24% other factors that could bring about changes in the model were not included. Besides, the value of 58% of the Adjusted R^2 shows a strong relationship between the Contributory Pension Scheme and the Development of Nigerian Capital Market. Furthermore, it has been established that the H_{O1} which stated that Public sector pension contribution fund has no significant effect on the Nigerian market capitalization is accepted; this is because the p-value of 0.6790 is greater than 0.05. Also, the H_{O2} which stated that Private sector pension contribution fund has no significant effect on the Nigerian market capitalization is rejected; this is because the p-value of 0.0184 is less than 0.05. Finally, when Public Sector Pension Contribution Fund, Private Sector Pension Contribution Fund, Inflation Rate, and Interest Rate in Nigerian are joined together, they can influence Nigerian Market Capitalization. This is because, the Prob. (F-statistic) is 0.033824, less than 0.05. Therefore, it can be concluded that Contributory Pension Scheme has a significant effect on the Development of Nigerian Capital Market.

Post Estimation Test

In order to make the results of table 4 more reliable and valid, we check the auto-correlation and the stability of the model.

Serial Correlation LM Test

H_0 : There is no serial correlation

H_1 : There is serial correlation

Table 5: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.190563	Prob. F(1,7)	0.6756
Obs*R-squared	0.397527	Prob. Chi-Square(1)	0.5284

The above table shows that all observed R-square and the corresponding P-Values is 0.6756, greater than 0.05; we therefore, accept the H_0 and conclude that the model is free from the problem of serial autocorrelation.

Discussion of Findings

The study revealed that Public sector pension contribution fund has no significant effect on the Nigerian market capitalization. The results are consistent with the findings of Dagauda and Oyadiran (2019) who studied Impact of Pension Contribution Fund of the Nigerian Civil Servants on the Nigerian Capital Market, with emphasis on five selected federal ministries in Abuja. In view of the above findings, the study concluded that regulatory environment has failed to encourage interaction between pension reform and capital market reform whilst problems of regulation within the new system have also contributed to a lack of reform credibility, and has failed to offer any prospect to allow for coverage of workers outside of the formal sector of employment. This study is inconsistent with the findings of Patrick and Akinwunmi (2019) who examined empirically the causal relationship between Capital Market and Public Pension Assets in Nigeria from 2005-2018. The study reveals that pension asset is directly sensitive to stock market Index, while the index is inversely sensitive to short term interest rate, implying that the high short term interest rate regime might be inimical to building 'wholesome' pension assets of the capital market. Also, the study established that private sector pension contribution fund has a significant effect on the Nigerian market capitalization.

This findings are in agreement with the findings of Elumelu (2019), who examined Pension Reform and Capital Market Development in Central and Eastern European Countries, using data from 2001 to 2018. The finding also agrees with the results of Yunusa (2018) who studied the impact of the private contributory pension fund on Nigerian capital market analyzing data from 2006-2016. The study found that a contributory pension funds asset has significant impact on Nigeria economic growth and the

population of private pensioners have significant impact on the growth of Nigerian capital market because increase in private pensioners will increase the pension assets which on the long run have positive impact on the overall economic growth. But however, the findings of this current study are not in agreement with the findings of Uche (2020) who Uche (2020) assessed effect of Contributory Pension Fund and Capital Market in Nigeria; PenCom data bank from 2014 to 2019 for both private and public sector contributions were used. Findings revealed that positive and significant relationship exist between Market Capitalization and Public Sector Pension (PSP) contribution. However, there are negative and insignificant connection between Market Capitalization and Private Sector Pension contribution.

CONCLUSION AND RECOMMENDATION

This paper examines the dynamic and causal relationship between pension fund investment and Capital market development in Nigeria. Based on the findings, the paper therefore concludes that pension fund investment affects capital market development positively. The investment of pension funds into the capital market over the years has assisted to engender the development of the Nigeria Capital market and the impact would be more significant in the long run. The study assesses the Contributory Pension Scheme in Nigeria and how it has effect on the development of Capital Market in Nigeria since its inception in 2004. It was established that the contributions from the employers and employees in the public and private sectors are invested in different assets that formed the Pension Asset under Management. The study discovered that the Public Sector Pension Fund has not contributed significantly to the development of the Capital Market in Nigeria, but Public Sector Pension Fund has contributed significantly to the development of the Capital Market in Nigeria. It is obvious that Nigeria's pension funds' assets under management has grown massively in to a potential investment capital capable of closing investment gap in the Nigerian stock market to deepen the market in terms of the depth and liquidity and promote the economic development of the nation. In this regard, the overly restrictive regulation on the investment of pension assets should be re-examined to provide the much needed finance the stock market requires for development.

The results of this study have shown that there is no significant influence of the Public Contributory Pension Scheme on Market Capitalization in Nigeria, but there is significant influence of the Private Contributory Pension Scheme on Market Capitalization in Nigeria. In this direction, the researcher therefore, makes the following recommendations; There should be proper liberalization of public pension fund investment and monitoring of the management of pension assets invested in the capital market to improve market capitalization. This is because despite the proportion of pension assets invested in the capital market, it has no significant effect on the market capitalization. However, pension funds should be guided by the desired economic effects and implications and not solely by the safety of returns on investment. Besides, the pension fund assets of public workers should be channeled into investment avenues considering the ages of the workers so that workers who are old could get their benefits as at when due after retirement. Furthermore, the National Pension Commission as the regulator of pension in Nigeria should take urgent steps to compel Ministries, Departments and Agencies (MDAs) and private sector employers to comply with the provisions of section 4(5) which states, "that every employer shall maintain a group life insurance policy in favour of each employee for a minimum of three times the annual total emolument of the employee and premium shall be paid not later than the date of commencement of the cover".

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