



PENSION FUND INVESTMENT IN FEDERAL GOVERNMENT SECURITIES AND ECONOMIC GROWTH OF NIGERIA

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ABSTRACT

Economic growth is a very crucial policy goal of any government and this also applies to every government administration in the modern society and global economy. Much funds are accumulated through the contributory pension scheme, which if well managed can create wealth and increase real output of the country. However, prudent management and investment of these funds by the pension fund administrators and custodians as well as effective regulation by pension fund regulator to create wealth and for real economic benefit (economic growth) of Nigeria has been a growing concern. This study evaluated the impact of pension fund investment in Federal Government Securities (FGNS) on Economic Growth represented by Gross Domestic Products (GDP) of Nigeria. The study employed *ex-post facto* research design. The population of the study comprised 31 pension fund operators being regulated by Nigeria Pension Commission (PENCOM) as at 31st December 2019. The study adopted total enumeration method. Secondary data obtained from the quarterly published reports of PENCOM and National Bureau of Statistics (NBS) for the period 2010 – 2019 were used. The data were analyzed using trend analysis, descriptive and inferential statistics employing regression analysis. The findings revealed that pension fund investment in Federal Government Securities (FGNS) had significant and positive effect on Gross Domestic Product (GDP). The study therefore concluded that pension fund investment in Federal Government Securities (FGNS) has the capacity to contribute to the economic growth of Nigeria and therefore recommended the investment of more pension funds in FGNS.

Keywords: Administrators, Custodians, Economic growth, Investment, New contributory pension scheme, Pension fund assets

1. INTRODUCTION

Economic growth is a very crucial policy goal of any government and this also applies to every government administration in the modern society and global economy. Historically, economic growth had always been the centre point that has occupied the attention of the governed and their governments. In Nigeria for example, the major objective of the Nigerian government has always been to promote economic growth through the adoption of various monetary and fiscal policies. Notwithstanding this broad objective, Nigeria's economic growth performance has been very unstable, characterized by "fits and starts"; and the future of her rapid and sustained economic growth appears unrealistic as shown by her inability to achieve full growth capacities or potentials which can reduce the rate of poverty in the economy to a large extent (Uwakaeme, 2015). Some studies, for example, Essien & Bawa, (2007) had submitted that the rapidly declining economic growth rate in the developing countries requires urgent policy response in order to reverse the trend and lead the economies on the path of growth.

Economic growth has different definitions as put forward by different authors. Olaifa (2012, p29), defined it as “a concept for categorizing nations and sometimes refers to the measurable wealth of nations and individuals in the form of Gross Domestic Product or Gross National Product.” Economic growth occurs when real output increases over time. The most common measure of the size of an economy is Gross Domestic Product (GDP). “The Gross Domestic Product (GDP) is the monetary value of goods and services produced in an economy during a period of time irrespective of the nationality of the people who produced the goods and services. It is calculated without making deductions for depreciation” CBN Quarterly Bulletin (2018, p12). GDP is also viewed as “the market value of all officially recognized final goods and services produced within a country in a given period. It measures overall economic activity and signals the direction of economic growth and welfare. It is internationally recognized as a measure the health and the size of any economy within a given period of time. The GDP growth rate on the other hand is a measure of the rate of change that a nation's gross domestic product (GDP) experiences from one period to another” (NBS FAQs on GDP Rebasing, p2)

Much funds are accumulated through the contributory pension scheme. It is expected that the wise and prudent investment and administration of these funds by the pension fund administrators and custodians as well as effective regulation by the pension regulators can create wealth and add to the economic growth of the country (Uwakaeme, 2015). Pension funds investment could provide long term funds for economic and social development of the country (Henshaw, 2012). This is made possible through vital roles of savings accumulation played by the scheme which enhances economic and financial market growth, much as it helps in reducing old age poverty and provision of long-term investible funds.

Accordingly, monies are intermediated by pension funds into a variety of financial assets, which include treasury bills, government bonds (Federal and States), corporate equities, corporate debt (in the form of loans or bonds), real estate, securitized loans, foreign money market instruments and deposits as forms of liquidity. Federal Government Securities are securities issued by the Central Bank of Nigeria, the apex bank in Nigeria, on behalf of and for the Federal Government of Nigeria (FGN). These securities or financial instruments consist of Nigerian Treasury Bills (NTB), FGN Bonds, Federal Government Development Stocks (FGN DS) and Nigerian Treasury Certificates.

While large funds are accumulated through the contributory pension scheme, the foremost issue is that in the light of these huge accumulated funds, there are increasing anxieties over the limited available channels in which to invest this money to the benefit of the real economy of Nigeria. Regulatory restrictions and investment limits are also inhibiting further growth potential and competitiveness in the pensions' industry. These limit the wealth creation potential of pension funds as well as their contribution to the growth of the country's economy.

Pension funds have the capacity to develop countries' financial markets and by extension grow the global economy. Studies have indicated that pension funds are critical driver of macro-economic stability, have positively impacted the economies of the world through direct impact on their GDP, accumulated savings and development of the financial market, thereby improving the standard of living of retirees (Njuguna, 2010; Stiglitz, 1999).

Globally, the highest and largest source of personal income and savings for people is pension funds and Nigeria is no exception (Devereux, 2001; Hassan, 2008; Jablonsky, 2007). Although there is an on-going argument on whether private pension funds can single-handedly increase the level of national savings, opinion appears to favour the view that pension funds are important means of reducing poverty and speed up economic growth if properly managed and efficiently regulated (BON, 2010; Stiglitz & Orszag, 1999). Therefore, it has become imperative in the way and manner in which pension funds are managed for economic growth. In this regard, the study relies on the Endogenous “AK” Growth Theory to argue that it will be of great benefit to pension fund contributors and the nation at large if accumulated pension fund savings are invested not only in secure investment outlets but also in securities that are capable of creating public wealth and induce economic growth.

Studies exist on the impact of contributory pension scheme on economic growth as well as on effect of pension fund investments on capital market development and economic growth. However, studies dealing specifically on pension fund investments in federal government securities and their effect on economic growth have not come to our notice. Our current study is timely and relevant for filling this identified gap in literature and also calls the attention of PFAs and Asset managers to the benefit of channeling pension funds to outlets that will create public wealth that may enhance the economic growth of Nigeria.

The rest of this paper is organized as follows. In section 2, we review extant literature and highlight the underlying theory for the study. Section 3 presents the methodology of the study including measurement of variables. The empirical analyses, results and discussions are presented in section 4, while section 5 concludes it.

2. LITERATURE REVIEW

Theory

This study is premised on the Endogenous “AK” Growth Theory. This theory stipulates that the long-run growth rate of an economy is largely dependent on that economy’s savings rates. The endogenous “AK” growth theory as propounded by Pagano (1993) was premised on the assumption that economic growth is a function of financial intermediation via three (3) means namely: dynamism of capital productivity, savings invested and savings rate. Alternatively, the theory clearly stipulates that increase in capital productivity, greater savings ratio and increase in investments are all functions of financial development. The theory further assumes that Capital is the only input factor with just only one type of good produced.

$$Y_t = AK_t \text{-----} (1)$$

Where Y = Output, K = Capital, t = Time, (i.e. Where Y_t and K_t are output and capital stock at time t , respectively) and A = Capital Productivity. (i.e. A is a constant measuring the amount of output produced for each unit of capital)

This implies that capital stock (K) in time plus one ($t + 1$) is given as:

$$K_{t+1} = I_t + (1-\delta) K_t \text{-----} (2)$$

Where I = investment and δ = rate of depreciation.

The equation suggests that if a fixed fraction (s) of output (y) is saved and there is a fixed rate of depreciation (δ), the rate of accumulated net investment is given as:

$$\frac{dk}{dt} = \Delta K = sy - \delta k \text{-----} (3)$$

If both sides of equation (3) are divided by K , the capital accumulation equation will be $\Delta K/K = sY/K - \delta$. Since, from equation (1), $Y/K = A$, substituting A for Y/K results in equation (4) below.

This means that the growth rate (g) is given by:

$$g = \frac{1dy}{ydt} = \frac{1dk}{kdt} = \frac{\Delta K}{K} = SA - \delta \text{.....} (4)$$

When we combine the logarithms and derivatives of equation (1) with equation (3), the steady state growth rate will be:

$$y = SA - \delta$$

The relevance of this theory to this study lies on the understanding that if pension fund savings are largely invested in public wealth creating channels such as the federal government securities, the potentials for economic growth of the country will likely be enhanced.

Conceptual and Empirical Review

“Pension funds administrators may be defined as forms of institutional investors, which collect, pool and invest funds contributed by sponsors and beneficiaries to provide for the future pension entitlements of beneficiaries” (Davis, 1995a, p465). Pension funds contribution is the means by which individuals accumulate savings over a long period of time, usually over their working life, in order to make provisions for their consumption needs at retirement, either through a lump sum or an annuity while still making funds available for other end-users such as households and business organisations by means of secured loans or governments by means of investment in government securities. Since access to or withdrawal of pension fund is usually discouraged or restricted until retirement age stipulated in the pension Act, pension funds therefore is long-term liabilities, allowing holding of high risk and high return instruments such as FGN securities or financial instruments.

Pension fund investment is a driving force for the success and expansion of asset management, stock broking and financial markets in Nigeria (Stock & Sherbourne, 2004; Volan, 2005). Pension funds have increased in recent years in many of the Organisation for Economic Cooperation and Development (OECD) countries as well as in emerging markets, in relation to Gross Domestic Product. Growth of pension funds has emerged as a pioneer intermediary that is capable of controlling countries' GDP. Dovi (2008) as cited by Njuguna (2011, p101) “documents that between 1998 and 2007 the pension savings increased from 17.8% to 22.1% of the GDP in Sub-Saharan Africa and from 21% to 30% of the GDP in Northern Africa as a result of embracement of the funded pension system.” The new pension scheme in Nigeria is important to the growth of the Nigerian economy. The Contributory Pension Scheme, which replaced the pre-reform Defined Benefit (DB) scheme, has grown its pension assets from N649.92 billion in 2006, when the scheme became generally effective to N10,218,053.05 trillion as at the end of December 2019; and from a total Retirement Savings Account (RSA) contributors of 1,677, 330 in 2006 to 8,807,401 in December 2019 (PENCOM, 2019).

Previous Pension schemes in Nigeria were faced with many challenges before the enactment of the Pension Reform Act (PRA) 2004 as amended. The legacy Defined Benefits Scheme adopted in the Public sectors (government ministries, parastatals and agencies) was not funded despite the fact that the retirement benefits (pension and gratuity) were budgeted for every year. The yearly budgeted pension allocation was often one of the items in the budget that was not being implemented due to funding constraint. On several occasions, even where the pension fund was provided for in the budget, insufficient release of funds and delays in release of funds usually resulted in accumulation of arrears of payment of pension rights. This challenge propelled the administration of President Olusegun Obasanjo to come up with a solution through a reform to the pension Act in order to address and put an end to the problems associated with pension schemes in the country. The result of the reform was the passing into law of the Pension Reform Act (PRA) 2004 and subsequent amendment of the Act in year 2014 (PENCOM, 2019). The Pension Act 2014 also addressed the issues on pensions of University Professors and political office holders as well as encouraged contributors towards owning a residential property by using portion of their retirement savings contributions as equity contribution for mortgage. (PRA 2014).

Contributory Pension Scheme

Chamberlain (2005) highlighted that the Defined Contributory Pension Plan that is introduced in Nigeria can transform both the financial market and Nigerian economy at large. Vittas (2000) stated that the existence of funded pension schemes has immense long-term effects on the performance, development and growth of financial markets. He went further to state that the consistent accumulation of long-term financial resources, which is a primary attribute of funded pension plans, would definitely impact the financial savings composition, even if it may not impact the rate of national saving. The Contributory Pension Scheme has increased mobilization of savings for the growth of Nigerian financial markets and GDP (Gunu & Tsado, 2012).

Economic Growth

Economic growth has different definitions as put forward by different authors. Friedman (2011) supported the view of Olaifa by defining economic growth as structural change, system expansion and inclusive development leading to the structural transformation of social systems. Economic growth is an increase in the production of economic goods and services, compared from one period of time to another. Economic growth means there is an increase in national output resulting in increase in national income.

Gross Domestic Product

The United States of America Bureau of Economic Analysis (BEA, 2015, p5) defines Gross Domestic Product (GDP) as “the value of the goods and services produced by the nation’s economy less the value of the goods and services used up in production. GDP is also equal to the sum of personal consumption expenditures, gross private domestic investment, net exports of goods and services, and government consumption expenditures and gross investment.”

“GDP is a macroeconomic aggregate that represents the totality of economic output within a nation’s borders, that is, the total value of goods and services produced within an economy in a given period of time. GDP could be computed using the expenditure approach which shows spending by key economic agents in an economy. It is the sum of consumption expenditures by households, investments expenditures by firms, government expenditures as well as the difference between exports and imports, commonly expressed by the equation, $GDP = C + I + G + (EX - IM)$.” (NBS FAQ on GDP Rebasing, 2019, p3).

Contributory Pension Fund Scheme and Economic Growth

Pension funds has contributed immensely to the economy of countries globally through direct contribution to their Gross Domestic Product, development of the financial markets, increase in savings, alleviating poverty at retirement and consumers of financial services (Njuguna, 2010). Pension funds have been found to be an extremely important driver of macroeconomic stability (Stiglitz, 1999) that contributes significantly to GDPs of global economies, including Nigeria. In Nigeria, pension fund investments have been identified as the driving force for the increase in stock broking firms, asset management companies and the financial markets industry (Stock & Sherbourne, 2004; Volan, 2005). Therefore, it has become imperative to properly and efficiently manage pension funds.

PENCOM (2019) report shows that pension fund assets were standing at N10.218 trillion as at December 2019 from historically low sum of N47 billion in 2004. Similarly, accumulated pension savings stood at a sum of N5,793.63 trillion in December 2019 from a sum of N15.6 billion in 2004. As at the time of carrying out this study, there were twenty-one (21) Pension Fund Administrators (PFAs), six (6) Closed Pension Fund Administrators (CPFAs) and 4 Pension Fund Custodians (PFCs) which are expected to service over 8,807,401 contributors (Pencom 2019). The PRA 2004 as amended is the legislation of the Government at the Centre (Federal Government) enacted to address the associated challenges of the old Pension Scheme. The scheme entrenched same Pension System applicable to the public and private sectors respectively. In addition, a single authority (called National Pension Commission) was established for the first time in the history of the country, to regulate pension matters in the country (Gunu & Tsado, 2012).

Elumelu (2005) put forward that, the PRA 2004 entrenched a uniform contributory private sector managed and fully funded pension system for both the public and private sectors of the economy. The PRA 2004 was also enacted to address the obvious inadequacies, weaknesses and loopholes in the old pension schemes and guarantee the future of retirees after retirement from services. Koripamo - Agary and Yunusa (2009) pointed out that the disadvantage of the legacy Defined Benefit Scheme (DBS) is inadequate and absence of timely budgetary provisions usually accompanied with rising life expectancy, increasing number of employees, poor execution of the pension scheme in the private sector due to non-supervision and non-regulation of the system and the increasing private sector employees with no form of retirement welfare package or pension scheme. These challenges among others led to the establishment of the PRA 2004. After 10 years of implementing the PRA 2004 in Nigeria, the PRA 2014 was signed into law to address the challenges and loopholes in the implementation processes of PRA 2004.

Pension Fund Investment in Nigeria

As previously stated, pension fund assets in Nigeria were valued at about N10.218 trillion in December 2019. In spite of this growth in pension assets and the huge funds invested in retirement savings, there are still growing anxieties around limited number of avenues to channel these funds to the benefit of the economy, leaving them at the risk of being idle. Part XII, Section 85 of the PRA 2014 states that, “all contributions by members shall be invested by the Pension Fund Administrators with the objectives of safety and maintenance of fair returns on amount invested and in accordance with the regulation and guidelines issued by PENCOM from time to time.”

Section 86 stipulates that “Pension fund assets shall be invested in the following allowable instruments:

1. Bonds, treasury bills and other securities (including bonds denominated in foreign currencies) issued by the Federal Government and CBN or their agencies as well as special purpose vehicles and companies created/owned by the Federal Government, provided that the securities are fully guaranteed by the CBN or Federal Government.
2. Bonds issued by eligible State and Local Governments or State Government Agencies or wholly owned companies of the State Government, provided that such securities are fully guaranteed by Irrevocable Standing Payment Orders (ISPOs) or external guarantees by eligible banks or development finance institutions or MDFOs with a minimum credit rating of ‘A’.
3. Bonds, debentures, redeemable/convertible preference shares and other debt instruments issued by listed corporate entities; bonds and debt securities issued by eligible unlisted companies; and Asset Backed Securities including Mortgage Backed Securities and Infrastructure Bonds.
4. Ordinary shares of public limited liability companies listed on a securities exchange registered by SEC.
5. Money market instruments of banks and discount houses as well as Commercial Papers issued by corporate entities.
6. Open/ Close-ended/ Hybrid Investment Funds, including Exchange Traded Funds, which are registered with SEC.
7. Investment Funds whose underlying assets are tangible physical assets. These include:

Real Estate Investment Trusts (REITs) registered by SEC; Private Equity Funds registered with SEC; Infrastructure Funds registered with SEC; Supranational Bonds issued by eligible MDFOs; Global Depositary Receipts/Notes (GDRs/Ns) and Eurobonds issued by listed Nigerian companies, as certified and approved by SEC.”

The focus of this study is on Federal Government Securities, one of the PENCOR allowable instruments and their impact on economic growth (GDP in this case).

Federal Government Securities (FGNS) are issued by Federal Government of Nigeria through the Central Bank of Nigeria (CBN) or through The Debt Management Office (DMO). Federal Government Securities (FGNS) are made up of Nigerian Treasury Certificates, Nigerian Treasury Bills (NTB), FGN Bonds and Federal Government Development Stocks (FRN DS).

Nigeria Treasury Bills (NTB) according to the CBN website on FAQs was defined as “short-term securities issued at a discount for a tenor ranging from 91 to 364 days, such that the income received is the difference between the purchase price and the amount received at maturity or prior to the sale.” (CBN website on FAQs). FGN Treasury Certificates (NTC) have similarities with NTBs in all respect except that they have tenors of one to two years. They are also no longer in vogue.

Investing in these short-term securities confers some benefits among which is the fact that the yield on the investment is realizable upfront and can be reinvested for more income; the income realizable from this type of instrument can be very competitive if compared with returns on other money market securities with same maturities; the instruments or securities have no risk and income or returns on investment is not taxable. The securities can also be used as collateral for short-term borrowing from lending financial institutions. This means they are negotiable securities or financial instruments. (CBN, 2016).

Short-term financial instruments are liquid assets because they can easily be converted into cash and because they have market enhancing facilities which facilitate their liquidity. The securities are usually traded on the floor of the Nigeria Stock Exchange with stability in their market price while transfer is by simple delivery. The securities are also considered to be risk-free and the safest in the market. They can also be classified as liquid assets of bank which can be used in computing liquidity ratio. (SEC, 2011).

FGN Development Stocks “are long-term interest-bearing debt instruments issued by the government to finance its development projects. The stocks have tenors ranging from two to twenty-five years” (CBN website on FAQs). FGN Bonds are debt securities issued by the Debt Management Office (DMO) for and on behalf of the Federal Government. The Federal Government is under obligation to pay the bondholders both the principal and agreed interest as and when due. Federal Government Bonds are backed by the ‘full faith

and credit' of the Federal Government and thus are considered and classified as the safest, risk-free debt instrument in the domestic debt market. Also, the interest income from the securities is tax exempt. They have a tenor of two to ten years (DMO, 2019, NSE, 2010 & CBN, 2016). These long-term financial instruments or debt securities could be used as collateral for loan or borrowing and they can be traded on the stock exchange. The yield or interest on the instruments is paid half-yearly and investment is risk-free with zero-default. All these features among others make the instruments attractive to investors.

The markets for dealing in these securities or financial instruments are two namely, Primary Market and Secondary Market. While the Primary Market is the market for dealing in new issues, the Secondary Market is the market where securities created or issued in the primary market are traded. The market for dealing in new issues for all government securities is the Issues Office in Central Bank of Nigeria. Treasury bills and treasury certificates are issued by Federal Government through Central Bank of Nigeria to finance government deficit budget. The treasury bills are usually issued through a competitive bidding process, quoted and traded on FMDQ's platform. Transactions in development loan stocks and FGN Bonds in the secondary market are traded on the floor of the Nigerian Stock Exchange through licensed stock brokers while Central Bank of Nigeria serves as the registrar to the issue. "Any member of the public can invest in Government Securities - individuals, Corporate Bodies (Private and Public), Institutions (Private and Public), Banks, Discount Houses and Brokers" (CBN, 2015). FGN Bonds can be issued through a primary issue effected through licensed Primary Dealers Market Makers (PDMMs) whilst the Secondary Market activities are also anchored mainly by PDMMs to ensure liquidity (NSE, 2010, SEC, 2011 & CBN, 2015).

Problem of the new pension scheme

Although the new reformed Act is founded on the key principles of flexibility, sustainability, equity, accountability and practicability, there is fear that the funds or RSA contributions can be mismanaged by the existing pension managers. The major challenges confronting the contributory pension scheme in Nigeria are scarcity or shortage of investment outlets and the effective management of the limited investment outlets (Nwanne, 2015). For example, we have only 12 categories of investments to channel pension fund assets estimated at N10.218 trillion as at December 2019. (PENCOM monthly report, 2019). Nwanne (2015) reiterated that after nine years of establishing contributory pension scheme in Nigeria, there was still uncertainty as to the ability of the scheme to address the challenge of scarcity of long-term funds for quality and viable long-term assets. Olanrewaju (2011) expressed same fear that forcing employees to save in a low-income country with high level of large scale poverty and insufficient complementary social security system provision may not be welcomed in Nigeria. However, Balogun (2006) and Ogunmike (2008) as cited in Gunu & Tsado (2012) have demonstrated confidence that the contributory pension scheme has the capacity to muster savings for financial market development and growth of the economy. However, as at December 2019, numbers of pension contributors were 8,807,401. This represents 10.97% of Nigeria's working population and 4.55% of total Nigeria's population. The pension fund assets as a percentage of the Nigerian re-based GDP in 2019 were 14.17% (NBS Report, 2019 and PENCOM, 2019).

Drawing from the above literature, this study hypothesizes that:

H₀: Pension fund investment in Federal Government Securities does not significantly affect Gross Domestic Product in Nigeria.

3. METHODOLOGY

The study adopted *ex-post facto* research design. The population of the study comprised 31 pension fund operators being regulated by Nigeria Pension Commission (PENCOM) as at 31st December 2019. Due to lack of data for the individual Pension operators and the availability of summarized data for all the pension operators on PENCOM website, the study therefore adopted total enumeration method. The study employed secondary data obtained from the quarterly published reports of PENCOM and National Bureau of Statistics (NBS) from period 2010 – 2019. The data were analyzed using trend analysis, descriptive, and inferential statistics employing simple linear regression using E-View statistical package. The decision to study pension fund investment in FGNS is purposive because it would give us the privilege to study the trend in the investment and the relationship with the Nigerian economy. The position in the economy would enable us to

take a decision if PENCOM investment guidelines should be reviewed or not especially as it relates to investment in FGNS.

3.1 Description and measurement of variables

In this study, pension fund investment in Federal Government Securities which is the independent or explanatory variable was represented by FGNS while economic growth which was represented by Gross Domestic Product was the explained or dependent variable.

$$Y = f(X)$$

Y = Explained or Dependent variable

X = Explanatory or Independent variable

Where:

Dependent variable (Y) is Economic Growth represented by real GDP

Independent variable (X) is Pension Fund investment in Federal Government Securities represented by FGNS:

Model Specification

$$GDP = f(FGNS)$$

$$\text{Log}(GDP)_t = \beta_0 + \beta_1 \text{Log}(FGNS)_t + \mu_t$$

The model is to determine the relationship between pension fund investment in Federal Government Securities (FGNS) and Gross Domestic Products (GDP), that is to ascertain if investment in FGNS has any direct relationship with GDP for the period under review which may necessitate the call for the review of PENCOM investment guidelines.

A priori Expectation

In this study, pension fund investment in Federal Government Securities FGNS was expected to have a positive relationship with economic growth represented by Gross Domestic Product (GDP), that is, $\beta_1 > 0$.

Hypotheses acceptance criteria: H_0 ; if p-value < 0.05, reject null and accept alternate

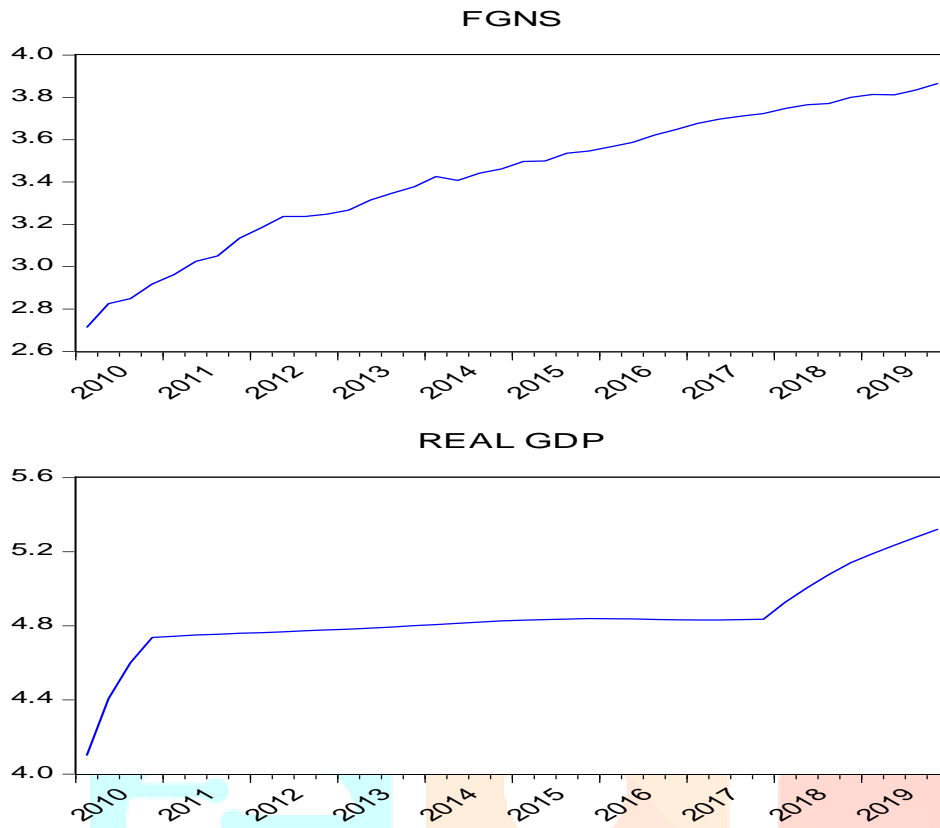
4. ANALYSIS, RESULTS AND DISCUSSIONS

This section is divided into two: firstly, data description or descriptive statistics and secondly, hypothesis testing using ordinary least square (OLS).

4.1 Descriptive Statistics

Quarterly data for pension fund investment in Federal Government Securities (FGNS) and Gross Domestic Product (GDP) in naira were obtained for the period from Q1 2010 to Q4 2019. The movements in the data obtained are shown in figure 1 below, showing that both FGNS and GDP have upward movement for the period under review. Outcome of the descriptive statistics for the transformed data is shown in table 1 below. There is little variations in the values of Log(FGNS) and Log(GDP) for the years under review as revealed by the differences in minimum and maximum values respectively. The skewness of both Log(FGNS) and Log(GDP) are negative, indicating that the left tails for both distributions are extreme. Furthermore, the kurtosis reveals that Log(FGNS) is platykurtic indicating that it has thin tails than normal distribution while Log(GDP) is leptokurtic because its value is above the threshold of 3. The closer the series are to their kurtosis and skewness the better the chances of such series to be normally distributed. The Jarque-Bera statistics also shows the normality or otherwise of the series' distribution. This is determined by the values of the probabilities of Jarque-Bera statistics.

Figure 1. Graphs showing movements of FGNS and GDP in Naira



Source: Researcher's Study, 2020

Table 1. Summary of Descriptive Statistics

	Log(FGNS)	Log(GDP)
Mean	3.428900	4.838881
Median	3.479439	4.829034
Maximum	3.865934	5.321588
Minimum	2.713491	4.099801
Std. Dev.	0.315554	0.211871
Skewness	-0.549548	-0.421238
Kurtosis	2.324362	6.274778
Jarque-Bera	2.774162	19.05656
Probability	0.249803	0.000073
Observations	40	40

Source: Researcher's Study, 2020

Table 2 below gives the estimated model for our proposed hypothesis that pension funds investment in federal government securities does not significantly impact gross domestic products in Nigerian.

Table 2. Regression Estimate for Research Model

Variable	Dependent Variable: Log(GDP)			
	Coefficient	Std Error	T	Prob.
C	2.953859	0.215301	13.71968	0.0000
Log(FGNS)	0.549745	0.062532	8.791369	0.0000
R-squared	0.670391			
Adjusted R-squared	0.661717			
F-stat	77.28816			
Prob. (F-Stat)	0.0000			

Source: Researcher's Statistical Analysis, 2020

A priori Expectation and Research Model

$$\text{Log(GDP)}_t = \beta_0 + \beta_1 \text{Log(FGNS)}_t + \mu_t$$

$$\text{Log(GDP)}_t = 2.953859 + 0.549745 \text{Log(FGNS)}_t$$

The regression estimate of the research model reveals that pension funds investment in Federal Government Securities measured by *Log*(FGNS) has a positive effect on Gross Domestic Product (GDP) measured by *Log*(GDP). This is indicated by the sign of the coefficient, that is $\beta_1 = 0.549745 > 0$. This result is consistent with the *a priori* expectations.

Discussion

From Table 2, the size of the coefficient of the independent variable (β_1) shows that a 1% increase in Pension funds investment in Federal Government Securities will result in a 0.55% increase in the mean of GDP. Besides, Adjusted R^2 revealed that about 66% variations in GDP can be attributed to Pension funds investment in Federal Government Securities, while the remaining 34% variations in GDP are caused by other factors outside this model. This indicates a strong explanatory power of the model. This is further emphasized by the p-value of the *t*-statistic of 0.00 which shows that the regression result is statistically significant at our chosen 5% level of significance. Therefore, the model is adequate and the null hypothesis that pension fund investments in Federal Government Securities have no significant impact on the economic growth of Nigeria is rejected. Hence, pension funds investment in Federal Government Securities (FGNS) has a positive significant impact on the economic growth of Nigeria.

This result indicates that pension fund investments in Federal Government Securities have the potential of making good contribution to the growth and development of the Nigerian economy. The finding aligns with the result of Akowe, Ocheni, and Daniel (2015) that FGNS has a significant positive effect on Economic Growth of Nigeria.

The totality and results of this study is similar to the work of Edogbanya (2013) who researched the assessment of the influence of contributory pension scheme on the economy between 2007 and 2010. The study found that pension fund management within the contributory pension scheme has significant positive impact on the GDP, a pointer to economic viability. This is also similar to the work of Mugoma (2013) who observed a positive and significant relationship between pension assets and economic growth in Kenya.

Furthermore, Christian and Wobiaraeri (2016) analyzed how pension fund administration impacts infrastructural financing in Nigeria. The study observed that there is a possibility for improved infrastructural development stemming from improved pension contributions in Nigeria. This implies that with better investment in real estate properties and securities, there will ultimately be improved economy. This is similar to the findings of this study where FGNS has a significant effect on GDP as well as Olaifa (2012) that documented a positive significant effect of pension fund investments on economic development in South Africa. Olaifa (2012) submitted that the benefits of pension fund investments must be available to all and should not be mere financial benefits. It should be able to generate social, financial and environmental benefits in a sustainable way.

5. CONCLUSION AND RECOMMENDATIONS

The study has documented that pension fund investment in FGNS has the capacity to contribute to the economic growth of Nigeria. Contribution to growth also affects the development of the economy as the amount of Pension fund investment in Federal Government Securities positively increases the revenue of Nigeria that could be deployed to infrastructural and social developments.

This study recommends that pension fund investments in FGNS should be encouraged for the benefit of economic growth. Federal Government should be allowed to access the growing pension funds through the issuance of development stocks or special infrastructure bonds to PFAs for the purpose of infrastructure development or Capital projects which would help the economy grow as is being done in other countries such as Singapore and other developed economies. This would help remove the dearth of Infrastructure in Nigeria.

Investment Regulations should be made more flexible and incorporate wider investment outlets for channeling investible pension funds that will help in further growing the economy. Continued partnership with relevant stakeholders by PENCOM in this regard is an imperative.

REFERENCES

- Balogun, A. (2006). Understanding the new Pension Reform Act (PRA, 2004), *CBN Bullion*, 30(2), 19-32.
- Bureau of Economic Analysis (2015). Measuring the economy: A primer on GDP and the National Income and Product Accounts. Available at: https://www.bea.gov/national/pdf/nipa_primer.pdf. Retrieved 8 August 2020
- Central Bank of Nigeria *Statistical Bulletin* (2015), Volume 26, Published July 27, 2016, <http://www.cbn.gov.ng/documents/Statbulletin.asp>. Retrieved 8 August 2020.
- Central Bank of Nigeria (2017), *Monthly, Quarterly and Annual Report & Accounts*, <http://www.cbn.gov.ng/documents/Statbulletin.asp>. Accessed on 8 August 2020.
- Central Bank of Nigeria *Statistical Bulletin* (2018), Volume 7, Published September 2018, <http://www.cbn.gov.ng/documents/Statbulletin.asp>. Retrieved 8 August 2020.
- Chamberlain, S. P. (2005). *Defined-Contribution Pension Scheme: A New Dawn in Long-Term Wealth-Accumulation for Nigerian Workers*. www.nigeriaworld.com/feature/publication/peterside/010505.html. Accessed on 4th June, 2020.
- Christian, M. L., & Wobiaraeri, O. G. (2016). Pension fund administration and infrastructure financing in Nigeria, *British Journal of Economics, Management and Trade*, 13(2), 1 – 13.
- Davis, E. P. (1995a), "Pension Funds, Retirement-Income Security and Capital Markets, an International Perspective", Oxford University Press.

- Debt Management Office, Nigeria (2019), *Frequently Asked Questions (FAQs)*, <http://www.dmo.gov.ng/fgn-bond#fgn-bonds-faqs>. Accessed on 18 July 2020.
- Devereux, S. (2001). *Social Pension in Namibia and South Africa*. Discussion Paper 379. Brighton, U. K.: Institute of Development Studies, University of Sussex.
- Dovi, E. (2008). Boosting Domestic Savings in Africa, *Journal of Rom Africa Renewal*, 22(3), 12.
- Edogbanya, A. (2013). An assessment of the impact of contributory pension scheme to Nigerian economic development, *Global Journal of Management and Business Research*, 13(2), 47-59.
- Elumelu, T. (2005). *Investment, finance and banking in Nigeria: Evolution and new opportunities*. Lecture delivered at the 2005 US – Africa summit of the Corporate Council on Africa, Baltimore, USA.
- Essien, E. A., & Bawa, E. N. (2007). Explaining growth: A cross- country analysis of West African Monetary Zone (WAMZ), *CBN Economic and Financial Review*, 43(3), 20.
- Gunu, U., & Tsado, E. (2012). Contributory pension system as a tool for economic growth in Nigeria, *International Journal of Business and Behavioural Sciences*, 2(8), 6-13. Available at www.cprenet.com/./IJBBS_12-1165.pdf. Retrieved 4th June, 2020.
- Hassan, H. O. (2008). Developing a broad-based employee pension scheme for Botswana. Johannesburg, South Africa: *Genetics Analytics*.
- Henshaw, E. T. (2012). Challenges and opportunities of assets allocation and regulatory and legal updates in the pension industry. *Paper presented at the Nigerian Stock Exchange Institutional Investors' Clinic*.
- Jablonsky, J. (2007). Measuring efficiency of production units by AHP Models. *Mathematical and Computer Modelling*, 46(7), 1091-1098.
- Koripamo-Agary, T. A. (2009). *Analytical Review of Pension System in Nigeria*. www.pencom.gov.ng/analytical-review-pension-system-in-nigeriadiscussion.doc. Retrieved 18th April, 2020.
- Mungoma, W. C. (2013). *The relationship between Pension Fund Assets and Economic Growth in Kenya*. A research work (unpublished) submitted in fulfillment for the requirements of the degree of Master of Business Administration in the School of Business, University of Nairobi.
- Nigeria Bureau of Statistics (2017). *Frequently asked questions on the rebasing of Nigeria's Gross Domestic Product*. www.nigerianstat.gov.ng/report/200. Retrieved on 8 August 2020.
- Nigeria Stock Exchange (2010). *Monthly, Quarterly and Annual Report & Accounts*. www.nse.com.ng/report/200. Retrieved on 8 August 2020.
- Njuguna, A. G. (2010). *Strategies to improve pension fund efficiency in Kenya*. A research work submitted in fulfillment of the requirements for the degree of Doctor in Business Administration in the Faculty of Business and Economic Sciences of the Nelson Mandela Metropolitan University.
- National Pension Commission (PenCom), *Monthly, Quarterly and Annual report and Accounts (2007 – 2019)*, www.pencom.gov.ng. Retrieved on 8 August 2020.

National Pension Commission (PenCom), *Nigeria Pension Reform Act No 2 of 2004 and 2014*, www.pencom.gov.ng. Retrieved on 8 August 2020.

Nwanne, T. F. (2015). Impact of contributory pension scheme on economic growth in Nigeria. *Global Advanced Research Journal of Management and Business Studies*, 4(8), 333-337.

OECD (2005). *Pension Markets in Focus*. www.oecd.org/finance-pensions/35836532.pdf. Retrieved on 8 July 2020.

OECD (2011). Pension fund investments in infrastructure: Policy actions. *OECD Working Papers on Finance, Insurance and Private Pensions*. No. 13, OECD Publishing.

OECD (2013). *Pensions at a glance: Retirement income systems in OECD Countries*. OECD Publishing.

Ogunmike, F. O. (2008). Prospects and challenges of the 2004 pension reform scheme in Nigeria, Some lessons from the chilean experience, *CBN Bullion*, 3(2), 37-46.

Olanrewaju, E. A. (2011). The Pension Reform Act 2004 and wellbeing of Nigerian retirees: A sociological evaluation of its provisions, *International Journal of Humanities and Social Sciences*, 1(21), 315- 325.

Olaifa, A. (2012). *The Impact of Pension Fund Investments on Economic Development in South Africa*. A research work submitted in fulfillment of the requirements for the degree of MA Research Programme in Development Studies in the Department of Development Studies, Faculty of Business and Economic Sciences of the Nelson Mandela Metropolitan University. Page 29.

Pagano, M. (1993). Financial market and growth: An overview, *European Economic Review*, 37(2-3), 613-622.

PenCom (2010). *Regulation on Investment of Pension Fund Assets*. National Pension Commission, Abuja. www.pencom.org.ng. Retrieved 5 August 2020.

Stiglitz, J. (1999). *Rethinking pension reform: Ten myths about social security systems*. Presented at the Conference on “New Ideas About Old Age Security” The World Bank, Washington D.C., September 14 – 15.

Securities and Exchange Commission (2011). Monthly, Quarterly and Annual Report & Accounts. www.sec.gov.ng/report/200. Retrieved on 4th June, 2020

Stock, J., & Sherbourne, S. (2004). Namibia stock exchange and domestic asset requirements: Options for the future. *Windhoek: NEPRU*.

Uwakaeme, O. S. (2015). Economic growth in Nigeria: An empirical investigation of determinants and causal relationship (1980 – 2012). *American Journal of Economics*, 5(1), 9-20.

Vittas, D. (2000). Pension reform and capital market development: Feasibility and impact preconditions. *World Bank Development Research Group. Policy Research Working Paper 2414*.

Yunusa, A. A. (2009). An evaluation of public perception on the new pension scheme in Nigeria: A study of the perception of the academic staff of Ahmadu Bello University, Zaria. *Kogi Journal of Management*, 3(1), 1-7.

