PENSION FUNDS INVESTMENT IN THE SECURITIES MARKET AND THE NIGERIAN ECONOMY

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Abstract
The study investigated Pension Funds Investment in the securities market and Nigerian Economy, sourcing to know the conducive marketplace for corporate debt and Government Securities to thrive. Employed Secondary Data and subsequently adopting the multiple regression econometric procedure of the ordinary least square (OLS) with Various preliminary and diagnostic evaluations deemed fit for further reliability carried out. The finding sin line with the stated hypotheses highlighted that pension funds invested in Government Securitiescontributed positively and significantly to the growth of the Nigerian economy. Whereas Pension funds invested in Corporate Debt Securities had unnoticed relevance on the Nigerian economy. Thus, the researcher recommended that Government should ensure prompt contribution from both the public and private sectors to facilitate the greater investment of pension funds in the capital and money markets in Nigeria as well as maintain a favorable economy to ensure the growth of pension funds in Nigeria.

Keywords: Pension Fund, Economic Growth, Investment, Government Securities, Corporate Debt Securities.

1.   INTRODUCTION

Indices all over the World shows the relevance of pension funds' assets and their contribution to propelling various economic advancement, where such assets are utilized to fund the deficit units (Gunu&Tsado, 2012). Agreeing with this fact (Njuguna, 2010) highlights that part of the growth of a nation could as well be attributed to direct or indirect investment of funds from the pension sector. It plays very significant roles in the development of the financial markets, mobilizing savings for old age welfare, pooling savings, and playing financial intermediation roles in its contribution to Nigerian GDP (Clark, as cited in Njuguna, 2010).

Hence, it's expedient for us to bring to the reader's notice that pension assets as of 2014 stood at N4.6 trillion according to (NAN 2014). Barungi in 2014 also pinpointed that pension funds had an upsurge from USD16.3 billion in deficits in 2004 to USD19.3 billion in surpluses. Hence Barungi predicted that the pension sector will hit total assets of USD 100 billion before the year 2023 with emphasis drawn from their investment potentials. In a similar plight Mrs. Nike James also forecasted that by 2024, projecting from the previous yearly increase of Pension assets, the sector may rack up assets worth N38 trillion.

Despite the favorable forecast values with pension assets, the challenges facing the sector in managing the diverse portfolios in the capital market can't be ignored, as one of the key problems opposing the managers of Pension Funds Administrators in outlay choices is the lack of investment openings. Confirming this challenge was Pencom (2008), where the commission opined that this scenario is more problematical by the restructuring activities of the economic segment (banks, and insurance corporates with no exception to stock broking outlets). The institutional framework where long-term instruments are traded such as in Nigeria is still underdeveloped, attributing 70% market capitalization to the top twenty companies operating in the space further hinges the players to fewer investment opportunities (Tsado and Gunu, 2011).

Regulatory activities also restrict pension fund managers from making adequate investments in the capital market. (BGL, 2010). The following questions became inevitable: What is the general contribution of pension funds invested in the capital market to the growth and development of the Nigerian economy? To what extent has the risk prevalent in the capital market affected Pension Fund Investment management in Nigeria? Is the capital market a good platform for pension funds to have a multiplier effect?

This paper critically evaluates the securities market as a facilitator of pension funds in contributing to Nigerian economic growth. However, the specific objective is to; Determine how pension funds invested in Corporate Debt Securities have contributed to the growth of the Nigerian economy, and Determine how pension funds invested in Government Securities have contributed to the growth of the Nigerian economy. In achieving the set goal, we hypothesized that: Pension funds invested in Corporate Debt Securities have significantly contributed to the growth of the Nigerian economy; Pension funds invested in Government Securities have significantly contributed to the growth of the Nigerian economy.

2.   REVIEW OF LITERATURE

Theoretical Framework
Markowitz Portfolio Theory

Markowitz's efficient theory of diversification of investment is mostly adopted by insurance corporates where investing is often linked with decisions for higher to lower returns, similarly risk depending on the range of anticipated returns which is the center of this paper where a prudent evaluation is made on the results of Pension funds management hence, making adequate returns on investments and ensuring economic growth at large.
This Markowitz efficient behavior exhibited by insurance companies while investing is usually associated with five cardinal patterns:
   a. Preference for more returns on investment to fewer returns.
   b. Envisaging expected returns on investment to depend on possible current returns.
   c. Envisaging risk on investment as directly depending on the size of expected returns.
   d. Preference of less risk to more risk.
   e. Saving/premium-investment (intermediation) decisions are based on the parameters of risk and returns.

Empirical Review
As indicated in 2019 by Leyira and Batido on the role of Pension in the Nigerian economic upsurge. Using secondary data with the same source as our studies and adopting the OLS method to fill a time gap from 2014-2016 realized that a great level of significant influence on the development of the economy was a result of movements in pension funds invested in various economic openings by the public sector whereas that of the private sectors influence wasn't noticeable. Similarly, Oyadiran and Dagauda 2018 took time to delve into the extent to which various pension policies improved the living standards of public office holders pinpointing to Federal Government established ministries. In conclusion, it was brought to the limelight that indeed pension funds execution had a great improvement in the welfare of such officeholders.
Tracing some empirical by Shouji 2017 to find out the impact of Pension Pensions development in the financial sector in Chile. Using VAR and co-integration analysis discovered that there existed a positive significant impact of Pension on development in the financial sector in Chile. However, the study employed both qualitative and quantitative data to further its analysis whereas our study is centered on quantitative data.
Enache and Laura Raisa (2015) in the study investigated how impactful pension funds are in the capital market in 10 European countries spanning from 2001-2010. It was revealed that long termPension funds are absent in the capital market however a significant relevance was noticed in the short run. Edogbanya (2013) also researched on how contributory pension impacted on the development of the Nigerian economy. The study covered a time gap from 2007 to 2010 using surveys primarily aided to make its findings from about 70 customers and staff of Legacy Pension Ltd. Correlation analysis was also employed subsequently for secondary data generated for the survey reports to aid the findings. In the concluding part the paper opined that contributory pension scheme cannot be overemphasized as its vital role proves significant.
Nyong and Duze (2011) researched on PRA 2004 in Nigeria, particularly paying attention to retirement plans. Haven adopted primary data with multi-stage sampling from 300 teachers in federal schools. The paper was quick to highlight no relevant achievement of the reform act as the propels that prompted the establishment of the PRA 2004 still existed. Nnanta, Okoh and Ugwu

(2011) considered the views of so many respondents in analyzing the social security planning is impacted by pension reforms in Nigeria. The content analysis adopted by the researchers to aid findings reveal that PRA 2004 drastically improved the economic wellbeing of the Nigerian workforce, subsequently facilitating greater level of economic security.

Meng and Pfau (2010) also investigated the functions of pension funds in capital market securities adopting the panel data analysis. There findings show that pension funds in the capital market are of different levels in significantly propelling the debt of financial growth in advanced financial markets. Thus, concluding on the significance of pension funds on the development of financial sector.

In the research carried out by Dostal (2010) on pension reforms and Nigerian financial market from 2006 to 2010. It was revealed that pension reforms had no meaning impact on the development of Nigerian financial sector. Further stressing that adequate investment cannot be attributed to savings from pension. Stating faded government credibility and weak regulatory environment to foster pension schemes and financial sector development.

3.   METHODOLOGY

Using the ex post facto design, the population covered the insurance industry in Nigeria from the Period of 2008 to 2019. Hence, analyzing secondary data sourced from various Central Bank of Nigeria and the National Insurance Commission with the aid of the Augmented Dickey-Fuller test, OLS, and various diagnostic evaluations deemed fit for further reliability. All test decisions were evaluated at a 5% significant level.

Model Specification

GDP=F (PFICDS, PFIGS) ……………………….…………………………………………. (1)
Thus, equation (1) is explicitly transformed into econometric and operational form.
$GDP = \beta_0 + \beta_1 PFICDS + \beta_2 PFIGS + \mu$ …………………….…………………….… (2)
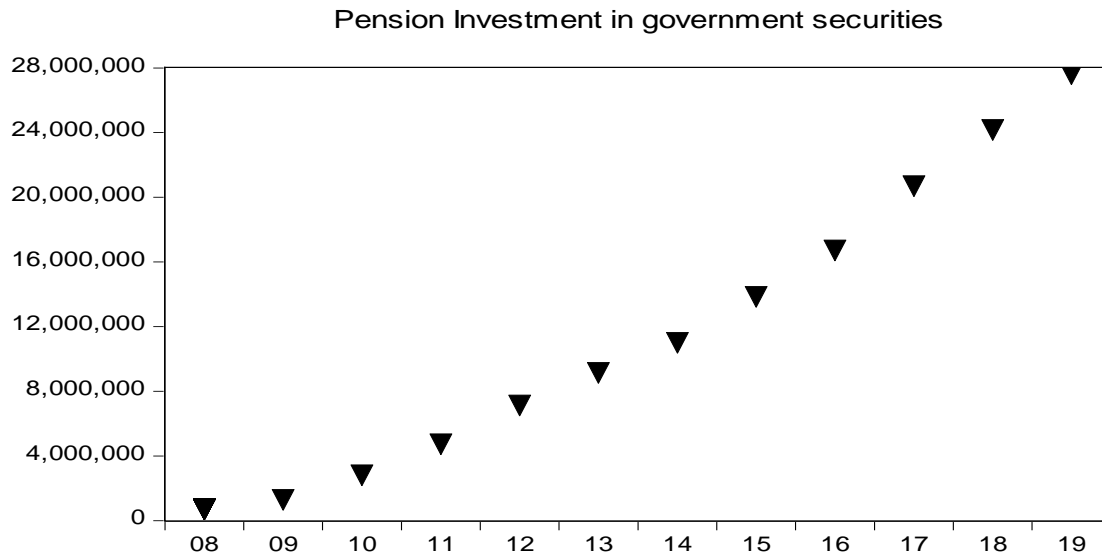
Where:

GDP =   Gross Domestic Product at constant a basic price
PFICDS = Pension funds invested in Corporate Debt Securities
PFIGS = Pension funds invested in Government Securities
$\beta_0, \beta_1, \beta_2, \beta_3$ = constant parameters or intercept of a regression line which capture the effect of the entire variable excluded from the equation.
β_0, capture the effect of all the variables estimated from the equation, while β_1, β_2, and β_3 represent ent the effect of change in a dependent variable from independent variables.
μ = the error term which is the disturbance term or random variable.

4.   RESULTS AND DISCUSSION

Figure 4.1 shows the trend analyses of the variables under observation in Nigeria from 2008-2019.

Gross Domestic Product

Pension Investment in corporate debt securities

Pension Investment in government securities
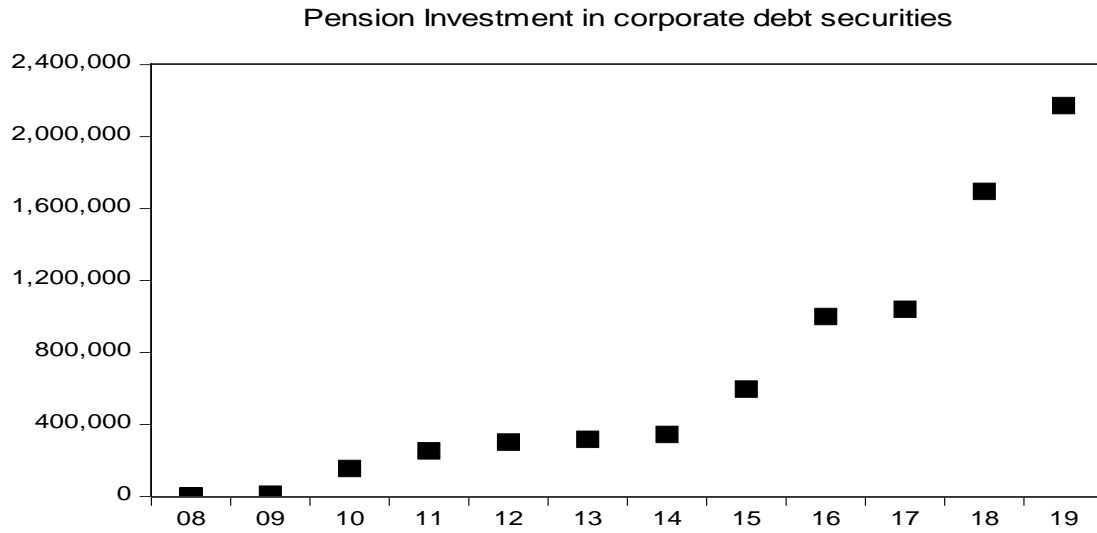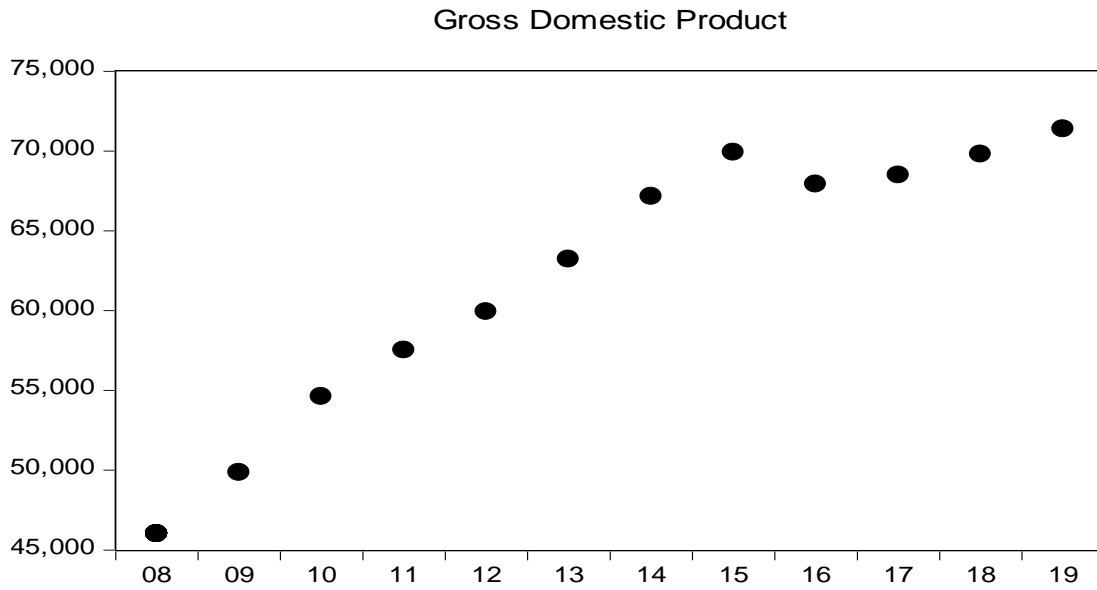
Source: Eview Author's computation 2023

The graphs above indicate a continuous rise in Gross Domestic Product at a constant price, Pension funds invested in Government Securities, and Pension funds invested in Corporate Debt Securities in Nigeria from 2008-2019.

Table 4.1 Augmented Dickey-Fuller Test for Stationarity of Data

Variable	Order of integration	Prob-value
GDP	2	0.0039
Investment in corporate debt securities	2	0.0002
Investment in government securities	2	0.0037

Source: Eview Author's computation 2023
All Variables were integrated into second order before proceeding with further analysis using the Augmented Dickey-Fuller test. However, haven noticed that further reliability and diagnostic tests using the second order differencing didn't prove reliable. subsequent analysis were carried out using natural log of all variables as it best suit the various reliability and diagnostic tests for our findings.

Table 4.2 Correlation Analysis

	LNGDP
LNGDP	1
LNPFICDS	0.93818223567789
LNPFIGS	0.9874551333068999

Source: Eview Author's computation 2023
gross domestic product at constant price had a very strong relationship with pension investment in corporate debt securities with values of 0.94 which is very close to 1. On the other hand, there exist

a strong correlation also between gross domestic product and pension investment in federal government securities with correlation value of about 0.99 showing a stronger relationship.

Table 4.3 Granger Causality

Pairwise Granger Causality Tests
Date: 04/26/23   Time: 19:49
Sample: 2008 2019
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNPFICDS does not Granger Cause LNGDP	10	0.75763	0.5159
LNPFIGS does not Granger Cause LNGDP	10	7.07503	0.0348

Source: Eview Author's computation 2023

Adopting the Pairwise Granger Causality Tests to find out the causal effect of our variables. Pension investment in federal government securities with prob value of 0.0348 had causal effect on Gross domestic product at constant price, however the significance of the effect is to be determined by further analysis. Pension investment in corporate debt securities from the result above had no granger effect on GDP at constant price.

Table 4.3 Descriptive Statistics. Summary of Descriptive Results

	GDP	PFICDS	PFIGS
Mean	62153.11	657599.2	11752143
Median	65185.76	330745.5	10172344
Maximum	71387.83	2172722.	27718592
Minimum	46012.52	1070.030	803031.9
Std. Dev.	8523.085	690398.3	9067241.
Skewness	-0.663263	1.106235	0.426416
Kurtosis	2.108061	3.036260	1.931267
Jarque-Bera	1.277612	2.448171	0.934757
Probability	0.527922	0.294026	0.626643
Sum	745837.3	7891190.	1.41E+08
Sum Sq. Dev.	7.99E+08	5.24E+12	9.04E+14
Observations	12	12	12

Source: Eview Author's computation 2023

Gross Domestic Product at constant the ice has a Median of 65185.76 and a mean value of 62153.11 with minimum and maximum values of 46012.52 and 71387.83. The degree of the

distribution of GDP is negatively skewed with a value of -0.663263. Gross Domestic Product has a flat curve being Platykurtic with a Kurtosis value of 2.108061 which indicates a lowers valuee than the sample mean of 62153.11. Pension funds invested in Corporate Debt Securities (PFICDS) have a Median of 344379.9 and mean value of 717283.7 with minimum and maximum values of 11833.52 and 2172722. The degree of the distribution of Pension funds invested in Corporate Debt Securities (PFICDS) is positively skewed with a value of 1.106235. Pension funds invested in Corporate Debt Securities is Mesokurtic with a normal distribution of Kurtosis value 3.036260.

Table 4.4 Regression Result

Dependent Variable: LNGDP
Method: Least Squares
Date: 04/26/23   Time: 19:42
Sample (adjusted): 2011 2019
Included observations: 9 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.720607	0.236842	36.82035	0.0000
LNPFICDS-	-0.009442	0.011134	-0.848022	0.4290
LNPFIGS	0.153693	0.023018	6.677082	0.0005

R-squared	0.980682	Mean dependent var	10.98586
Adjusted R-squared	0.974242	S.D. dependent var	0.144606
S.E. of regression	0.023208	Akaike info criterion	-4.427437
Sum squared resid	0.003232	Schwarz criterion	-4.361696
Log likelihood	22.92347	Hannan-Quinn criter.	-4.569307
F-statistic	152.2939	Durbin-Watson stat	1.679876
Prob(F-statistic)	0.000007		

Source: Eview Author's computation 2023

From the estimated regression result in table 4.4 above a 0.009 decrease in Pension funds invested in Corporate Debt Securities (PFICDS) will lead to a corresponding growth of 8.72 in Gross Domestic Product at a constant price. The coefficient indicates that a 0.153693 increase in Pension funds invested in Government Securities (PFIGS) will lead to a corresponding rise in Gross Domestic Product at a constant price. To this effect the influence of Pension funds invested in Corporate Debt Securities (PFICDS) and Pension funds invested in Corporate Debt Securities (PFICDS) on Gross Domestic product at a constant price is 98% as indicated by the R-squared meaning a greater portion of variations is caused by the independent variable, hence 2% is explained by the error term. The Durbin-Watson value of 1.679876 shows there is absence of auto serial correlation of our result. The Probability (F-statistic) of 0.0000007 also indicates the investigation is statistically significant.

Test of hypotheses

The probability value of 0.0005 indicates that Pension funds invested in Government Securities (PFIGS) had a positive significant effect on Gross Domestic Product at a constant price in Nigeria from 2008-2019.

However, the probability value of 0.4290 indicate that Pension funds invested in Corporate Debt Securities (PFICDS) had no significant effect on Gross Domestic Product at a constant price in Nigeria from 2008-2019.

Figure 4.2 CASUM Stability Diagnostic Test
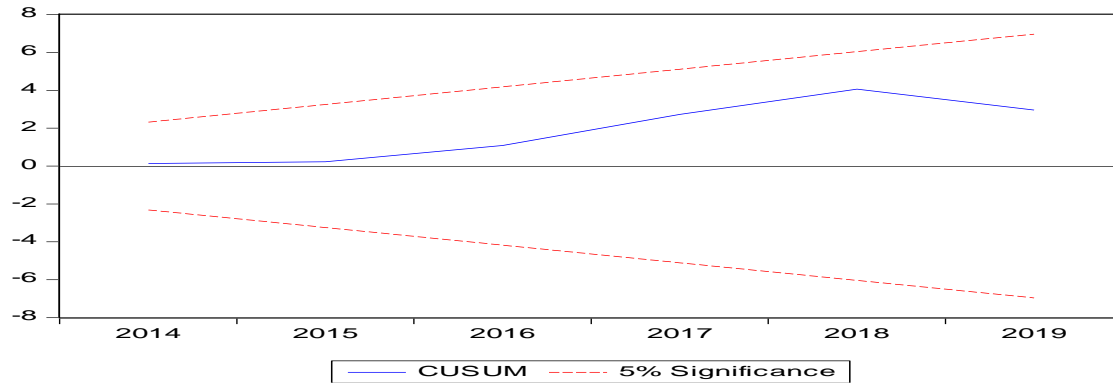
Source: Eview Author's computation 2023

The CASUM test is adopted to ensuring further reliability of our result on pension funds invested in Government Securities (PFIGS) and Corporate Debt Securities (PFICDS) on Gross Domestic Product at a constant price in Nigeria from 2008-2019. Thus, the CASUM test adopted reveal that our blue line falls between our criteria level 0.05 significant level. However, the CASUM of square test is also carried to confirm a stronger level of stability of our findings for meaningful conclusion of findings.

Figure 4.3 CASUM of Square Stability Diagnostic Test

The
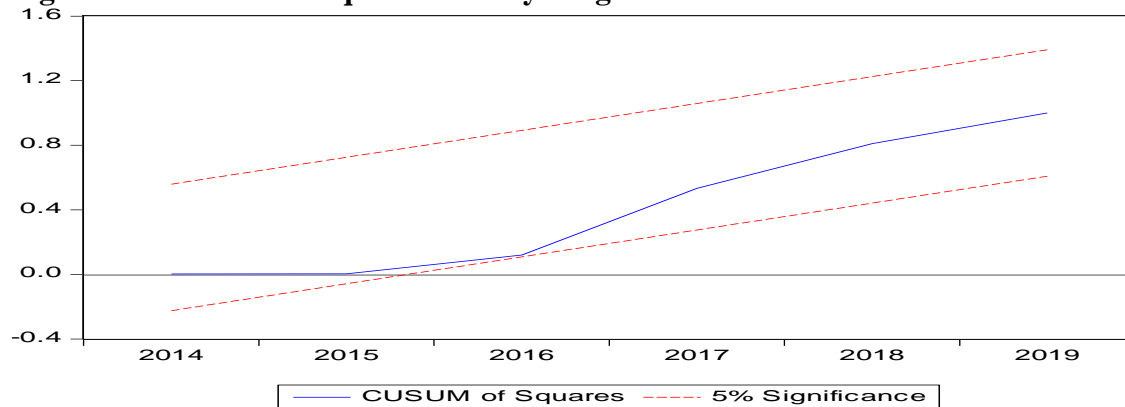
Source: Eview Author's computation 2023

The CASUM of square test agrees that the result revealed in relation to pension funds invested in Government Securities (PFIGS) and Corporate Debt Securities (PFICDS) on Gross Domestic Product at a constant price in Nigeria from 2008-2019 is stable and reliable as the blue line in the figure above falls between our criteria level 0.05 significant level.

Table 4.5 Ramsey RESET Stability Diagnostic Test

Ramsey RESET Test
Equation: UNTITLED
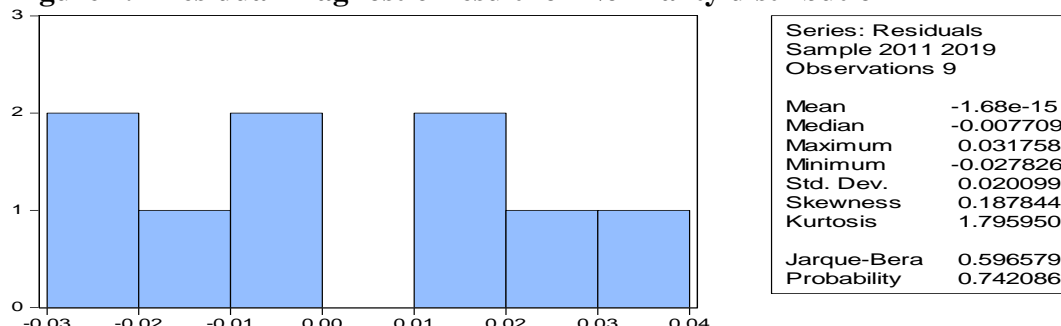Specification: LNGDP C LNPFICDS LNPFIGS
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.290013	5	0.7834
F-statistic	0.084108	(1, 5)	0.7834
Likelihood ratio	0.150135	1	0.6984

Source: E Eview Author's computation 2023
The Ramsey Reset test as carried out above also validates that our data and result is free from errors. The probability values as highlighted int table 4.5 which are greater than our 0.005 level of criteria justifies this fit.

Figure 4.4 Residual Diagnostic Result for Normality distribution

Series: Residuals	
Sample 2011 2019	
Observations 9	
Mean	-1.68e-15
Median	-0.007709
Maximum	0.031758
Minimum	-0.027826
Std. Dev.	0.020099
Skewness	0.187844
Kurtosis	1.795950
Jarque-Bera	0.596579
Probability	0.742086

Source: Eview Author's computation 2023
Further justification of our result with Jarque-Bera probability value of 0.742086 which is higher than 0.05 level of significance shows that out data set is normally distributed and free from been biased.

Table 4.6 Breusch-Pagan-Godfrey Residual Diagnostic Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.319683	Prob. F (2,6)	0.1794
Obs*R-squared	3.924510	Prob. Chi-Square (2)	0.1405
Scaled explained SS	0.694159	Prob. Chi-Square (2)	0.7067

Source: Eview Author's computation 2023

The Breusch-Pagan-Godfrey Heteroskedasticity test adopted for the study revealed that probably values of 0.1405 and0.7067 for corporate debt and government securities made the results reliable for conclusion.

Discussion of Results
From the estimated regression result in table 4.4 above a 0.009 decrease in Pension funds invested in Corporate Debt Securities (PFICDS) will lead to a corresponding growth of 8.72 in Gross Domestic Product at a constant price. The coefficient indicates that a 0.153693 increase in Pension funds invested in Government Securities (PFIGS) will lead to a corresponding rise in Gross Domestic Product at a constant price. To this effect the influence of Pension funds invested in Corporate Debt Securities (PFICDS) and Pension funds invested in Corporate Debt Securities (PFICDS) on Gross Domestic product at a constant price is 98% as indicated by the R-squared meaning a greater portion of variations is caused by the independent variable, hence 2% is explained by the error term. The Durbin-Watson value of 1.679876 shows there is absence of auto serial correlation of our result. The Probability (F-statistic) of 0.0000007 also indicates the investigation is statistically significant.

The probability value of 0.0005 indicates that Pension funds invested in Government Securities (PFIGS) had a positive significant effect on Gross Domestic Product at a constant price in Nigeria from 2008-2019. However, the probability value of 0.4290 indicate that Pension funds invested in Corporate Debt Securities (PFICDS) had no significant effect on Gross Domestic Product at a constant price in Nigeria from 2008-2019.

5.   CONCLUSION AND RECOMMENDATION
Having investigated explicitly the impact of Pension funds invested in Government Securities and Pension funds invested in Corporate Debt Securities on the gross domestic product at a constant price in Nigeria from 2008-2019 the findings from the study conclude that Government Securities (PFIGS) contributed positively and significantly to the growth of the Nigerian economy. Whereas Pension funds invested in Corporate Debt Securities had unnoticed relevance on the Nigerian economy. Hence, it is recommended that: Government should ensure prompt contributions from both the public and private sectors to facilitate the greater investment of pension funds in the capital and money markets in Nigeria; Micro pension should also be encouraged in Nigeria to enable large participation in contributing to economic development via pension fund investment; and the government should as well maintain a favorable economy to ensure the growth of pension funds in the money and capital markets in Nigeria.

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