EFFECT OF PENSION FUND INVESTMENT ON PERFORMANCE OF CAPITAL MARKET IN NIGERIA

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Abstract
The study investigates how Nigeria's capital market performed between 1999 and 2021 in relation to pension fund investments. Pre-estimation tests were conducted on each of the variables using the Augmented Dickey Fuller (ADF) unit root test to eliminate erroneous regression effects. The co-integration result was then examined using the ARDL (Autoregressive Distributed Lag) bound test approach, which showed that the performance of Nigeria's capital markets and pension fund investments have reached a long-term equilibrium. The study's conclusions demonstrated that net asset value significantly influences the Nigerian capital market's performance. This suggests that a growth in net asset value is related to an improvement in the capital market's financial performance. The study also demonstrated that equity has a large impact on Nigeria's capital market's performance. Based on these findings, the study suggests that the government ensure that pension funds make adequate investments since doing so will enable Nigerian retirees to have access to sufficient resources to meet their long-term care needs, which will improve the performance of the capital market. There is a need for sufficient rules of the administrators and custodians of pension funds in Nigeria, as well as for policies that support market structure and effective portfolio investing.

Keywords: Pension Fund Investment, Net Asset Value, Equity, All Share Index, and Nigeria

1. Introduction

The aging of the world's population and the resulting demographic shift are expected to have a large financial influence in the ensuing decades. The number of resources and transfers controlled by traditional pay-as-you-go (PAYG from here on) systems is likely to expand because of such a demographic transition in particular (Allen, Clark & McDermed, 2013). Due to these factors, numerous developed and developing nations have undergone significant reforms, particularly in the last 20 years, with the dual objectives of ensuring the mandatory PAYG pillar's long-term viability and encouraging complementary, private retirement savings through the creation of pension funds (Allen, et. al., 2013).

In search of yield, pension funds all around the world are increasingly investing in new asset types. Due to its ability to diversify assets and match long-term pension funds, the capital market is one investment method that is widely debated. As a result, most investments made by pension funds are in securities that are subject to regulation, and they are carried out through open, regulated, and open trading

platforms. The assets of pension funds are valued on a market-to-market basis, except for bonds. The RSA Funds' daily valuation reports are submitted electronically to the commission, whereas the CPFA Funds and Approved Existing Schemes' monthly valuation reports are (PenCom, 2014). The RSA Funds are valued daily because of Contributors' daily admission and withdrawal. Instructions on the administration and investment of assets held in trust for the benefit of contributors in pension funds may only be given by approved Pension Fund Administrators (PFAs). Except for permissible investments made outside of Nigeria, the PFCs' contractual obligations to PFAs forbid them from contracting out the safekeeping of pension fund assets to other parties. When hiring a worldwide custodian for certain permissible foreign investments, the PFC must first receive prior clearance from the commission (PenCom, 2014).

In Nigeria, the Pension Reform Act (PRA) and the Pension Reform Act 2014 were both passed and are currently in effect. The Act that created the New Contributory Pension System covers workers in the public and private sectors. Each employee and employer are required to contribute a minimum of 7.5% of the employees' monthly income to the plan, even though in the military each officer is only required to contribute 2.5% and the corporation is required to contribute the remaining 12.5%. Employers may choose to make contributions on behalf of their personnel as long as the overall contribution does not go below 15% of the employees' monthly wage. Workers may also make voluntary contributions to the plan (including those exempt from the Act); If these donations are made more than five years after the initial voluntary contribution, they are the only ones that can be withdrawn and become taxable. The Pension Reform Act of 2014 raised the minimum rate of pension contribution from 15% to 18% of monthly compensation, with 8% contributed by the individual and 10% by the company. This was done to ensure the financial security of every retiree in Nigeria after retirement. A defined contribution fund, that is. The departing employee receives the money.

The employer contributes the employee match, and the monthly contribution is collected from each employee's pay, making the new pension plan in Nigeria fully financed. After that, both contributions are added to the appropriate retirement savings account. The pension assets are set aside from the start to cover future pension liabilities since every employee is required by law to open a Retirement Savings Account (RSA) in his name with a Pension Fund Administrator (PFA) of his choice. The statute also mandated that the assets accumulated for pension funds must be invested in securities and equities, the profits from which must be distributed to retirees. Pension funds are usually the largest institutional investors in a nation since they manage relatively large amounts of capital. This has led to the asset

backing of many pension systems today. As a result, there is now a closer connection between the success of these investments and retirement income. Due to their expertise in assessing risks and investment opportunities, pension funds are believed to perform better and make the most of their assets. As a result, institutional investors using pension funds are given the duty of developing and managing their wealth prospects.

The capital market is a place on the financial market where companies and governments can raise long-term capital by selling debt or equity instruments. It is a market where loans are provided for periods longer than a year, and it is important for a nation's economic growth (Sheffrin, 2013). It benefits the economy by providing financial resources for the support of long-term activities through its intermediation mechanism. According to Meng and Pfau (2010), the growth of funded pension plans will have a substantial long-term impact on the stability and development of the financial markets. Considering this, in the absence of a functioning capital market, the economy might not have the long-term resources needed for sustainable growth. Regulating organizations, however, mandate that pension funds invest a large portion of their resources in a range of local assets to distribute their risk as far as possible across the nation. According to Henshaw (2012), investing pension funds could provide long-term funding for the country's economic and social development. There have been numerous studies in this field, but most of them concentrated on the impact of pension fund investments on financial institutions, social transformation, and economic growth in Nigeria. Finding out how it impacts Nigeria's stock market performance will be interesting.

In general, assets must be effectively invested through investment vehicles that can offer lower risk, the security of the fund, and higher returns to guarantee that future pension benefits from savings in a pension plan, particularly a contributing pension scheme, will be paid. One such place to invest is the stock market. The capital market is an essential resource for boosting productivity and engaging in investment activities that support quick industrial and economic growth (Ogege & Ezike, 2012). The effective allocation and mobilization of capital for investment goals is the core function of the Nigerian capital market. The market creates mechanisms to channel savings from numerous types of surplus economic units into the production process, hence fostering economic growth and development.

The anticipated effects on long-term efforts including home construction, power production, road construction, and healthcare facilities have not yet materialized in full despite the expansion of the Nigerian capital market. Basic infrastructure necessities like good road networks, portable water,

affordable housing programs, appropriate education and amenities, enough power supplies, and medical facilities are still lacking in Nigeria (Tule, et. al., 2015). When it reached its peak in 2011 at 13.05% of market capitalization, the bond capitalization of the Nigerian Stock Exchange market had a stake of less than 1% of the entire market capitalization in 2014. (CBN 2014). This implies that the bond market is less active, which reduces the market for long-term development financing. However, through a pilot study, the researchers found that the capital market's performance in terms of the all-share index is still behind expectations, despite pension funds' concentration on investing in net asset value and equity. On this same foundation, the study poses the following research issues.

This study's primary goal was to determine how pension fund investments affected Nigeria's capital market's performance. Other goals include assessing the impact of equity on performance (all share index) in Nigeria and investigating the impact of net asset value on performance (all share index).

The hypotheses of the study are stated in null forms and tested from the objectives of the study:

Ho_1: Net Asset Value has no significant effect on the performance of all share index in Nigeria.

Ho_2: Equity has no significant effect on the performance of all share index in Nigeria.

Previous studies, including that of Nageri, et al. (2019), who used ARDL bound testing to examine the long-term relationship between pension funds and capital market development in Nigeria, discovered a positive and substantial association between the variables. Additionally, Orbunde et al. (2018) found a positive connection between the pertinent variables when they employed the Ordinary Least Square (OLS) approach to evaluate the impact of pension fund investments on Nigerian capital market performance. Finally, Catalan et al. (2011) established a statistically significant relationship between the independent and dependent variables when they investigated if there is a granger-causality relationship between the capital market All Share Index (ASI) and contractual savings made through pension funds. None of these studies, however, combined net asset value with equity to represent investments made by pension funds and all-share index to represent the capital market. Unfortunately, no study considered the period from 1999 to 2021 as the scope of their investigation. The life cycle hypothesis was not adopted as a theoretical foundation by any.

2. Review of Literature

2.1 Conceptual Review

Concept of Pension Fund Investment

Pension fund investments aim to raise enough money (contribution) through savings to have a fully funded pension plan. To benefit shareholders, the interests of the employee after retirement, and to successfully contribute to economic growth, the system encourages irresponsible individuals to save. A recognized institutional investor that produces long-term contractual savings and encourages the growth of the securities market is pension fund investment (Mesike & Ibiwoye, 2012). Pension funds are financial intermediaries that aggregate money and invest it for later distribution to members as pensions. Typically, non-financial companies sponsor them (Ndum, Okoye & Amahalu, 2019). One of the most significant institutions in various national financial markets are pension funds.

Due to this, the primary goals of pension investment are to ensure that contributors receive adequate, affordable, and sustainable benefits, to ensure the safety and security of funds, to ensure that there is enough liquidity to pay all contributors' pension benefits when they are due, and to optimize the trade-off between risk and return through strategic asset allocation. Government securities, corporate bonds and loans (including REITs, mortgage-backed securities, and asset-backed securities), money market instruments, common stocks, and open-end and closed-end funds are among the asset classes available for investment (Eyamba, 2018). All active young donors under the age of 49 would be included in Fund 2 under the new fund structure, and 60 to 70 percent of donations would be invested in bonds and treasury bills. The remaining amount would be invested in the money market and other assets (Bassey, 2018). Fund 3 is a pre-retirement fund with 80% of the money invested in bonds and treasury bills for adults between the ages of 50 and 60. The fourth fund would be a retirement fund for people who are 60 years of age and older. Given that the various funds are designed to match the ages and risk profiles of donors, the introduction of multi-fund investment structures for Retirement Savings Account (RSA) funds would handle the changing risk appetite of contributors (Bassey, 2018).

Concept of Capital Market

By dividing the share price by the total number of issued and traded shares, one can calculate a company's capitalization. The overall capitalization of a financial market is equal to the entire capitalization of the listed companies. A key indicator for determining the value of stocks and of companies in general is market capitalization (Toramane et al, 2019; Dias 2013).

Long-term capital can be raised through the Nigerian capital market, which is a part of the nation's financial system. Major fund borrowers including businesses, the federal government, local governments, and the business community are all satisfied by this market. The Nigerian capital market consists of two markets (the primary and secondary markets) and a few operating institutions (Matthew & Odularu, 2019).

The Securities and Exchange Commission (SEC), which regulates the market from atop, the Nigerian Stock Exchange (NSE), issuing houses, stock brokerage firms, and the SEC are the main participants in the capital market. Nigeria's secondary market is called the NSE. Nigeria's capital market generally promotes the nation's industrialization and economic expansion. It also improves the gearing of the domestic corporate sector and reduces its dependency on borrowing. The Nigerian capital market's framework serves as the foundation for both the stimulation of institutional development and access to financing for new and smaller businesses (Matthew & Odularu, 2019).

2.2 Empirical Review

Ndum, Okoye, and Amahalu (2019) investigated the relationship between Nigeria's economic progress and pension fund asset investment using time series data covering a twelve-year period, from 2006 to 2017. The National Pension Commission (PenCom) annual reports, the Central Bank of Nigeria, the National Bureau of Statistics, and the World Bank development indicator (database) of 21 licensed pension fund administrators as of December 31, 2017, were among the sources used to compile secondary data for the period. Using the Augmented Dickey-Fuller test and the statistical tool E-views 9.0, the acquired data were analyzed and assessed for unit root. According to the suggested hypotheses, three models were estimated using the ordinary least squares techniques. Gross domestic product at the 5% level of significance, assets in pension funds, donations to pension funds, and investments made by pension funds. The findings showed that the variables had a favorable significant outcome.

Using an ARDL bound testing methodology, Nageri, Adekunle, and Taiwo (2019) examined the long-term connection between Nigeria's capital market development and pension funds. The system reaches long-term equilibrium at a rate of 113%, proving that the variables have long-term co-integration. There was no such association between the real interest rate and the stock market, but the research did find a short-run causal relationship between inflation and the stock market at a 5% significance level and one between pension fund assets at a 10% significance level.

In a 2018 study, Orbunde, Lambe, and Bako examined how Nigeria's stock market performance was impacted by pension fund investments. Ordinary Least Square (OLS) was employed in the study to contrast the correlations between the pertinent variables. Market Capitalization, All Share Index, and Debt Capitalization are factors that generated interest during the 2008 to 2018 study period. Relevant secondary data were collected from a variety of sources to accomplish these goals. The findings show

that market capitalization and debt capitalization are positively and significantly impacted by the pension fund's net asset value, whereas the all-share index of the economy is negatively and hardly affected.

2.3 Theoretical Framework

Life-Cycle Theory

Franco Modigliani and his student Richard Brumberg advanced this theory in the early 1950s. The start-up, growth, and maturity phases can be used to categorize the growth of a pension fund, according to the hypothesis. The theory explains the three stages of a pension fund administrator's development and the related financial requirements. The Life-Cycle Hypothesis (LCH) is an economic hypothesis that examines how people spend and save money over the course of their lifetimes. The idea further assumes that people budget their lifetime expenses while considering their anticipated income. They take on debt as a result while still in their youth because they think they will be able to pay it off with their future earnings. To sustain their level of spending after retirement, they start saving in their middle years. Because of this, wealth accumulation has a hump-shaped pattern, with youth and old age having lower rates and middle age having greater rates (Modigliani, 1966 in Deaton, 2005).

3. Methodology

Ex-post facto design was chosen as the research method for this study. This research design, according to Onwumere, et. al., (2013), is the statistical correlation between dependent and independent variables with the aim of establishing endogenous variables between them. The population comprised of all the pension fund investment of net asset value and equity to performance of capital market (all share index) in Nigeria, which was sourced from a secondary data view because it involves a time series data. These secondary data were gathered from the World Bank Economic Reports, the CBN Economic Reports and Financial Statistical Bulletin, National Bureau of Statistics Economic Reports and PENCOM Publications. Annual data was used and covers the period of 1999 to 2021 that is, 23 years. The annualised secondary data was analysed with the aid of Autoregressive Distributed lag (ARDL) and Error Correction Mechanism (ECM), as well as employing the co-integration method to test for the long-run effect among the series. In other words, the underlining postulation was that the two variables are blended in order 1 or I (1).

Model Specification

Unit Root Test

Non-stationarity is frequently a false issue in regression that contributes to misleading results for estimators and test statistics (Gujarati & Porter, 2009). Empirical time series suffer from the issue of non-stationarity, which makes traditional econometric methods like two stage least square and ordinary least square ineffective. We assume a random walk model (RWM) to get the unit root properties:

$$Y_t = \rho Y_t + \upsilon_t \qquad -1 \le \rho \le 1 \qquad ------(1)$$

Where: Y_t is a vector of the variables specified in the model. In the equation (1) above, we simply regress Y_t on its one-period lagged value Y_{t-1} and find out if estimated ρ is statistically equal to 1; if the latter condition is satisfied, then Y_t is stationary. For ease of estimation of the equation above using OLS, it is hereby transformed as follows:

$$\Delta Y_t = \delta Y_{t-1} + \upsilon_t \quad ------(2)$$

Where:

$\delta = (\rho - 1)$ and Δ represents the first difference operator. We proceed to estimate equation above and test the null hypothesis that $\delta = 0$, and the alternative hypothesis that $\delta < 0$, if $\delta = 0$, then $\rho = 1$; this implies the existence of a unit root and suggests that the series is non-stationary.

Augmented Dickey Fuller test (ADF)

A different approach to decision-making using crucial tau statistics was presented by Dicky and Fuller (1979) based on Monte Carlo simulations based on equation (2) above. As the Dickey-fuller test assumed that the error term was uncorrelated but in instances where are correlated, the advanced Dickey-fuller (ADF) test, a complex unit root test, was devised. The study will take advantage of this new unit root test variation to determine the proper lag time needed to address the serial correlation issue in the error term. The lagged values of the dependent variable are added to the equation above by the ADF test ΔY_t;

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{1-1}^{m} \alpha_i \Delta Y_{t-1} + \varepsilon_t \quad ------(3)$$

Where:

$\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2})$, ε_t is a term for pure white noise mistake. Empirical analysis is used to identify the appropriate number of delays. Researchers frequently use the appropriate lags to guarantee that the

error term is serially uncorrelated thus producing an unbiased estimate for δ (the coefficient of lagged Y_{t-1}).

Giving the theoretical review, the econometric model employed in this study to examine the effect of pension fund investment on the performance of capital market in Nigeria was formulated following the study of Catalan, et. al., (2011) with a slight modification to suit the adaptation of this study. Thus, the model for this study was specified as:

Performance of Capital Market = f (net asset value, equity) .....(4)

$$ASI = \beta_0 + \beta_1 NAV + \beta_2 EQU + \varepsilon \quad \text{.....(5)}$$

Performance of Capital Market is measure by (*All Share Index)*
Pension Fund Investment is measured by (Net Asset Value and Equity)
Where:
ASI = All Share Index; NAV = Net Asset Value; EQU = Equity
ε = error term; β_0= Constant
β_1=β_2 coefficient parameters

By incorporating our connection between pension fund investment and capital market performance into the unconstrained ARDL model, we might develop the constrained ARDL steady-state model (which was achieved by using OLS methods to estimate the general ARDL model). According to appearance:

$$\Delta log(ASI)_t = \alpha_0 + \sum_{i=1}^{m} \alpha_1^i \Delta log(ASI)_{t-i} + \sum_{i=1}^{m} \alpha_2^i \Delta log(NAV)_{t-i} + \sum_{i=1}^{m} \alpha_3^i \Delta log(EQU)_{t-i} + \lambda_1 log(ASI)_{t-1} +$$

$$\lambda_2 log(NAV)_{t-1} + \lambda_3 log(EQU)_{t-1} + \mu_{1t} \quad \text{.....(6)}$$

α_0 = Intercept or drift operator; $\alpha_1 - \alpha_3$ = coefficients of short run dynamics; $\lambda_1 - \lambda_3$ = Long run multipliers; Δ = First difference operator; k = Respective specific optimum lags orders of the variables entering ARDL-ECM; ε_t = Error term; t = time

The study would then continue and use an unlimited error correction model to assess the short-run dynamics and long-run impact. once the co-integration relationship between the variables has been established. The short-run dynamics of the error correction model (ECM) are affected by the divergence of the current state from its long-term connection since the ECM is a dynamic system. The ECM class of multiple time series models provides an explicit estimate of how quickly the dependent variable returns to equilibrium following a change in the independent variables. Following position of Catalan, et. al.,

(2011), the relationship between pension fund investment and performance of capital market is specified as:

$$\Delta log(ASI)_t = \alpha_0 + \alpha_1 \Delta log(ASI)_{t-i} + \alpha_2 \Delta log(NAV)_{t-i} + \alpha_3 \Delta log(EQU) + \delta ect_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots(7)$$

The ect_{t-1} captures the process by which agents evolve their output to correct for previous period's prediction failures.

4. Data Analysis and Results

Descriptive Statistics

Descriptive or summary statistics were applied to the data to gain an understanding of the traits and behavior of the data used in the research. It assisted the research in comprehending the patterns in the data that were used for the analysis. The findings from the descriptive statistics are presented in Table 1.

Table 1: Descriptive Statistics Results

	ASI	EQU	NAV
Mean	27503.52	1205628.	716.2204
Std. Dev.	12256.63	898465.0	596.0320
Skewness	0.275916	1.261115	0.838064
Kurtosis	3.204758	4.053549	3.558966
Jarque-Bera	0.332010	7.160289	2.991772
Probability	0.847042	0.027872	0.224050
Observations	23	23	23

Source: Authors Computation, 2022 (Eviews-12)

Table 1's descriptive statistics information makes it evident that the ASI has a mean value of 27503.52 billion. Between 1999 and 2021, NAV had a mean value of 716.2204, closely followed by EQU, which had a mean value of 1205628 billion. All the model's variables' values for skewness and kurtosis reinforced the analysis as well. All three variables, ASI, NAV, and EQU, were found to be favorably skewed, as shown by their respective values of 1. 0.275916, 0.838064, and 1.261115.

None of the variables throughout the study period satisfied the requirements for platykurtic (fat or short-tailed) variables, which are characterized as having a value of fewer than three kurtoses, as indicated by the kurtosis values. Throughout the study period, it was discovered that all three variables were leptokurtic (slim or long tailed). Variables with a Kurtosis value larger than three are referred to as leptokurtic. The Jarque-Bera test, which was used to quantify or determine the normality assumption of the variable, only revealed that one of the three variables, EQU, was not normally distributed because its

probability value of 0.0278 was found to be less than 5%. The remaining two variables' distributions were found to be normally distributed. The descriptive statistics ultimately demonstrated that the data sets typically have a normal distribution.

Unit Root Test Results

When a variable's absolute value is considered, it is said to be non-stationary if the test statistics at various levels of significance are below the critical value. Consequently, as shown in Table 3, this study employed or modified Augmented Dickey-Fuller (ADF) approaches to test and validate the series unit root property and model stability.

Table 2: Unit Root Test Result

	ADF Test Statistics		
Variable	ADF	Critical Value	Order of Integration
ASI	-4.748072	-4.498307*	I(1)
EQU	-5.868516	-4.467895*	I(1)
NAV	-5.047232	-4.571559*	I(1)

Source: Authors Computation, 2022 (Eviews-12)

Table 2's results for the ADF Test may be shown to indicate that all three variables (ASI, EQU, and NAV) are integrated at order one. Their ADF test statistics were -4.748072, -5.868516, and -5.047232, which were all more than the crucial values of -4.498307, -4.467895, and -4.571559 (all at 1%) and indicated that they had been determined to be stationary at first difference.

Co-integration Results

Table 3 displays the outcomes of the ARDL limits test for Co-integration for the three models using the recommended delays from AIC.

Table 3: Bound Test-Co-integration Results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	28.49057	10%	2.63	3.35
k	2	5%	3.1	3.87
		1%	4.13	5.0

Source: Authors Computation, 2022 (Eviews-12)

Table 3's co-integration test findings show that, at the 5% level of significance, the F-statistic value of 28.49057 is more than the lower (I(0)) and upper bound (I(1)) critical values of 3.1 and 3.87, respectively.

The co-integration of the variables allows for the derivation of a long-run equilibrium relationship between pension fund investments and the performance of the Nigerian stock market between 1999 and 2021. As a result, the null hypothesis—that there isn't a long-term association—is rejected at the 5% level of significance.

ARDL Results and Statistical Test of Hypotheses

Table 4: ARDL Error Correction Regression

Dependent Variable: DLOG(ASI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(ASI(-1))	-9.62258	0.573459	-16.7799	0.0035
DLOG(ASI(-2))	-13.1223	0.789652	-16.6178	0.0036
DLOG(NAV)	0.303167	0.137084	2.211537	0.1575
DLOG(NAV(-1))	17.56986	1.057926	16.60784	0.0036
DLOG(NAV(-2))	10.87681	0.654155	16.62727	0.0036
DLOG(NAV(-3))	2.83991	0.173067	16.40933	0.0037
DLOG(NAV(-4))	-3.84612	0.227833	-16.8813	0.0035
DLOG(EQU)	-3.48041	0.195643	-17.789	0.0031
DLOG(EQU(-1))	-15.3504	0.911143	-16.8474	0.0035
DLOG(EQU(-2))	-11.1396	0.659823	-16.8828	0.0035
DLOG(EQU(-3))	-6.3848	0.396817	-16.09	0.0038
DLOG(EQU(-4))	5.854754	0.358982	16.30932	0.0037
CointEq(-1)*	-0.36703	0.021744	-16.8792	0.0035
R-squared	0.977116			
Adjusted R-squared	0.919944			
F-statistic	26.94716			
Prob(F-statistic)	0.014907			
Durbin-Watson stat	1.905813			

Source: Authors Computation, 2022 (Eviews-12)

The system corrects (or adjusts to) equilibrium in the following year at a speed of 36.703%, which is a very high rate. The ECM value is 0.36703, indicating that. Because the adjustment process to equilibrium is faster the higher the ECM value, the adjustment process to equilibrium is implied to be quicker. To show the model's capacity for explanation and the precision of the estimates, the coefficient of determination (R-square) was used. It demonstrates how well the model matches predictions. It was discovered that NAV and EQU combined accounted for 97.71 percent of changes in ASI, but the error term could only account for 2.29 percent of fluctuations that were not accounted for.

The importance of the results was also shown by the F-statistic, which is used to evaluate the overall significance of the regression model. This is captured by the probability value of 0.014907, which is significant at the 5% level and goes along with the F-statistic value of 26.94716.

Also, the model's Durbin Watson (DW) value of 1.905813 indicated that the variables do not automatically correlate (which fell within the acceptable range of 1.5 and 2.4). This proved that the estimates were unbiased and reliable for formulating policies.

Statistical Test of Hypotheses

Three hypotheses were presented in this study, and 5% was chosen as the Wald test's level of significance for the two-tailed test. Based on the probability value, the null hypothesis must either be accepted or rejected (PV). The questionable variable is shown to be statistically significant at the 5% level if the PV is less than 5% or 0.05 (i.e., PV 0.05); otherwise, it is not significant at that level.

Hypothesis One

H_{01}: Net Asset Value has no significant effect on the performance (All Share Index) in Nigeria.

Table 5: Wald Test results on Net Asset Value and All Share Index

Test Statistic	Value	df	Probability
F-statistic	22.14693	(5, 2)	0.0438
Chi-square	110.7346	5	0.0000

Source: Authors Computation, 2022 (Eviews-12)

The computed F-value for the correlation between Net Asset Value and All Share Index is 22.14693, and its probability value is 0.0438, as shown by the Wald test in Table 5. The initial null hypothesis (H01) was rejected since the probability value is less than 0.05 at the 5% level of significance, which places it in the rejection zone. As a result, the performance (All Share Index) in Nigeria is significantly influenced by Net Asset Value.

Test of Hypothesis Two

H_{02}: Equity has no significant effect on the performance (All Share Index) in Nigeria.

Table 6: Wald Test results on Equity and All Share Index

Test Statistic	Value	df	Probability
F-statistic	17.91387	(5, 2)	0.0437
Chi-square	89.56934	5	0.0000

Source: Authors Computation, 2022 (Eviews-12)

Table 6's Wald-test results showed that 17.91387, with a probability value of 0.0437, was the estimated F-statistic value for the relationship between equity and the All-Share Index. The second null hypothesis (H02) was rejected since the probability value was less than 0.05, or the 5% level of significance (and fell in the rejection region). The study's findings demonstrate that equity has a significant impact on performance in Nigeria (as measured by the All-Share Index).

Post Estimation Diagnostics Tests

Diagnostic checks are performed to confirm the outcomes of the parameter evaluation of the model. There is no serial correlation in the model, the Jarque-Bera test is normal, and the ARCH heteroscedasticity test is not heteroscedastic. The post estimation tests are built on top of these null hypotheses. Table 8 displays the residual test findings as a result.

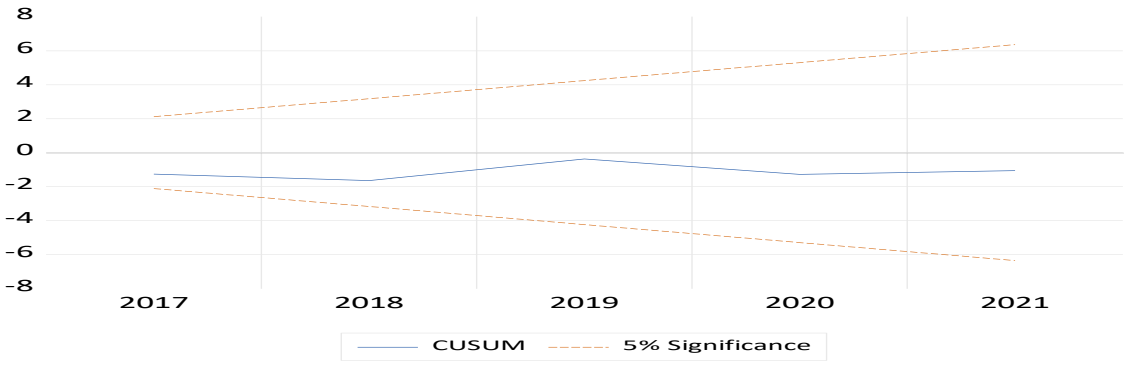
Table 7: Results of Residual Test

Tests		Outcomes	
		Coefficient	Probability
Breusch-Godfrey-Serial-Correlation Test	F-stat.	3.435978	0.5545
Heteroscedasticity-ARCH Test	F-stat.	1.513334	0.2443
Normality Test	Jarque-Bera	2.914620	0.2328
Linearity Test	F-stat	5.630948	0.0766

Source: Authors Computation, 2022 (Eviews-12)

While both model's estimated p-values (0.5545 and 0.2243) were found to be higher than 0.05 or 5%, Table 7's results for the model demonstrate that neither serial correlation nor heteroskedasticity were present in the estimated model. At the 5% level of significance, the result had a normal distribution with a bell-shaped symmetrical distribution, according to the Jarque-Bera test for normal distribution. According to the model specification result, which demonstrated that the p-value of 0.0766, which was discovered to be greater than 0.05 (at the 5% threshold of significance), suggested, the model was correctly specified. This was covered by the Jarque-bera probability value of 0.2328, which was found to be higher than 0.05. Because the plot of the charts conforms with the necessary limits at the 5% significance level, the cumulative sum (CUSUM) stability tests in figure 1 show that the model was stable, and the regression equation was appropriately developed.

Figure 1: CUSUM Stability Tests



Discussion of Findings

The results of the study showed that the performance of the Nigerian capital market is highly influenced by net asset value. This suggests that the growth in net asset value is related to an improvement in the capital market's financial performance. This implies that improved capital market performance would result from higher pension fund contributions. This is consistent with the findings of Abdul (2016), whose research revealed that the capital market performance is highly impacted by the interactions between investments made by pension funds and interest rates. Moreover, Orbunde et al. (2018) found that Market Capitalization is positively and significantly impacted by Pension Fund Net Asset value.

The study also demonstrated that equity has a substantial impact on Nigeria's capital market's performance. This shows that the performance of the capital market is inversely correlated with the level of equity investment made by pension funds. So, a pension firm's equity investment strategy is essential for the growth of the capital market. This result is consistent with research by Musawa and Mwaanga (2017), who found that equity-based pension funds considerably aided the development of the capital market. The life cycle theory, which contends that people budget their spending throughout the course of their lifetimes while taking potential future income into account, serves as the theoretical basis for this study. As a result, people take on debt when they are still young because they believe they will be able to pay it off with their future income. They begin saving in their middle years to maintain their level of spending after retirement.

5. Conclusion and Recommendations

Registered contributions and pension assets have both increased significantly in Nigeria. This greater sum of money may be utilized to fill infrastructure gaps and fix deteriorating infrastructure, which might pave the way for economic expansion. Assets held by pension funds are increasing quickly and will provide a sizable portion of the investment capital for the local banking sector. Investments made by pension funds are anticipated to boost the availability of long-term capital, encourage financial innovation, and enhance capital market performance. As a result, the study draws the conclusion that pension fund investments are beneficial for the expansion of the capital market. It illustrates how important it is to manage pension fund investments as effectively as possible to guarantee that they will provide retirees with a positive return on investment in the future. Notwithstanding the fact that pension funds' investments in the capital market helped Nigeria's capital market grow, the long-term effects would be more noticeable. Hence, the report recommends that governments ensure pension funds make sensible investments because doing so will give retirees in Nigeria access to enough money to meet their long-

term needs, which will enhance the functioning of the capital market. A significant correlation between asset valuations and returns results from correctly invested assets because they are being used to generate income for pension funds. Nigeria must implement regulations that encourage market structure and efficient portfolio investing, as well as proper regulation of pension fund administration. More investments from pension funds should be made in capital market investments to expand, enhance, and strengthen market competition in Nigeria.

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