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Effect of Contributory Pension Fund Investment in Federal Government Security on Nigerian Economy

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ABSTRACT

This study investigated the effect of contributory pension fund investment in Federal Government Security on Nigerian Economy. The time series data for a period of forty five quarters (2010Q1-2021Q1) were used in this study. The researcher employed Ex-post facto research design. Secondary data were obtained from Central Bank of Nigeria Statistical Bulletin, National Bureau of statistics and annual reports of National Pension Commission. To capture the objective of the study and address the stated hypothesis, the researcher employed Ordinary Least Square (Autoregressive Distributed Lag) model to examine the influence of contributory pension fund investment in Federal Government Securities on Gross Domestic Product in Nigeria, The econometric result indicated that contributory pension fund investment in federal government securities had no significant influence on Gross Domestic Product in Nigeria. The insignificance could be as a result of the rate of inflation and poor state of the Nigerian economy. It was concluded that the investment of contributory pension fund in federal government securities had no significant effect on Nigerian economy. Therefore, the researcher recommended that more state government, formal and informal private sectors should be encouraged to register under the contributory pension scheme. This will ensure that the net asset value of contributory pension fund grows and in extension, facilitate more financial intermediation in the Nigerian economy.

Key words; Contributory Pension Fund Investment, Federal Government Securities, Gross Domestic Product, Nigerian Economy

1. Introduction

A major way of enhancing livelihood of the retiring population in a society is by ensuring that retirees enjoy an appreciable level of welfare at retirement through payment of pension. Pension is a regular income paid by government or private company to an individual who no longer works usually because of age, health or attainment of number of years in a service. It is optimistic that a crucial instrument, which can be used to achieve a good retirement plan, is a pension scheme. Pension scheme is a retirement plan that requires an employer to make contributions to a pool of funds set aside for a worker's future benefit. Pension scheme may allow a worker to contribute part of his total emolument into an investment plan to help fund retirement. There are two main types of pension plans; the defined benefit and the defined-contribution plans; Defined Benefit and Defined Contributory Scheme. Defined Benefit Scheme guarantees that the employee receives a definite amount of benefit from employer upon retirement, regardless of the performance of the underlying investment pool while in Defined Contributory Scheme the employer makes specific plan contributions for the worker, usually matching to varying degrees the contributions made by the employees. (Kagan, 2020).

Nigeria currently operates a defined Contributory Pension Scheme, but before then, the Nigeria government has over the years established a number of pension schemes for Nigerian workers in order to guarantee adequate welfare package for them in their post-retirement life and in their old age (Nwawolo & Nwogwugwu, 2019). The first pension legislation in Nigeria was enacted in 1951 by the British Colonial Administration, which is referred to as the Person Ordinance, with retrospective effect from 1st January, 1946 (Ezenwa, & Obiagwu (2020). The pension scheme which was designed for colonial officers who were moved from post to post in the vast British Empire was to ensure the continuity of service wherever and whenever they were deployed to serve the colonial administration. Since then, Nigeria has been going through a lot of pension reform until 2004 when the Pension Reform Act, which introduced Contributory Pension Scheme, was enacted and later was repealed and replaced with the Pension Reform Act 2014.

One of the objectives of the Pension Reform Act 2014 is to assist improvident individuals by ensuring that they save in order to cater for their livelihood during the old age. These savings are invested in different financial securities, which in turn enhance the development of Nigerian economy. Mesike and Ibiwoye, (2012) state that Contributory Pension Scheme has been identified as an institutional investor that generates long-term contractual savings and stimulates the development of securities market. This is made possible through some of the vital roles played such as accumulation of savings that enhance economic development, financial market development, reducing old age poverty, acting as consumers of financial services and provision of long-term investible funds.

One of the major areas where contributory pension funds are invested in Nigeria is in Federal Government Securities. Contributory pension funds investment in Federal Government Securities (FGN Bonds, Treasury Bills and Agency Bonds) accounted for 68.92% of the total assets. This implies that Federal government's securities took the largest share of the pension fund investment because it is considers as the safest risk bearing investment, but care should be taken because it largely forms part of the domestic debt. Therefore, contributory pension funds should be guided by the desired economic effects and implications and not solely by the safety of returns on investment.

It is against the above background that the work is geared towards investigating the effects of contributory pension fund investments in Federal Government Securities on Nigeria Economy.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Pension fund

Pension fund is a fund set aside by employer or employee or both, which accumulates huge capital that is paid out as a pension for employees when they retire from active service. Fapohunda, (2013) states that pension fund is simply the amount set aside either by an employer or an employee or both to ensure that at retirement, there is something for employees to fall back on as income. Pension funds are investment pools that pay for workers' retirements. Funds are paid for by either employees, employers, or both. Corporations and all levels of government provide pensions (Kelly, 2021) Pension funds typically aggregate large sums of money to be invested into the capital market, such as stock and bond markets, to generate profit (returns). A pension fund represents an institutional investor and invests large pools of money into private and public companies. Pension funds are typically managed by companies (employers). The main goal of a pension fund is to ensure there will be enough money to cover the pensions of employees after their retirement in the future.

Pension funds are collective investment undertakings that manage employee savings and retirement. Their primary objective is to provide pensioners who have reached retirement age with income in the form of a lifetime pension or capital. Unlike the pay-as-you-go basis, pension funds are managed by capitalization (Atlas Magazine [AM], 2017). Pension funds typically aggregate large sums of money to be invested into the capital market, such as stock and bond markets, to generate profit (returns). A pension fund represents an institutional investor and invests large pools of money into private and public companies. Pension funds are typically managed by companies. The main goal of a pension fund is to ensure there will be enough money to cover the pensions of employees after their retirement from active service in the future.

Pension funds typically have large amounts of money to invest and are the major investors in listed and private companies. They are especially important to the stock market where large institutional investors dominate. Pension funds are the largest investment blocks in most countries and dominate the stock market where they invest. When managed by professional fund managers, they constitute the institutional investor category with insurance companies and investment trusts. Commonly, pension funds are exempt from capital gains tax and the earnings on their investment portfolios are either tax deferred or tax exempt.

Pension companies as mobilizers of long-term funds play significant role in this process. The Organization for Economic, Corporation and Development OECD (2019) identifies the pension industry as a credible source of continuous supply of long-term funds. OECD (2019) observes that institutional investors, in particular pension funds, mutual funds and insurance have enhanced their role as collectors of savings over the past few decades. It went on to conclude that this trend is likely to continue as retirement saving grows and the increased pension saving will augment the size of capital markets. Fund raised from pension are not allowed to be idle, rather they are invested. Pension fund investments increase the availability of long-term funds, enhance competition, induce financial innovation, and improve corporate governance.

2.1.2 Pension Fund Investment

Pension fund investment can be seen as investment of retirement savings fund or capital in order to gain profitable returns, as interest or income. It is a purchase that is completed with money that has the potential to produce income or a profit. The benefit from the investment of pension funds is called a return. The return may consist of a gain or a loss realized from an investment. Investment of pension funds has the goal of generating income and increasing value over time. An investment can refer to any mechanism used for generating future income. This includes the purchase of bonds, stocks, or real estate property, among other examples (Chen, 2021). Pension fund requires the investment of assets to achieve the long-term provision of funding for retirement (Klumpes, and Tippet 2004). Pension funds are the largest investment blocks in most countries and dominate the stock markets where they invest. When managed by professional fund managers, they constitute the institutional investor sector along with insurance companies and investment trusts. Typically, pension funds are exempt from capital gains tax and the earnings on their investment portfolios are either tax-deferred or tax exempt.

The investment of pension assets is one of the core functions performed by private pension arrangements. In order to promote both the performance and the financial security of pension plan benefits, it is critical that this function is implemented and managed responsibly. Policymakers have therefore a key role to ensure that regulations encourage prudent management of pension fund assets so as to meet the retirement income objectives of the pension plan (OECD, 2006).

The pension fund investment function varies depending on the type of pension plan. In the case of defined benefit plans, the goal of the investment function is to generate the highest possible returns consistent with the liabilities and liquidity needs of the pension plan, and in light of the risk tolerances of affected parties. In a defined contribution plan, the main goal of the investment function is to generate gains that accrue to individual member account balances in light of her investment goals (OECD, 2006).

In Nigeria, the main goals of pension fund investment is to ensure adequate, affordable and sustainable benefits to contributors, secure safety and security of funds, ensure adequate liquidity to pay all pension benefits of contributors as and when due, achieve an optimal trade-off of risk and return through strategic asset allocation (Ndum, Okoye & Amahalu, 2019). To the is effect, National Pension Commission (PENCOM), the sole body charged with the responsibility to regulate, supervise and ensure the effective administration of pension matters in Nigeria, conceived the notion of allowing pension contributors bear the responsibility of deciding their investment futures. Therefore, they expanded the current allowable windows of investments for pension funds and increased the number of Fund types permitting the contributors to make their choice on a preferred fund in order to optimize their pension returns.

The multi-fund structure categorizes Retirement Savings Account (RSA) contributors into different fund structures according to their age (life cycle) and risk profile/preference. In the Multi-fund structure, otherwise known as THE LIFE-CYCLE INVESTMENT Fund Structure, the current RSA Fund is divided into 3 funds namely Fund I, Fund II and Fund III. The Retiree fund, Fund IV, remains as it is, and that is to cater for Contributors who have retired and are no longer working. The funds are peculiar to each other as they have different risk profiles for exposure to various asset classes especially, on the variable income instruments. Variable income instruments are financial instruments whose returns cannot be pre-determined as at the time of investing. The price of this class of instrument changes over time and they are: ordinary shares, units of open & close-ended & hybrid funds, REITs, infrastructure funds and Private equity funds.

2.1.3 Contributory Pension Fund Investments in Federal Government's Securities

Federal Government's securities are bond or other types of debt instrument that are issued by a government with a promise of repayment upon the security's maturity date. Federal Government securities are typically regarded as low-risk investments because they are backed by the taxing power of a government. Government securities are debt instruments issued by the Government in exchange for money borrowed from the public, with a promise of repayment upon maturity. There are two types of Government securities commonly traded, these are treasury bonds (T-bonds) and treasury bills (T-bills). T-bonds consist of long-term securities that mature over a year whilst T-bills mature in less than a year. Investment in treasury securities in developed countries is probably the safest investment that can be made.

Federal Government securities are always issued for two different reasons. The most important reason Federal Government issue securities are to raise funds for government expenditures. The federal government issues treasury securities to cover deficits (under-budget) in its annual budget. Moreover, countries will often issue bonds for construction of schools, libraries, stadiums, and other public infrastructure programs. Some develop countries will sell debt securities to control the supply of money in an economy. If the Federal Reserve wants to slow the growth rate of money in the economy, it will sell government securities. This means that it is sucking up currency from the economy and replacing them with government securities, which results in a slowing of the rate of growth in the money supply. Slowing the rate of money's growth in an economy will help keep inflation under control.

In most countries, bonds and equities remained the two main asset classes in which pension assets are invested, accounting for more than half of investments in 32 out of 36 OECD countries, and in the five reporting non-OECD G20 jurisdictions. The combined proportion of bonds and equities was the highest (relatively to the size of the portfolio) in Chile (99.4%), Estonia (96.7%) and Mexico (96.3%). Pension assets may be invested in these instruments either directly or indirectly through collective investment schemes. For some countries, the look-though of the investments of collective investment schemes was not available, such as for Sweden (in which 63.4% of assets were invested) and the United Kingdom (26.6% of investments). Only the direct investments in bonds and equities were known for these countries (e.g. 30% for Sweden, 39.2% for the United Kingdom). The overall exposure of pension assets to fixed income securities and equities was probably higher in these countries (OECD, 2019).

Contributory pension Scheme accumulates capital for long-term investment. Federal Government always raises money from this fund for government expenditures. In fact in Nigeria, more than 70 per cent (70%) of pension fund asset are invested in Federal Government securities. FGN Bonds and Treasury Bills accounted for 58.75% of pension fund assets, but by February 2017, allocation to FGN Bonds and Treasury bills has increased to 72.36%, an increase of 13.61%. Popoola (2019) stated the total pension assets under the Contributory Pension Scheme rose to N8.49tn as of the end of November 2018 and the pension commission revealed that 72.5 per cent of the fund had been borrowed by the Federal Government and invested in the FGN securities totaling N6.16tn during the period under review.

The National Pension Commission (PenCom) disclosed that the total pension assets in the country have risen to N12.34 trillion as at March 31, 2021. The commission which disclosed this in publication obtained on its website, said these assets have been judiciously and prudently invested in up to 20 major asset classes to yield interests to the contributors Giving a breakdown of how the assets were invested, the commission said federal government's securities took a lion-share of the investment as it received well over N8.51 trillion, representing 68.93 per cent of the total assets. Specifically, federal government bond got N 7.67 trilion of the funds, representing 62.19 per cent of the total assets; while N0.72 trillion was invested in treasury bills (5.85 per cent); N0.01 tillion in Agency Bonds (NMRC), (0.10 per cent); N0.09 tillion in Sukuk (0.69 per cent) and N0.01 tillion in Green Bonds, (0.10 percent.) (PENCOM, 2021).

Penop (2018) reveals that the Investment of pension fund in Federal and States governments' securities has assisted these governments to cost-effectively manage their national debts, thereby contributing in the solving of their financial needs and contributing to the stability in the market of government debts. Pension fund has come in as an independent financial intermediary, as the nation's private business enterprises no longer rely on banks as the sole sources of outside capital for the financing of their businesses. The Fund is getting into real estate, infrastructure and mutual fund. The fund therefore provides a domestic source of borrowing, which doesn't attract excessive high interest rate. The transfer of resources in favour of long term assets by the fund has significantly impacted on the nation's GDP growth rate.

2.2. Theoretical Review

2.2.1 Modern Portfolio Theory

The Modern Portfolio Theory (MPT) refers to an investment theory that allows investors to assemble an asset portfolio that maximizes expected return for a given level of risk. The theory assumes that investors are risk-averse; for a given level of expected return, investors will always prefer the less risky portfolio (Corporate Finance Institute CFI, 2021). Modern portfolio theory is an investing strategy that minimizes market risk while maximizing returns. It is based on the premise that markets are efficient and utilizes diversification to spread investments across different assets (Thune, 2021). Modern portfolio theory (MPT) was introduced by Dr. Harry Markowitz introduced in 1952. It provides investors with a portfolio construction framework that maximizes returns for a given level of risk, through diversification. Modern portfolio theory argues that an investment's risk and return characteristics should not be viewed alone, but should be evaluated by how the investment affects the overall portfolio's risk and return. MPT shows that an investor can construct a portfolio of multiple assets that will maximize returns for a given level of risk. Likewise, given a desired level of expected return, an investor can construct a portfolio with the lowest possible risk. Based on statistical measures such as variance and correlation, an individual investment's performance is less important than how it impacts the entire portfolio. (Chem, 2021).

Modern Portfolio Theory assumes that every investor wants to achieve the highest possible long-term returns without taking extreme levels of short-term market risk. However, risk and reward are positively correlated in investing, so if when opt for low-risk investments, such as bonds or cash, one can expect lower returns (Thune, 2021). MPT reasons that investors should not choose portfolios that maximize expected return, because this criterion alone ignores the principle of diversification. MPT proposes that investors should instead consider variances of return, along with expected returns, and choose portfolios offering the highest expected return for a given level of variance.

Modern Portfolio Theory operates under the following assumptions:

1. Investors are risk averse
2. Investors are rational
3. All investors have access to the same information
4. Returns are normally distributed.

MPT can provide pension fund managers with a portfolio construction framework that maximizes returns for a given level of risk. It is a useful tool for pension fund managers trying to build diversified portfolios. In fact, the growth of Exchange Traded Funds (ETFs) made MPT more relevant by giving pension fund managers easier access to different asset classes. Pension fund managers can use MPT to reduce risk by putting a portion of their portfolios in government bonds. The variance of the portfolio will be significantly lower because government bonds yields low returns and will not have a large impact on expected returns

Owusu, Appiah, Omari-Sasu and Owusu (2016) **a**pply Markowitz optimization technique to study the various investments portfolio of SSNIT, the largest pension fund in Ghana. They aimed at establishing an optimal way of allocating the fund investment portfolios while looking at the risks associated with the investment opportunities. The results evidence significant improvement in terms of efficient management of the pension fund in their resource allocation to the various investment opportunities. The study also demonstrates the useful application of Markowitz model to quantify the risks associated with the investment portfolios at the Ghana's Social Security and National Insurance Trust.

One of the objectives of the new Contributory Pension Scheme is to assist improvident individuals by ensuring that they save, and these savings are meant to be invested in different portfolios as directed by National Pension Commission. The investment in different portfolios is expected to yield high return, which in turn, will satisfy the interest of the contributors and other stake holds and as well enhance economic growth.

2.3 Empirical Review

2.3.1 Pension Fund Investment in Federal Government Securities and Gross Domestic Product

Shola (2013) examined the determinants of the growth of investment income of pension fund schemes. Local Authorities Pensions Fund was taken as a case study. Time series data were used and ordinary least square method was used to estimate the model. Results showed that; the variables "members' contributions" and "investment made in fixed deposits" are positively related to the growth of investment income and are statistically significant at one percent level. However, the variable "investment in government securities," is positively related to the growth of investment income and statistically significant at five percent level. The estimated parameters for investment in government securities is 1234.84 while for members contribution is 0.22and

that of investment made in fixed depositsis0.12. All these estimated parameters refer to the magnitude of change of investment income when the respective variable changes by one unit.

Akowe, Ocheni and Daniel (2015) evaluated the contribution of portfolios of new contributory pension fund on Nigerian gross domestic product (GDP) and the linkage between the Federal Government Securities and Nigerian GDP. The population of the study entails nine (9) years while six (6) years were sampled for study (2007-2012). Scientific Packages for Social Scientists (SPSS) version 18.0 was used. The data and the hypothesis are tested using Pearson product moment correlation test and F-test. Result evidenced that, Federal Government of Nigeria Securities had positive contributions to Nigerian Gross Domestic Product for the period under review. It was recommended that, there should be more investment of pension fund in Federal Government of Nigeria securities to boost Gross Domestic Product (GDP) of Nigeria as revealed by this study.

Muia (2015) did a study on the effect of asset allocation on the financial performance of pension funds in Kenya using Multiple Regression Model which established that financial performance of the pension funds was explained by approximately 82.7% of the independent variables of the different asset classes. Muia (2015) study found out that there is a linear correlation between investment returns and the returns of the various asset classes with the strongest correlation being between fund performance and returns from offshore investments and government securities. The balance of about 17.3% was attributed to other factors such as the manager's selection, the timing of investments and securities selection within an asset class and whether the manager adopts an active style of management of the fund. However, the study did not show the effect of investment returns on the sustainability of pension funds administrators.

Ndung'u (2016) studied The Effect of Asset Allocationon the Financial Performance of Pension Schemes in Kenya using multiple regression model. The main objective of this study was to determine the effect of assets allocation on the financial performance of pension schemes. This research was conducted through a descriptive survey and utilized secondary data available from RBA and Fund Managers. From the study, it was found out that there is a linear correlation between fund performance and the returns of the various asset classes with the strongest correlation being between overall fund performance and returns in Equities, fixed deposit and Government securities. From a population of 1297schemes in Kenya, the findings of the study showed that asset allocation explained 89.5% of the variability of fund performance and that 10.5% was due to other factors such as the manager's selection, timing of investments and securities selection within as asset class and the management style adopted by the fund managers of the fund.

Ameh, Ajie and Duhu (2017) examined impact of contributory pension scheme on economic growth in Nigeria using Multiple Regression Model. Data for the study were sourced from various issues of PenCom Annual Reports and World Bank Development Indicators (database). The data were computed with the use of Statistical Package for Social Sciences (SPSS). It was concluded that pension fund assets and pension contribution /savings mobilized over the years have positive but insignificant impact on economic growth. The implication of this finding is that the authorities concerned have not been able to use the pension fund asset and savings mobilized to boost economic growth in Nigeria. It was therefore recommended that, there should be more emphasis on the management of pension assets in the capital market as well as government bond, real estate and investment trust to boost Gross Domestic Product (GDP) of the country (Nigeria). Secondly, there should be prompt reconciliation between Pension Fund Administrators (PFAs) and Pension Fund Custodians. This will bring transparency and accountability to the system. Finally, PenCom should ensure effective monitoring, supervision and enforcement of the provision of the PRA 2004, which are the inevitable ingredients in the Contributory Pension Scheme towards Gross Domestic Product (GDP).

Mwangi (2018) studied the Effect Of Asset Allocation On The Financial Performance Of Individual Benefit Pension Schemes In Kenya using Linear multiple regression model. The objectives of the study are to establish the effects of investment in fixed interest assets on the financial performance of individual retirement benefit schemes, investigate the effects of holding government securities on financial performance of individual retirement benefit schemes, explore the effects of investing on quoted securities on the financial performance of individual retirement benefit pension scheme, and to establish the effects of holding unquoted securities on the financial performance of individual retirement benefit pension schemes. The result of the analyses revealed that investment in fixed interest securities, government securities and investment in unquoted securities increased financial performance in individual benefit pension schemes, while investment in quoted securities decreased financial performance in individual benefit retirement schemes. This led to the conclusion that it's prudent to invest in fixed interest securities, government securities, and un quoted securities while it's impudent to invest in quoted securities. Trustees of individual retirement benefit schemes were advised to invest in assets that generate positive returns to the schemes.

Nweke (2018) studied the Investment of Pension funds in Nigerian Bond Market. The study used Judgemental sampling in the secondary data obtained from FMDQ website and the Central Bank website. The data was analyzed using the basic, premium, base amount, makeham, duration and convexity formulas. The result of the analysis showed how the price of bonds changes with change in interest rate and showed how change in duration affects interest rate risk. It was shown in this study how Pension fund administrators value bonds, measure interest rate risk and measure the performance of bonds. This study recommends that Pension fund administrators price bonds using any of the pricing formulas used in the analysis of the bonds and measurement of performance of bonds should be done continuously by Pension fund administrators.

Chovancova, Hudcovsky and Kotaskova (2019) employed multiple regression model to examine the impact of stock and bond markets on the pension fund performance. This paper investigates the connection between stock and respectively bond market and pension funds. The relationship between the pension market and representative stock and bond market indexes was confronted. Research data based on pension statistics from the Organization for Economic Co-operation and Development were included in the research. The result of the analyses evidenced that there is a stronger impact of the bond market on pension fund performance. The result also showed the relationship between the performance of the pension fund and the ratio of assets under management to the gross domestic product.

Ndum, Okoye, and Amahalu (2019) studied Pension Fund Asset Investment and Economic Growth in Nigeria. The objective of this study was to assess the relationship between Pension Fund Asset Investment and Economic Growth in Nigeria utilizing time series data spanning for a twelve year period, from 2006 to 2017. Secondary data for the period were collected from the National Pension Commission (PenCom) Annual Reports, Central Bank of Nigeria, National Bureau of Statistics and World Bank development indicator (database) of twenty-one licensed pension fund administrator as at 31st December, 2017. The data collected were analyzed and tested for unit root, using the Augmented Dickey-Fuller test using E-Views, 9.0 statistical software. The Ordinary Least Square techniques were used to estimate three models in line with the formulated hypotheses. The results from the models revealed a significant positive relationship between pension fund assets, pension fund contribution, pension fund investment and gross domestic product at 5% level of significance. Consequently, it was recommended inter alia that there should be more emphasis on the management of pension assets in the capital market as well as government bond, real estate and investment trust to boost Gross Domestic Product (GDP) of Nigeria.

Adekoya and Nwaobia (2021) 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 21 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.

3. Methodology

3.1 Research Design

Ex-post facto is the research design used in the study. *Ex-post facto* research design is a study that examines how an independent variable, present prior to the study, affects a dependent variable. It is a method of teasing out possible antecedents of events that have happened but cannot, be manipulated by the researcher. It is a design that covers where data to be used is already collected and organized. Given that this study was time series based *Ex-post facto* design was applied.

3.2 Nature and Sources of Data

Data used in the study was secondary data. Secondary data is the data that has already been collected through primary sources and made available for researchers to use for their own research. Secondary data refers to data that have already been collected for some other purpose and can also be very useful for research purposes. It is a type of data that has already been collected in the past. There are no specific methods of secondary data. Researchers can obtain data from the sources both internal and external to the organization. The Data were taken from the Central Bank of Nigeria Statistical Bulletin, National Bureau of statistics and annual reports of National Pension Commission from 2010Q1-2021Q1.

3.3 Model Specification

The functional relation of the model used in this study is given as:

GDP = f (PIFGS + INF) ……(i)

The model is specified as follows:

$GDP = \beta_0 + \beta_1 PIFGS + INF + \mu$……(ii)

Where:

GDP = Gross Domestic Product

PIFGS = Pension fund investment in federal government securities

INF = Inflation

β_0 = Constant parameters

β_1 = Coefficient parameter of PIFGS

μ = error term

4.1 Test of Hypothesis

Step One: Statement of the hypothesis in both null and alternate forms

H_0: Pension fund investment in federal government securities had no significant impact on gross domestic product in Nigeria

H_1: Pension fund investment in federal government securities had significant impact on gross domestic product in Nigeria

Step Two: Statement of the decision criteria

Accept the null hypothesis if p-value is greater than 5% or 0.05, otherwise reject the null hypothesis and accept the alternate accordingly.

Step Three: Presentation of the result for the hypothesis test

Table 4.12 Regression Result for Test of Hypothesis One

Dependent Variable: LAGRGDP
Method: ARDL
Date: 08/16/21 Time: 18:24
Sample (adjusted): 2011Q2 2021Q1
Included observations: 40 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic):
Fixed regressors: FGS INF C
Number of models evalulated: 4
Selected Model: ARDL(4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LAGRGDP(-1)	0.038540	0.055133	0.699040	0.4894
LAGRGDP(-2)	-0.089204	0.055409	-1.609927	0.1169
LAGRGDP(-3)	-0.041159	0.057138	-0.720335	0.4764
LAGRGDP(-4)	0.967765	0.057481	16.83634	0.0000
FGS	-0.004026	0.014692	-0.273999	0.7858
INF	-0.002450	0.000401	-6.115462	0.0000
C	0.576537	0.388394	1.484414	0.1472

R-squared	0.977744	Mean dependent var	4.218513
Adjusted R-squared	0.973698	S.D. dependent var	0.041262
S.E. of regression	0.006692	Akaike info criterion	-7.018211
Sum squared resid	0.001478	Schwarz criterion	-6.722657
Log likelihood	147.3642	Hannan-Quinn criter.	-6.911348
F-statistic	241.6263	Durbin-Watson stat	1.508920
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.
Source: Author's Eviews 10 Output, 2021

Step Four: Decision.

From Table 4.12 it is seen that pension industry investment in federal government securities had a regression coefficient of -0.004026. This is a negative coefficient. It shows that there is a decreasing interaction between pension industry investment in federal government securities and gross domestic product in Nigeria. That is to say for any unit change in pension industry investment in federal government securities, there will be 0.004026 basis points decrease in gross domestic product in Nigeria. The Adjusted Co-efficient of Determination (R^2) which was 0.973698 shows that in hypothesis one model, the independent variable (pension industry investment in federal government securities) can only explain 97.3698 percent of any variation seen in gross domestic product in Nigeria. Table 4.12 shows the probability of pension fund investment in federal government securities is 0.7858 which is greater than 0.05 the level of significance. Thus, we accept the null hypothesis and conclude that pension fund investment in federal government securities had no significant impact on gross domestic product in Nigeria.

4. Discussion of Findings

The finding of hypothesis one test implies that the extent of impact that pension industry investment in federal government securities had on gross domestic product in Nigeria was low. This may be attributed to the size of the economy. The value of investment from pension industry investment in federal government securities despite being the largest of all investment yet was less than 1 percent of gross domestic product in Nigeria. In the fourth quarter of 2020 it was 0.42 percent and 0.51 percent in the first quarter of 2021. However, a more pressing factor can be the poor state of the economy which hinders return of investment. The latest report released by the National Bureau of Statistics (NBS) reveals that, in real terms, the Nigerian economy expanded by 0.11% year-on-year in Q4 2020 compared to -3.62% and 2.55% recorded in Q3'2020 and Q4'2019 respectively (Price Waterhouse Coopers,

PWC, 2021). The growth rate officially signaled Nigeria's exit from the recession of the last two quarters, following the effect of the COVID-19 pandemic on key sectors including oil and gas, services, manufacturing, transportation etc. Despite this, full year 2020 growth stood at - 1.92% (2019: 2.27%), though significantly lower than the -3.5% projected by the International Monetary Fund in its World Economic Outlook report published in January 2021 (PWC, 2021).

From manufacturing, agriculture, solid mineral, retail and oil/gas to service sectors such as aviation, telecommunication and banking, the economy has not lacked policy statements and blueprints since the return of democracy 22 years ago. Yet, the economy has been lethargic, growing at a pace slower than the rate of expansion of the population. The cause is Federal government refusal to be guided by the principle of economic rational expectation **(**Iyatse, Oyebade, Adepetun and Otaru, 2021). Under the principle, economic policy formulators and implementors (who are meant to be committed to attaining national economic advancement) are expected to evaluate various policy options from one period to another and then choose and implement those options that perceptibly improve the welfare of the greatest numbers of the citizenry. But as empirically and statistically established, Nigeria's experience has been the converse after the demise 50 years ago of the Bretton Woods system of fixed exchange rates in 1971 with successive federal administrations fooling the Nigerian people by creating inflationary volumes of the national currency, the naira, through willful mismanagement for the benefit of ever-diminishing economic beneficiaries and government-foisted financial interlopers **(**Iyatse, Oyebade, Adepetun and Otaru, 2021).

In addition, as an intervening variable inflation has had negative effect on the economy of Nigeria, this hinders making gainful return on investment. We have seen a troubling trend in the country in recent times, with, businesses and activities today facing increasing levels of competitive pressure and difficulties, coupled with persistent insecurity, and inflationary pressure where high price increases have continued in transportation, food cost, household needs, raw materials, pharmaceutical products, motor cars, vehicle spare parts, equipment, and in prices of services amongst others. The cost and price of virtually everything are much higher today and it is because of inflation (Olubiyi, 2021). In such an environment pension industry investment in federal government securities cannot yield significantly and aid the growth of the Nigerian economy.

5. Conclusion

This study examined effect contributory pension fund investment in federal government securities on Nigerian economy. Federal government securities are the major area of investment where pension fund are channeled. The Nigeria economy was measured by real gross domestic product. This study sought a connection between the contributory pension fund investment in federal government securities and the Nigerian economy. In line with the findings of the study it was concluded that the contributory pension fund investment in federal government securities, had no significant effect on Nigerian economy.

5.3 Recommendations

In line with the findings of the study the following recommendations were made:

1. Federal government's securities took the largest share of the pension fund investment because it is considers as the safest risk bearing investment, but care should be taken because it largely forms part of the domestic debt. Also pension funds should be guided by the desired economic effects and implications and not solely by the safety of returns on investment.
2. The fund derived by the federal government from pension fund should be channeled into domestic investment. This will increase the productive capacity in the economy and aid the growth of the Nigeria economy.

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