



Contributions of Pension Industry Investments to Nigerian Capital Market

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ABSTRACT

This study was on contribution of pension industry investments to the Nigerian capital market. The specific objectives were to evaluate the contributions of pension industry investment in corporate bonds to total market capitalization of the Nigerian Stock Exchange; and to investigate the contributions of pension industry investment in quoted ordinary shares to total market capitalization of the Nigerian Stock Exchange. The period of the study was from 2007 to 2020. Data was sourced from Pension Commission of Nigeria industry reports and Central Bank of Nigeria Statistical Bulletin. Autoregressive Distributed Lag Model (ARDL) was used to analyze data. It was found that pension industry investments in corporate bonds did not contribute significantly to total market capitalization of the Nigerian Stock Exchange. Also, it was found that pension industry investment in quoted ordinary shares did not contribute significantly to total market capitalization of the Nigerian Stock Exchange. Based on the findings of the study it was concluded that only pension industry investments in short term financial instruments do not have significant contribution to capital market development in Nigeria. In line with the findings of the study it was recommended that the industry should aid the private sector to expand its ventures in real estate. Furthermore, the pension industry should spread its investment in quoted ordinary shares among high yield companies.

Keywords: Pension Industry Investments; Nigerian Capital Market; Total Market Capitalization

1. Introduction

Capital market is an avenue where savings and investments are channeled between the suppliers who have capital and those who need capital (Hayes, 2021). The term capital market broadly defines the place where various entities trade different financial instruments. The basic function of capital markets is to allow the efficient transfer of funds between borrowers and lenders (Obamuyi, 2013). Capital markets are composed of the suppliers and users of funds. Suppliers include households and the institutions serving them, pension funds, life insurance companies, charitable foundations, and non-financial companies that generate cash beyond their needs for investments (Hayes, 2021). The Organization for Economic, Corporation and Development (OECD) (2009) identified the pension industry as an institutional investor given that it has a credible source of continuous supply of long-term funds. The introduction of Contributory Pension Scheme allowed the Nigerian pension industry to accumulate assets that can be invested in financial markets. Funds raised by the pension industry are not allowed to be idle, rather they are invested. Section 85 (1) provides that all contributions made under the Pension Reform Act 2014 shall be invested by the Pension fund administrators with the objectives of safety and maintenance of fair returns on amount invested. Given this statutory provision the pension industry is compelled to be a regular player in the capital market. As such the pension industry through its investment is staking a claim in the activities of the capital market. However, how significant are these to the operations of the capital market?

Countries require investments for sustainable growth and development. The capital market offers the avenue for mobilization and allocation of savings and investment critical to the sustainable growth and development of any economy. As a result of the opportunities provided by the capital market, everyone (borrowers and lenders) is better off than he or she would have been without capital market. It is therefore expected that the decision to establish the Nigerian Capital Market was born from the benefits accruable from the performance of its traditional functions.

The capital market mobilizes the savings of economic agents like pension funds and allocate such to long-term investments in the economy by providing avenue for firms and governments to sell stocks and bonds for self-sustained economic growth. As mobilizers of funds in Nigeria, Pension companies now play significant role in economic growth of the country. Various empirical studies have established this position. However, on a sectorial basis, empirical consideration of the link between the pension industry and the capital market as a sector of the economy has not focused on examining the specific investment of the pension industry that directly link to the categories of financial instruments available in the Nigerian Stock Exchange. In other words, there is a gap in empirical consideration of the contribution of the pension industry investment in federal government securities to government securities traded on the Nigerian Stock Exchange; on contributions of the pension industry investments in corporate bonds to bonds traded on the Nigerian Stock Exchange; and on the contributions of pension industry investments in quoted ordinary shares to equities traded on the Nigerian Stock Exchange. These collectively make up the total market capitalization of the Nigerian Stock Exchange. It is against this backdrop that this study is undertaken.

Objectives of the study

The specific objectives are:

1. To evaluate the contributions of pension industry investments in corporate bonds to total market capitalization of the Nigerian Stock Exchange
2. To investigate the contributions of pension industry investments in quoted ordinary shares to total market capitalization of the Nigerian Stock Exchange

2. Theoretical Framework

The theoretical basis for this study is the institutional investment theory. Davis (2005) propounded the Institutional Investment Theory. The theory holds that in the financial structures of an economy are institutions and based on their capacity as institutions can channel resources into productive ends for growth purpose. Institutional investors play a key role in channeling savings into productive long-term investments, especially those that can be difficult to finance because they are "illiquid".

Institution means either an organization or industry that is widespread enough to collectively influence the tide of economic exchange in a society. Traditionally, this heterogeneous group of public and private investors, in particular, pension funds, life insurers and sovereign wealth funds has been seen as a source of long-term capital with investment portfolios built around the two main asset classes, bonds and equities and an investment horizon tied to the often long-term nature of their liabilities.

In relation to this study the theory establishes that as the pension industry collectively channel its investments through the capital market it gives the market a strategic boost and yield wider reaching multiplier effect.

Empirical Review

Iwegbu (2020) examined pension fund, financial development and output growth in Nigeria. Using Autoregressive Distributive Lag (ARDL) model, the study found out that pension fund contribution is effective in stimulating growth through investment in portfolios that yield short term returns; this implies that pension fund contributions cannot on its own without a credible financial system impact on economic growth.

Omodero (2020) analyzed capital market determinants and market capitalization in Nigeria. The results from the regression analysis indicate that exchange rate and inflation rate have immaterial undesirable consequence on capital market capitalization (CMC) while the interest rate exerts a weighty harmful effect on CMC. The study also provides evidence that the gross domestic product (GDP) has a substantial positive impact on CMC. The study among others suggests that the growth of the economy should be sustained in order to keep boosting the capital market. However, the economic indicators such as inflation, interest rate and exchange rate should be kept under strict control by the relevant authorities in the country.

Mokgadi and Biza-Khupe (2018) assessed an empirical investigation of the relationship between pension fund reforms and financial sector development in Botswana. The results indicated that the hypothesis of a relationship between pension fund reforms and financial sector development is partially supported. In this regard, the study findings confirm the significant role played by financial reforms in economic development and capital markets growth.

Okparaka (2018) examined the effects of contributory pension scheme on Nigerian capital market. Ordinary least square regression was used as analytical technique. It was found that pension assets under management has positive and significant effect on total market capitalization. Also, pension assets under management has no positive and significant effect on total value of deals per year.

Wanjala (2017) examined the effect of pension fund investments on stock market returns at the Nairobi Securities Exchange. The study employed multiple linear regression model. The study found that the independent variables had a strong correlation with stock market returns at the NSE. The results further revealed that individually, level of economic development is a significant determiner of stock market returns at the NSE while pension fund investments in stocks and pension fund size were found to be statistically insignificant determiners of stock market returns at the NSE.

Zubair (2016) examined the impact of pension fund investments on the performance of capital market in Nigeria. The study used Autoregressive Integrated Moving Average (ARIMA) regression technique. Specifically, the study concludes that total pension investments in Nigeria improved the performance of the Nigerian capital market significantly in terms of depth and liquidity (market capitalization and value traded). Moreover, the study concludes that the interaction of macroeconomic indicators such as interest rate, inflation rate and GDP per capita with pension investments affect the capital market performance significantly.

Moleko and Ikhide (2016) study was directed at establishing linkages between pension funds and capital market development in South Africa. It used autoregressive distributive lag (ARDL) and the vector error correction model (VECM). The results show a positive relationship between pension savings and stock market development. There is no long run relationship established between pension savings and the bond market development. Using the VECM framework we find only unidirectional relationship between pension fund savings and stock market development.

Enache, Milos and Milos, M. (2015) used the single equation error correction model (ECM) to investigate the impact of pension funds on capital market in a sampled ten (10) Central and Eastern European Countries from 2001 to 2010. The finding provides evidence of short-term impact and lower magnitude long term impact on market capitalization.

Kyando (2014) assessed the contribution of Pension Funds (PFs) to the development of capital market in Tanzania, Dare Salaam stock exchange (DSE) being the Centre of focus. Data collected was analysed using the spreadsheet computer software to establish evidence on the contribution of PFs to the development of DSE in terms of turnover, liquidity and portfolio ratio. The results show that there is low participation of PFs in IPOs. PFs hold a small fraction of DSE's market capitalization. PFs purchases and holds securities for longer terms. The low liquidity of the DSE is partially contributed by low participation of PFs in secondary market trading. Finally, the results show that portfolio of PFs is mainly made up by Government bonds, bank deposits and loans. Inclusively, results from the research work imply that the contribution of PFs in the development of capital markets in Tanzania, particularly the DSE is not significant.

Gap in Literature

After reviewing the empirical studies above, there was need for further studies. Empirical consideration of the link between the pension industry and the capital market reviewed, measured pension industry using the entirety of funds it generated. This differed by looking at the industry's investments in short term financial instruments. This allows the study to focus on short term involvement of the pension industry in the capital market. It is against these gaps that this study is undertaken.

3. Methodology

Data used was sourced from annual industry reports of the pension industry for the selected years of the study as provided by Pension Commission of Nigeria and Central Bank of Nigeria Statistical Bulletin of 2020. The study is times series based from 2007 to 2020, a period of thirteen years.

Model Specification

The model for the study was based on Odo and Okeke (2016) whose model is stated as:

$$Y = a + B_1X_1 + e \dots \quad (i)$$

Where: Y = financial sector development, a = Intercept, B_1X_1 = Pension fund, e = error term

Modification was made to accommodate the variables adopted in the hypotheses of the study. Thus, the functional relation of hypothesis one model is given as:

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$$TMC = f(PINVCB) \quad (ii)$$

The linear model is specified as follows:

$$TMC = \beta_0 + \beta_1PINVCB + \mu \quad (iii)$$

Where:

TMC = Total market capitalization

PINVCB = pension industry investment in state corporate bonds

β_0 = Constant parameter

β_1 = Coefficient parameter of PINVCB

μ = error term

The functional relation of hypothesis two model is given as:

$$TMC = f(PINVOS) \quad (iv)$$

The linear model is specified as follows:

$$TMC = \beta_0 + \beta_1PINVOS + \mu \quad (v)$$

Where:

TMC = equities traded on the Nigerian Stock Exchange

PINVOS = pension industry investment in quoted ordinary shares

β_0 = Constant parameter

β_1 = Coefficient parameter of PINVOS

μ = error term

Description of model variables

Dependent variables

Total market capitalization: This is the total value of all securities traded on the Nigerian Stock Exchange.

Independent variables

Pension industry investment in corporate debt securities: This refers to the total monetary value of all investments made by the pension industry in corporate debt securities.

Pension industry investment in quoted ordinary shares: This refers to the total monetary value of all investments made by the pension industry in equities quoted on the Nigerian Stock Exchange.

To avoid unreliable and misleading result, the study conducted stationarity test. This was done using Phillips Perron method of unit root test. Thereafter each hypothesis was estimated using Autoregressive Distributed Lag (ARDL). The hypotheses tests were at 5 percent level of significance. Statistical significance was determined using p-value.

Table 1 Result of Unit Root Test

<i>Variable</i>	<i>Order of integration</i>	<i>Calculated value</i>	<i>Test critical value @ 5%</i>	<i>P-value</i>
<i>TMC</i>	1(1)	-7.365479	-3.475352	0.0061
<i>CB</i>	1(0)	-8.531762	-3.005352	0.0000
<i>QOS</i>	1(1)	-10.12590	-3.475352	0.0028

Source: Author's calculation using Eviews 10

Where:

TMC = total market capitalization

CB = pension industry investment in corporate bonds

QOS = pension industry investment in quoted ordinary shares

The results of the tests as reported show that at first difference the variables TMC and QOS were stationary. They were integrated at order one. On the other hand, the variable CB was stationary at level.

Due to the mixed order of the integration each hypothesis was estimated using Autoregressive Distributed Lag (ARDL).

Test of Hypothesis one

Table 2 Result of Hypothesis one test

Dependent Variable: TMCAP

Method: ARDL

Date: 05/25/21 Time: 02:52

Sample (adjusted): 2 13

Included observations: 12 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic):

Fixed regressors: PIICB C

Number of models evaluated: 4

Selected Model: ARDL (1)

Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
TMCAP (-1)	0.599339	0.301962	1.984816	0.0784
PIICB	12.91792	7.483975	1.726077	0.1184
C	4.52E+12	3.52E+12	1.282443	0.2317
R-squared	0.793645	Mean dependent var		1.58E+13
Adjusted R-squared	0.747788	S.D. dependent var		5.74E+12
S.E. of regression	2.88E+12	Akaike info criterion		60.43092
Sum squared resid	7.49E+25	Schwarz criterion		60.55215
Log likelihood	-359.5855	Hannan-Quinn criter.		60.38604
F-statistic	17.30703	Durbin-Watson stat		1.763277
Prob(F-statistic)	0.000824			

Source: Researcher's calculation using Eviews 10

Decision: Given that p-value of pension industry investments in corporate bonds at 0.1184 is higher than the level of significance (0.05) the null hypothesis is not rejected. Therefore, it is concluded that pension industry investments in corporate bonds did not contribute significantly to total market capitalization of the Nigerian Stock Exchange

Test of Hypothesis three

Table 3 Result of Hypothesis two test

Dependent Variable: TMCAP

Method: ARDL

Date: 05/25/21 Time: 02:54

Sample (adjusted): 5 13

Included observations: 8 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic):

Fixed regressors: PIIQOS C

Number of models evaluated: 4

Selected Model: ARDL (4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
TMCAP (-1)	0.604788	0.510983	1.183578	0.3582
TMCAP (-2)	0.741670	0.664433	1.116245	0.3804
TMCAP (-3)	-0.369388	0.878266	-0.420588	0.7149
TMCAP (-4)	0.748894	0.637484	1.174767	0.3610
PIIQOS	-19.10886	13.59443	-1.405639	0.2950
C	1.70E+12	5.03E+12	0.336786	0.7683

R-squared	0.872461	Mean dependent var	1.84E+13
Adjusted R-squared	0.553613	S.D. dependent var	4.77E+12
S.E. of regression	3.19E+12	Akaike info criterion	60.53331
Sum squared resid	2.03E+25	Schwarz criterion	60.59289
Log likelihood	-236.1332	Hannan-Quinn criter.	60.13146
F-statistic	2.736295	Durbin-Watson stat	1.762228
Prob(F-statistic)	0.289008		

*Note: p-values and any subsequent tests do not account for model selection.

Source: Researcher's calculation using Eviews 10

Decision: Given that p-value of pension industry investment in quoted ordinary shares at 0.2950 is higher than the level of significance (0.05) the null hypothesis is not rejected. Therefore, it is concluded that pension industry investment in quoted ordinary shares did not contribute significantly to total market capitalization of the Nigerian Stock Exchange.

Discussion of Findings

From Table 2 the regression equation derived is:

$$TMC = 4.52E+12 + 12.91792PINVCB$$

The intercept value implies that if each index for pension industry in corporate bonds is held constant total market capitalization will increase by 4.52E+12 basis points. The coefficient of pension industry investments in corporate bonds at 12.91792 shows it has a positive relationship with total market capitalization. It implies that every 12.91792 basis point change in pension industry investments in corporate bonds facilitates a percent increase in total market capitalization. An Adjusted R-squared of 0.747788 shows that in the model used, pension industry investments in corporate bonds can explain only 74.7788 of the variations in total market capitalization. Given that p-value of pension industry investments in corporate bonds at 0.1184 is higher than the level of significance (0.05) it shows that there is no statistical significance. The finding of hypothesis one test agrees with Moleko and Ikhide (2016) whose study was directed at establishing linkages between pension funds and capital market development in South Africa and found a positive relationship between pension savings and stock market development.

From Table 3 the regression equation derived is:

$$TMC = 1.70E+12 - 19.10886PINVQOS$$

The intercept value implies that if each index for pension industry investments in quoted ordinary shares is held constant total market capitalization will increase by 1.70E+12 basis points. The coefficient of pension industry investments in quoted ordinary shares at - 19.10886 shows it has a negative relationship with total market capitalization. It implies that every 19.10886 basis point change in pension industry investments in quoted ordinary shares facilitates a percent decrease in total market capitalization. An Adjusted R-squared of 0.553613 shows that in the model used pension industry investments in quoted ordinary shares can explain only 55.3613 of the variations in total market capitalization. Given that p-value of pension industry investment in quoted ordinary shares at 0.2950 is higher than the level of significance (0.05) it shows that there is no statistical significance. The finding of hypothesis two test disagrees with Zubair (2016) who examined the impact of pension fund investments on the performance of capital market in Nigeria and concludes that total pension investments in Nigeria improved the performance of the Nigerian capital market significantly in terms of depth and liquidity (market capitalization and value traded).

Summary of Findings

1. Pension industry investments in corporate bonds did not contribute significantly to total market capitalization of the Nigerian Stock Exchange
2. Pension industry investments in quoted ordinary shares did not contribute significantly to total market capitalization of the Nigerian Stock Exchange

Conclusion and Recommendations

Based on the findings of the study it was concluded that only pension industry investments in short term financial instruments do not have significant contribution to capital market development in Nigeria.

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

1. The industry should aid the private sector to expand its ventures in real estate. Investment of pension fund in infrastructure would provide long-term financing at reduced interest rates and thus free the pressure to borrow at high interest rates from banks to finance such projects. This would in turn increase the stock of infrastructure and thus lead to economic growth and stable prices.
2. The pension industry should spread its investments in quoted ordinary shares among high yielding companies. This will help the firms avoid tying down their funds in ventures with low certainty of payback.

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