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# ANALYSIS OF THE IMPACT OF FINANCIAL DEVELOPMENT INDICATORS OF THE BANKING, INSURANCE AND PENSION SECTORS ON ECONOMIC GROWTH IN NIGERIA

Gloria U. Igwe\*, Sule Magaji, & Nazifi Abdullahi Darma

## ABSTRACT

The study examined the impact of financial development indicators of the banking, insurance and pension sectors on economic growth in Nigeria. The financial development indicators of the sectors utilised were ratios of net domestic credit, gross premium and total pension assets. Quarterly data spanning from 2007 to 2019 were obtained for the study. The research design adopted for the study is *expost facto*. The Autoregressive Distributed Lag model is employed to assess the impact of financial development indicators of the aforementioned sectors on economic growth. The results revealed that in the short and long run, net domestic credit has negative and significant impact on economic growth and gross premium has a positive and significant impact. Pension assets have negative and insignificant impact on economic growth in the short run but positive and insignificant impact in the long run. On the basis of the findings, the study noted that the impact of domestic credit on the real sector is minimal. Also, the insignificance of the pension sector may be due to the fact that the funds are mainly invested in fixed income securities, which later ends up with the retirees. The study recommended among others that government should provide the necessary infrastructure as the high cost of doing business translates to the high cost of borrowing in banks.

**KEY WORDS:** *Banking, Economic growth, Financial development indicators, Insurance, Pension*

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## 1. INTRODUCTION

The financial system plays an important role in an economy through efficient financial intermediation by mobilising savings, enhancing investment opportunities; facilitating exchange of goods and services; enabling hedging and diversification; and reducing information, transaction and monitoring costs (Adekunle et al., 2013). These functions are effectively performed when the financial system is well-developed. The level of financial development varies across countries in terms of financial structure, market and institutions and also largely depends on whether a country's financial system is dominated by the banking, capital market, insurance or pension sectors. To determine the financial development in these sectors various indicators have been developed to measure their size or depth, access, efficiency and stability (World Bank, 2006).

Available statistics shows that developed countries have well-developed financial system compared to the developing countries as the financial development indicators of the developed countries have remained on the increase. The World Bank Global Financial Development Report of 2017/2018 shows that in terms of financial depth measured by private credit by deposit money banks, 56 developed countries averaged 89.6%, while 129 developing countries averaged 34.9%. Also, the financial depth measured by stock market capitalization reveals that 49 developed countries averaged 110.8% and 66 developing countries averaged 44.8%. In terms of access measured by account at a formal financial institution, 48 developed countries averaged 87.1% and 109 developing countries averaged 33.4%. The efficiency ratio measured by stock market turnover ratio indicates that 52 developed countries averaged 42.2% while 64 developing countries averaged 21.3%. However, the efficiency indicator measured by percentage of bank lending-deposit spread was in favour of developing countries as 117 countries averaged 7.9%, while 53 developed countries averaged 4.1%.

In Nigeria, the financial system has witnessed developments and reforms that have changed the financial structure and markets as well as the regulatory landscape. Specifically, in the Nigerian banking, capital market, insurance and pension sectors, some of the developments and reforms include the consolidation of banks, introduction of a new banking model, establishment of the Asset Management Corporation of Nigeria, recapitalisation of insurance and re-insurance companies, adoption of risk-based supervision in the banking and

insurance sectors, establishment of the National Pension Commission, enactment of the Pension Act in 2004 (re-enacted in 2014) and enactment of the Investment and Securities Act, 2007 to repeal the 1999 Act, among others. The sectors play important role in the economy as the banking sector performs financial intermediation function by mobilising funds from surplus to deficit unit, the capital market serves as a platform for trading in long-term financial securities, the insurance sector provides protection against insurable risks and the pension sector offers income security for retirees.

The financial system is key to driving and supporting real sector growth but this depends largely on the extent of its development and responsiveness to a country's contemporary developmental challenges. Efforts have been made to ensure that the financial system impacts on the economy in Nigeria. However, the real sector continues to grapple with so many challenges, especially access to credit for the financing of businesses with the attendant high cost of borrowing from banks. Also, there has been low penetration of insurance in the economy occasioned by lack of patronage and low level of consumer awareness.

Several studies have been carried out to ascertain the impact of financial development on economic growth in Nigeria. However, most of the studies have utilised multiple indicators of the banking sector (Audu and Okumoko, 2013; Osuji, 2015; and Ndako, 2017) while some incorporated the indicators of the capital market (Ogwumike and Salisu, 2012; Omoruyi and Uwubamwen, 2014; Modebe and Ezeaku, 2016; and Karimo and Ogbonna, 2017). Studies using financial development indicators of the insurance sector are limited as only Monogbe et al. (2016) and Oliomu and Oligbi (2020) have utilised this indicator of financial development. However, there are no studies that have included financial development indicators of the pension sector. This study attempts to simultaneously capture the financial development indicators of the banking, insurance and pension sectors. Therefore, the objective of the study is to assess the impact of financial development indicators of the banking, insurance and pension sectors on economic growth in Nigeria. Specifically, the study determines whether financial development affect economic growth in the short and long run.

This study is structured into six sections. Following the introduction, Section 2 provides literature review on financial development and economic growth. Section 3 focuses on the data and methodology of the study and Section 4

discusses the analysis and result. Section 5 presents the conclusion and recommendation.

## **2. LITERATURE REVIEW**

### **2.1. Theoretical review**

Literatures on financial development provide some theoretical underpinnings on the relationship between financial development and economic growth. Although the widespread view is that financial development engenders growth but there are other divergent studies. The nexus between financial development and economic growth was first theoretically posited by Schumpeter in 1911 that financial intermediaries provide services which are fundamental drivers for economic growth.

One of proponents of financial development and economic growth theory, Goldsmith (1969) recognised the financial liberalization allows market to determine interest rate, which consequently stimulates savings thereby providing loanable funds for banks and in turn raising the level of investments, leading to economic growth. Pagano (1993) emphasises the significance of financial intermediation and other factors as essential to economic growth. He used the endogenous growth to show how financial intermediation with respect to the capital market could affect economic growth in an economy through three basic channels viz: the proportion of savings channelled to investment; the marginal productivity of capital; and the rate of savings.

Patrick (1966) provides a two-way causal relationship between financial development and economic growth, which he affirms varies depending on the stages of development in an economy. This could either be supply-leading, which occurs at the early stages of economic development or demand-following, which takes place subsequently. The supply-leading hypothesis is premised on the existence of financial services in advance of the demand for them while demand-following is occasioned by the growth and development in the economy, which creates demand for financial services.

McKinnon (1973) posits that financial liberalisation devoid of government regulation is key to increasing saving rates and enhancing investment. Shaw (1973) notes that financial institutions promote investment by providing savings and borrowing to investors by facilitating savings and borrowing. They view that

financial liberalization allows market to determine interest rate, which consequently stimulates savings thereby providing loanable funds for banks and in turn raising the level of investments, leading to economic growth.

## **2.1. Empirical review**

Several empirical literatures abound on financial development and economic growth, which include cross and individual country analyses. However, the literature reviewed in this study have been streamlined along some individual country analysis with more focus on Nigeria.

Ogwumike and Salisu (2012) analysed the relationship between financial development and economic growth in Nigeria for the period 1975 to 2008 using the Autoregressive Distributed Lag Bounds test approach as well as VAR-Granger causality test. The variables included stock market capitalization, credit to the private sector, real discount rate, bank deposit liability, investment and real GDP as well as a dummy variable to reflect financial sector reform. The results showed that there was a positive long run relationship between financial development and economic growth in Nigeria and supported the supply-leading hypothesis. Also, financial reform which was positively significant impacted on economic growth.

Okwo et al. (2012) examined the relationship between financial development and economic growth in Nigeria using the ratio of broad money (M2) to GDP and the ratio of credit extended to the private sector GDP. The control variables included government consumption and trade openness. The study covered the period 1986 to 2010 with simple regression of an endogenous growth model employed for the analysis. The results showed that financial development had negative effects on economic growth in Nigeria and there was a positive long-run relationship between government consumption and trade openness. The financial sector development indicators were statistically significant in deepening the financial sector but no causality was found between financial sector development measures and economic growth.

Osuji and Chigbu (2012) investigated the impact of financial development on economic growth in Nigeria using data from 1960 to 2008. Money supply, credit to private sector and GDP were the variables used. The study employed granger causality test, co-integration and error correction model. The results revealed

that money supply and credit to private sector were positively related to economic growth. The Johansen tests showed that money supply and credit to private sector were cointegrated with GDP while the Granger test indicated a bi-directional causality.

Sackey and Nkrumah (2012) used quarterly data from 2000 to 2009 and employed the Johansen co- integration approach in a bivariate VAR model to analyse financial development and economic growth in Ghana. The study used the ratio of M2 to GDP economic growth represented by GDP. It revealed that there was a positive relationship between financial development and economic growth for Ghana.

Adekunle et al. (2013) examined the impact of financial sector development and economic growth in Nigeria covering the period 1992 to 2008. The financial development indicators utilised include the ratio of liquidity liabilities to GDP (M2/GDP), real interest rate, ratio of credit to private sector to GDP while the economic growth was measured by the real GDP. The study employed the OLS method of the regression analysis and the results showed that the ratio of liquid liabilities to GDP and the ratio of credit to private sector to GDP significantly impacted on economic growth while real interest rate was negatively related.

Oriavwote and Eshenake (2014) used time series data from 1990 to 2011 and employed the cointegration technique and error correction model (ECM) to ascertain the relationship between financial development and economic growth in Nigeria. The variables were real gross domestic product, ratio of money supply to gross domestic product, liquidity ratio, minimum capital base, interest rate and credit to the private sector. The results revealed that credit to private sector had not improved the level of economic growth in Nigeria. However, the minimum capital base and liquidity ratio improved the level of economic growth. The Johansen cointegration test and ECM indicated a long run relationship among the variables.

Modebe and Ezeaku (2016) conducted a similar study in Nigeria using data from 1987 to 2014. The variables included growth rate of real GDP at current basic prices; banking credit to private sector as a percentage of real GDP; broad money stock as a percentage of real GDP; financial depth, measured as total deposit as a percentage of real GDP; trade openness, measured as sum of imports and exports relative to real GDP; stock market capitalization as a

percentage of GDP; foreign direct investment and inflation rate. The study employed Johansen cointegration and Granger causality tests. The results showed that credit to the private sector, stock market capitalization and inflation had negative impact on the economy, while broad money supply, trade openness and foreign direct investment exerted positive influence on the economy. The granger causality test showed that stock market granger causes GDP, GDP causes foreign direct investment and no causality for other variables.

Ndubuisi (2017) employed the multivariate VAR framework approach to co-integration to evaluate the long-run relationships between financial development and economic growth in Nigeria. The study period covered 1981 to 2014. The financial development variables utilised include deposit money bank assets as percentage GDP, ratio of liquid liabilities to GDP and ratio of private sector credit of deposit money banks to GDP with real GDP as proxy for economic growth. The result showed that there was long run unidirectional causality running from economic growth to liquid liability and deposit money bank assets while deposit money bank assets have little significant influence on real GDP in the long run.

Mohieldin, Hussein and Rostom (2019) carried out a study on Egypt using ARDL. The data used were financial development and financial market indicators for measuring depth, access and efficiency as well as real GDP per capita for the period 1980 to 2016. The study established that there is a relationship between financial market indicators and economic growth. Financial development indicator for depth also showed similar result. However, the financial development indicators for access and efficiency showed no relationship with economic growth.

Ohiomu and Oligbi (2020) examined the effect of financial sector development and financial deepening on economic growth in Nigeria using the ARDL technique. The data covered 1981-2018 and the variables included ratio of market capitalization, credit to private sector and savings to GDP; insurance income; volume of money market instruments; and GDP growth rate. The results of the study revealed that the financial development indicators influence economic growth.

Most of the studies reviewed have mainly used the financial development indicators of the banking sector and capital market with few on the insurance sector. However, this study considers the financial indicators of the pension

sector and employs quarterly data covering the period when pension data was available.

### **3. DATA AND METHODOLOGY**

#### **3.1. Data description**

The research design adopted in this study is *expost facto*. The study assesses the impact of financial development indicators of the banking, insurance and pension sectors on economic growth in Nigeria using quarterly data from 2007 to 2019. The period considered is premised on the availability of data for the pension sector and various reforms in the financial system within the study period. The data are sourced from the Central Bank of Nigeria, the National Insurance Commission and the National Pension Commission. The data utilised in the study are ratios of net domestic credit, gross insurance premium, total pension assets to GDP and economic growth rate. The net domestic credit is the total credit made available to borrowers in the country by financial institutions market capitalisation is the total value of all securities listed on a Stock Exchange, gross insurance premium denotes the income from life and non-life businesses, interest, dividends, rents and other receipts and the total pension assets refers to the assets in the Retirement Savings Account, Closed Pension Fund Administration Scheme and Approved Existing Scheme. The economic growth rate is a measure of the GDP growth rate in the economy.

#### **3.2. Model specification**

In line with the theoretical and empirical literatures, the study adapted the model of Ogwumike and Salisu (2012). This was based on the fact that the model explored the key financial development indicators of the banking system, which has been reformulated in this study to analyse the impact of financial development indicators of the banking, insurance and pension sectors on economic growth. The relationship between the variables is stated in the functional model below:

$$\text{GRT} = f(\text{NDC}, \text{GPM}, \text{TPA}) \quad (1)$$

Where GRT = economic growth rate; NDC = ratio net domestic credit to GDP; GPM = ratio of gross premium to GDP and TPA = ratio of total pension assets to GDP

### 3.3. Estimation technique

The study employed the Autoregressive Distributed Lag (ARDL) model, which includes the lagged values of the dependent and independent variables in the regression equation. The model is desirable because it provides short and long run (using ARDL bounds test) relationship among the variables and consistent results for small sample. The ARDL model can be estimated if the order of integration of the unit root test is either I(0) or I(1). Also, the ARDL Error Correction Model (ECM) can be obtained from the ARDL bounds testing, where cointegration among the variables has been established. The variables are tested for stationarity using the Augmented Dickey Fuller test.

The functional equation in (1) is transformed to an ARDL model as specified below:

$$\Delta GRT_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta GRT_{t-i} + \sum_{i=1}^n \beta_{2i} \Delta NDC_{t-i} + \sum_{i=1}^n \beta_{3i} \Delta GPM_{t-i} + \sum_{i=1}^n \beta_{4i} \Delta TPA_{t-i} + \varepsilon_{it} \quad (2)$$

Where  $\beta_0$  = constant term;  $\beta_{1i}$ ,  $\beta_{2i}$ ,  $\beta_{3i}$ ,  $\beta_{4i}$  = coefficients of autoregressive terms;  $\Delta$  = difference operator;  $i$  = lag length and  $\varepsilon_{it}$  is the error term

The lag length for the ARDL model in equation (2) is selected using the lag selection criteria of Akaike Information Criteria (AIC) and Schwarz Information criteria.

The ECM equation of the ARDL is presented below:

$$\Delta GRT_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta GRT_{t-i} + \sum_{i=1}^n \beta_{2i} \Delta NDC_{t-i} + \sum_{i=1}^n \beta_{3i} \Delta GPM_{t-i} + \sum_{i=1}^n \beta_{4i} \Delta TPA_{t-i} + \alpha ECM_{t-1} \quad (3)$$

Where ECM is the error correction term and the coefficient  $\alpha$  measures the speed of adjustment of the model convergence to long run equilibrium after a short run disequilibrium. It is expected to be negative and significant.

Diagnostic tests for normality, serial correlation and heteroscedasticity are carried out to test the goodness of fit of the model. In addition, the cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) tests are used to determine the stability of the coefficients of the model. Eviews

10.0 econometric software is used for the estimation of the model.

## 4. RESULTS AND DISCUSSION

The results of the empirical analysis of the study covering the descriptive statistics, unit root test, autoregressive distributed lag model, diagnostic test and stability test are discussed in this section.

### 4.1. Descriptive statistics

The descriptive statistics of the variables are presented hereunder:

**Table 1: Descriptive Statistics**

	GRT	NDC	GPM	TPA
Mean	4.217225	0.645267	0.011702	0.159958
Median	4.928550	0.747890	0.013330	0.178875
Maximum	8.082100	1.063280	0.016140	0.283770
Minimum	-2.340800	0.016380	0.003190	0.005580
Std. Dev.	2.781063	0.329884	0.004325	0.089555
Skewness	-0.607729	-0.791124	-1.053009	-0.589721
Kurtosis	2.435868	2.237774	2.433327	2.037311
Jarque-Bera	3.890425	6.683080	10.30559	5.022011
Probability	0.142957	0.035382	0.005783	0.081187
Sum	219.2957	33.55390	0.608510	8.317840
Sum Sq. Dev.	394.4499	5.550003	0.000954	0.409029
Observations	52	52	52	52

The skewness, which measures asymmetry shows that the variables are negatively skewed. In respect of Kurtosis, the variables are all positive and less than 3, indicating that the distribution is flat (platykurtic) and not peaked. The Jarque Bera estimates for NDC and GPM are not normally distributed due to their low probability values which are lower than the probability value of 0.05. On the other hand, GRT and TPA are normally distributed.

### 4.2. Unit root test

The result of the unit root test shows that the variables are all non-stationary at level but stationary at first difference at 1%, 5% and 10% as shown below:

**Table 2: Unit Root Result**

Variables	ADF at Levels	ADF at First Difference	Critical Values			I(d)
			1%	5%	10%	I(1)
GRT	-1.297365	-6.493723	-3.568308	-2.921175	-2.598551	I(1)
NDC	-1.814794	-7.702736	-3.568308	-2.921175	-2.598551	I(1)
GPM	-2.218434	-7.114571	-3.568308	-2.921175	-2.598551	I(1)
TPA	-1.136314	-8.352535	-3.568308	-2.921175	-2.598551	I(1)

### 4.3. Autoregressive Distributed Lag Model results

The results of the short and long run ARDL models are discussed below.

#### 4.3.1. Short run ARDL result

The result of the short run ARDL in Table 3 shows that net domestic credit has a negative significant impact on economic growth at 5% level and a unit change in the fourth difference of domestic credit will lead to 11.03 decrease in the current value of economic growth. Gross premium has a positive significant impact on economic growth and a unit change in the fourth difference of the variable will lead to 378.91 increase in the current value of economic growth. Total pension assets have negative and insignificant impact on economic growth and a unit change in the third difference of total pension assets will lead to 25.70 decrease in the current value of economic growth. The coefficient of determination shows that 97% variation in economic growth is accounted by the independent variables and the F-statistics of 35.12 is significant.

**Table 3: Short Run ARDL Result**

Variables	Coefficients	Std. Error	T. Stats.	Probability
C	2.845866	0.617070	4.611902	0.0001*
GRT(-1)	0.626594	0.139187	4.501823	0.0001*
NDC(-4)	-11.03387	2.644002	-4.173170	0.0002*
GPM(-4)	378.9120	130.5509	2.902407	0.0070*
TPA(-3)	-25.69534	13.47505	-1.906882	0.0665**
<b>Statistical Tests</b>				
R-squared	0.956137			
Adj. R-square	0.928911			
F-statistic	35.11901			
Log likelihood	-42.26158			
Akaike AIC	2.552566			
Schwarz SC	3.293250			

\* significant at 5%, \*\*insignificant at 5%

#### 4.3.2. ARDL bounds test result

The estimates of the ARDL bounds test in Table 4 showed that net domestic credit and gross premium are significant at 5% but the former has a negative impact while the latter has a positive impact. The total pension assets have positive insignificant impact on economic growth. The F-statistics of 6.555 is greater than the lower and upper bounds critical values, indicating that a long run cointegrating relationship exist among the variables as 6.555. The result of the ARDL error correction model in Table 5 showed that the model converges to equilibrium from the previous year to the current year as indicated by the negative ECM of 0.47, which is significant at 5% level.

**Table 4: ARDL Long Run Form and Bounds Test**

Variable	Coefficient	Std. error	t-statistics	Probability
NDC	-14.07278	4.854643	-2.898829	0.0071*
GPM	465.8283	128.2893	3.631077	0.0011*
TPA	6.860167	15.67426	0.437671	0.6649**
C	5.996699	0.959645	6.248875	0.0000*
Critical value	Lower bound		Upper bound	
1%	3.65		4.66	
5%	2.79		3.67	
10%	2.37		3.20	
F- statistics	6.555924			

\* significant at 5%, \*\*insignificant at 5%

**Table 5: ARDL Error Correction Model**

Variable	Coefficient	Std. error	T-statistics	Probability
D(GRT(-2))	0.429081	0.117404	3.654752	0.0010
D(NDC(-3))	11.03387	2.225160	4.958687	0.0000
D(GPM(-3))	-378.9120	113.2752	-3.345057	0.0023
D(TPA(-2))	25.69534	10.37246	2.477265	0.0193
ECM(-1)	-0.474572	0.077704	-6.107450	0.0000
Statistics Test				

R squared	0.640070
Adjusted R squared	0.487372
Durbin Watson	1.839444

#### 4.4. Diagnostic test results

Table 6 presents the results of the diagnostic test. The Breusch-Godfrey Serial Correlation LM Test indicates that the residuals are serially uncorrelated given the F-statistics probability value of 0.8645, therefore the null hypothesis of no serial correlation is not rejected. The Breusch-Pagan-Godfrey Heteroskedasticity Test null hypothesis is that the residuals are homoscedastic, which is not rejected as the F-statistics probability value of 0.5219 is significant at 10%. The Jarque-Bera normality test shows that the residuals are normally distributed.

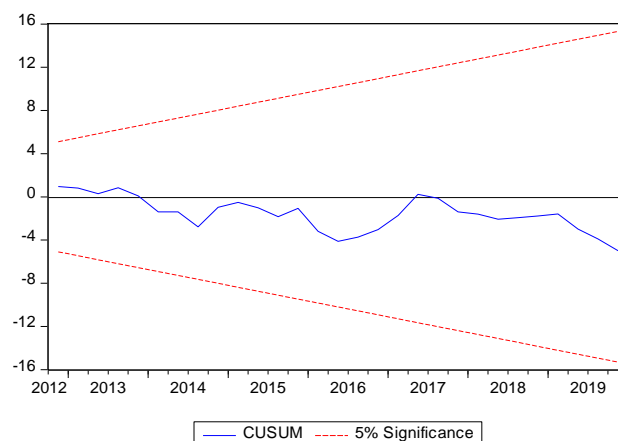
**Table 6: Diagnostic Test**

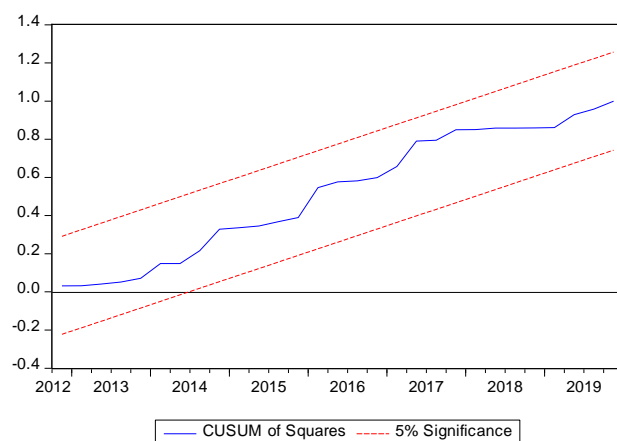
Test	F-statistics	Probability
Breusch-Godfrey Serial Correlation LM Test	0.146391	0.8645
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.962828	0.5219
Jarque-Bera	0.511474	0.774346

#### 4.5. Stability test results

The CUSUM and CUSUM of squares test result presented in figure 1 shows that the ARDL model is stable as the cumulative sum of recursive residuals and cumulative sum of squares of recursive residuals all lie within the critical lines of 5% significance level.

**Figure 1: Plot of CUSUM and CUSUM of Squares**





## 5. CONCLUSION AND RECOMMENDATION

The study examined the impact of financial development indicators of the banking, insurance and pension sectors on economic growth using the ARDL model. The results show that in the short and long run, net domestic credit has negative impact on economic growth and gross premium has a positive impact. Pension assets have negative impact on economic growth in the short run and positive impact in the long run. The study shows that financial development in Nigeria is a mixed. The negative impact of domestic credit may not be unconnected with the high cost of borrowing from banks. This is also attributable to the practice by banks of investing more in government securities instead of lending to the real sector. The positive impact of insurance is likely due to the large proportion of non-life insurance gross income generated. The short and long run insignificant negative and positive impact of pension assets in the economy is not in the least unexpected as the funds are mostly invested in fixed income instruments that do not directly impact on the economy and in the long run, the funds are channelled to retirees. Based on the findings, it is recommended that government should provide the necessary infrastructure to improve business operations as the high cost of doing business translates to the high cost of borrowing in banks. There is a need to deepen the insurance sector with respect to life insurance policies given the low level of consumer awareness in this regard.

The study is limited in scope due to the unavailability of pension data as the collection of the data commenced following the enactment of the Pension Reform act in 2004. Future research in this area should explore other financial development indicators such as mortgage, foreign exchange and financial stability. Also, the relationship between financial development and poverty/inequality in Nigeria should be examined.

## DISCLOSURE OF CONFLICT

The authors declare that they have no conflicts of interest.

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