

# CAPITAL MARKET AND INDUSTRIAL PERFORMANCE NEXUS: Empirical Evidence from Nigeria

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## ABSTRACT

*This paper examined the causal relationship between the capital market and the performance of the industrial sector in Nigeria from 1985 to 2015. The paper derived its theoretical basis from the finance-led growth hypothesis and the endogenous growth theory. For empirical analysis, the Phillips-Perron unit root was adopted to determine the time series characteristics of the variables, while causality was examined by employing the Granger causality test approach. Findings revealed that there is a unidirectional causality running from market capitalization ratio and total value of shares traded ratio to industrial performance. The paper recommends improved publicity on the strategic role of the capital market as well as a strong regulatory mechanism for its efficient and smooth operation in order to mobilise long term funds for industrial development in Nigeria.*

**JEL Classification:** B4, C1, G2, L6, L7

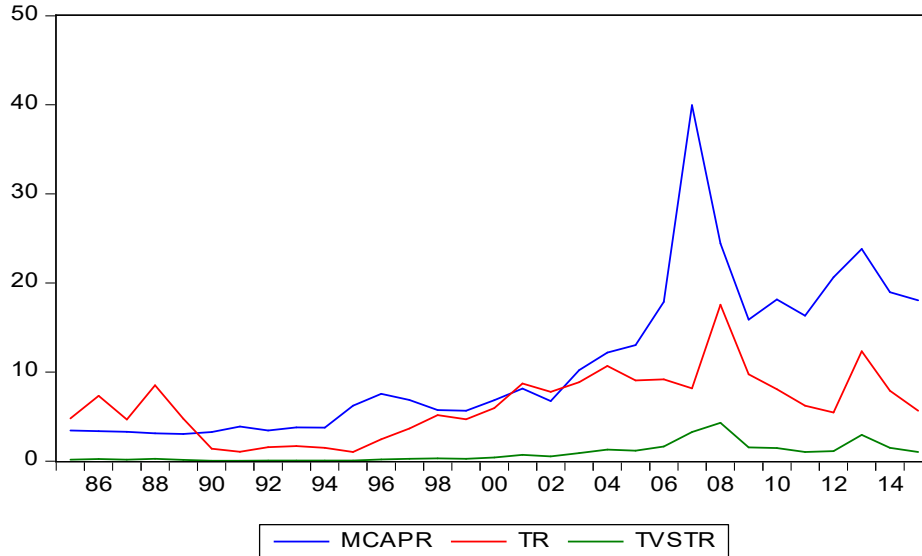
## 1. Introduction

INDUSTRIALIZATION has been identified as a key ingredient in the growth and development process of developing countries, including Nigeria. The global development agenda emphasizes the need for industrialization as reflected in one of the United Nations Sustainable Development Goals of inclusive and sustainable industrialization (UN, 2015). Industrialization is basically concerned with the development of the capacity to transform raw materials to finished goods (Anyanwu, 1997), with a far-reaching impact on employment generation, poverty reduction, external balance, improved quality of life, high productivity and modernisation (Nyong, 2011; Todaro and Smith, 2011; Ebong, Udoh and Obafemi, 2014). However, industrialization thrives on the foundation of key infrastructures and institutions which are built through capital formation. The capital market serves as an avenue for capital formation and mobilization (Ly, 2011). Although, there are other avenues for the mobilization of financial resources for industrial development, the capital market is believed to be more potent in the sense that it mobilises long term financial resources and diversifies risks. Nigeria's bid to industrialize its economy has been hampered by several

factors including poor infrastructure, weak institutions, inadequate capital and financial resources, etc. Such factors have resulted in an unimpressive performance of the industrial sector. For instance, the industrial sector accounted for about 25.23% of gross domestic product (GDP) in 1986, fluctuated before falling to 16.01% in 2015 (CBN, 2015). However, the industrial sector has continued to trail the agricultural sector which contributed about 20.86% to total output in 2015.

In Nigeria, the establishment of a formal capital market dates back to 1961. But the market was dormant until the introduction of structural adjustment programme (SAP) in 1986. The number of tradable securities increased as a result of the implementation of SAP, with much wider impact on the development of the capital market. In the post-SAP era, the market became a truly capitalist instrument for mobilizing and allocating capital funds in the process of wealth creation rather than as a vehicle for wealth distribution, as the pre-SAP activities tend to portray. Policies and strategies tended to be more market related than before. In addition, the deregulation of the foreign exchange and interest rates which were the pillars of SAP, encouraged many companies to seek for cheaper source of long term funds which only the capital market could produce (Dada, 2003). Over the years, the capital market has shown signs of improved performance as revealed by some key stock market indices, especially during the post-SAP era. The number of listed domestic companies rose from 174 in 1993 and peaked at 215 in 2005, before plunging to 183 in 2015 (World Bank, 2015). Stock market capitalization ratio increased from 3.3% in 1986 to 18.06% in 2015. The value of shares traded ratio rose from 0.25% in 1986 to 1.02% in 2015. The all share index rose steadily from 1,407.4 basis points in 1985 to 370,406 basis points in 2015 (CBN, 2015).

Surprisingly, the moderate performance of the capital market has not translated to a remarkable growth of the industrial sector. The capital market in Nigeria lacks depth and breadth, and is constrained by poor infrastructure (Dada, 2003). It is against this backdrop that this study seeks to determine if there exist any causal relationship between capital market and industrial sector performance in Nigeria. The literature is replete with studies on capital market– economic growth nexus (Oke and Adeusi, 2012; Olweny and Kimani, 2011; Paramata and Gupta, 2011). There exist scanty studies on capital market and industrial performance nexus. This study attempts to fill the existing knowledge gap by focusing on the causal relationship between the capital market and industrial performance using extended data points in Nigeria.



**Figure 1: Trend in stock market indices in Nigeria**  
 Source: Based on the data obtained from CBN (2015)

The rest of this report is organized as follows: section two reviews relevant literature and theoretical framework, while section three dwells on the methodology. Section four presents the results and discusses the findings, while section five deals with the conclusion and recommendations.

## 2. Literature Review and Theoretical Framework

### 2.1 Literature review

There exists a plethora of studies on capital market-growth nexus. These studies cut across several continents. Some existing literature report a positive relationship between capital market development and growth, while others show a negative relationship. However, some studies report a relationship which changes, depending on the short or long-run situation. In Europe, Elias (2007) reviewed literature on the finance-growth nexus within a neoclassical framework. The empirical evidence revealed that, in underdeveloped and emerging countries, financial development fosters aggregate investment mainly by lowering the cost of capital, while in advanced economies, it is by raising total factor productivity. Arav (2010) studied capital markets and economic development as a framework

for newly liberalized economics. He pointed out that the confidence in the future and the confidence of the investors in this future are the *sine qua non* for the success of capital markets. He concluded that the role of the government in providing confidence in the capital market is pivotal to the implementation of efficient capital markets and to the propelling of economic growth.

In Asia, Paramata and Gupta (2011) undertook an empirical analysis of stock market performance and economic growth in India. They used monthly index of industrial production (IIP) and quarterly by gross domestic product (GDP) data for the time span of April 1996 to March 2009. For the empirical analysis, they adopted unit root (ADF, PP and KPSS) tests, Granger causality test, Engle-Granger cointegration test and error correction relationship between IPP and stock prices (BSE and NSE). Quarterly results revealed that there is no relationship between GDP and BSE but in the case of NSE and GDP there is unidirectional relationship that runs from GDP to NSE. The Engle-Granger residual-based cointegration test suggested that there is long-run relationship between the stock market performance and economic growth. Similarly, the results of error correction model revealed that when the long-run equilibrium deviates then the economic growth adjusts to restore equilibrium by rectifying the disequilibrium.

Masoud and Hardaker (2014) investigated the effect of stock market development, banks' development and firms' growth using Saudi Arabian industrial firm-level data set for the period 1995-2013 and applying GMM, MG techniques model developed for dynamic panels. The econometric results revealed that with more development in the stock market, firms that use equity finance heavily grow faster than firms that do not. There also exist some studies on capital market-growth nexus in some African countries. In a study on capital market development and growth in sub-Saharan Africa, using Tanzania as a case study, Ziorklui (2001) maintained that introduction of high-yield government short-term treasury bills have increased the demand for treasury bills at the expense of credit to the private sector. As a result, commercial banks tend to switch a greater proportion of their deposit liabilities into treasury bills. Portfolio switching tends to crowd out the private sector and productive activities from the capital market.

Olweny and Kimani (2011) investigated the causal relationship between stock market performance and economic growth in Kenya using quarterly secondary data for the period 2001-2010. The data were empirically analysed using the Granger causality test based on the vector autoregressive (VAR) model.

The Johansen cointegration test was used to investigate whether the variables were cointegrated of the same order, taking into account the trace statistics and maximum Eigen-value tests. The variables were found to be cointegrated with at least one cointegrating vector. The Granger causality test revealed that the causality between economic growth and the stock market runs unilaterally or entirely in one direction.

The literature is replete with many studies on capital market and growth relationship in Nigeria. Udegbonam (2002) studied openness, stock market development and industrial growth in Nigeria using annual data covering the period 1970-1997. A simple model which relates industrial output growth to openness, stock market development and a battery of control variables was specified and estimated. The empirical evidence strongly suggested that openness to world trade and stock market development are among the key determinants of industrial output growth in Nigeria. Nyong (1997) in Oke and Adeusi (2012) developed an aggregate index of capital market development and used it to determine its relationship with long-run economic development in Nigeria, employing time series data from 1970 to 1994. Four measures of capital market development ratio of market capitalization to GDP (in percentage), ratio of total value of transaction on the main stock exchange to GDP (in percentage), and value of equities transactions relative to GDP and listing were used. The four measures were combined into one overall composite index of capital market development using principal component analysis. The financial market depth was included as a control. It was found that the capital market development is negatively and significantly correlated with the long-run growth in Nigeria.

Udoh and Ogbuagu (2012) reported a cointegration relationship between financial sector development and industrial production. Both long and short-run dynamic coefficients of financial sector development variables had negative and statistically significant impact on industrial production. Udah and Obafemi (2012) investigated empirically the impact of financial sector reforms on agricultural and manufacturing sectors in Nigeria. They adopted the variance decomposition and impulse response paradigms to test whether or not financial sector variables stimulate the growth of output in agricultural and manufacturing sectors of the Nigerian economy. The results suggested that relaxing the financial development constraints and deepening the financial sector are crucial to boosting economic growth in the two identified sectors.

Idyu, Ajekwe and Korna (2013) using the ordinary least square (OLS) estimation technique showed a positive significant impact of market capitalization

on industrial sector component of the gross domestic product. Ewetan and Ike (2014) examined the long-run and causal relationship between financial sector development and industrialisation for the period 1981-2011, using time series data. The results from multivariate VAR and vector error correction model provided evidence of long-run relationship between financial sector development and industrialization in Nigeria. The Granger causality test revealed long-run unidirectional causal link running from industrialization to financial sector development. The study concluded that there is the urgent need for government to consolidate on past financial sector reforms to address the challenges of financial intermediation in the domestic financial sector to improve loan disbursement to the industrial sector of the economy. Israel and Buzugbe (2015) studied capital market and the performance of the manufacturing industries in Nigeria for the period 1970-2012, within the framework of error correction mechanism. The study revealed that there is a long-term relationship between capital market and the development of manufacturing firms in Nigeria, but the growth in capital market activities did not impact significantly on the manufacturing sector during the period under review.

The available strand of literature has revealed the existence of a few related studies on the relationship between capital market and industrial sector. These cover different time periods and deploy different analytical methods. For instance, Udegbunam (2002) studied openness, stock market development and industrial growth in Nigeria using annual time series data covering the period, 1970-1997. Idyu, Ajekwe and Korna (2013) deployed the ordinary least square in analysing the impact of market capitalization on industrial sector component of gross domestic product. Israel and Buzugbe (2015) evaluated capital market and the performance of the manufacturing industries in Nigeria for the period, 1970-2012 within the framework of error correction mechanism. However, the current study focuses on the post-SAP era, in which the capital market was free from the shackles of intense regulation that was obtainable in the decades prior to the implementation of structural adjustment programme (SAP). The study also improved on previous studies by adopting extended data points so as to achieve an up-to-date analysis of the capital market in relation to industrial sector performance in Nigeria.

## **2.2 Theoretical framework**

The nexus between the capital market and industrial performance in Nigeria can be studied within the framework of finance-led growth hypothesis and

endogenous growth theory. The finance-led growth hypothesis is based on an observation first made almost a century ago by Joseph Schumpeter that financial market significantly boosts real economic growth and development. The hypothesis postulates that the existence of financial sector, as well as a well-functioning financial intermediation mechanism provide avenues for channelling scarce and limited resources from the surplus spending units to the deficit units, thus boosting investment and, thereby, stimulating growth (Ovat, 2012). Following from Schumpeter (1912), Goldsmith (1969), McKinnon (1973) and Shaw (1973) laid the foundation for finance-led growth hypothesis. They argued that financial development promotes growth through savings and investments. In contrast, Robinson (1952) and Romer (1990) stated that economic growth generates demand for financial services (demand-following). But Wood (1993) and Akinboade (1998) reported a bidirectional relationship between finance and growth.

The endogenous growth model is one in which the long-run growth rate of output per worker is determined by variables within the model, rather than an exogenous rate of technological progress, such as a neoclassical growth model (Effiom, 2011). The vast literature on endogenous growth theory is built on the foundation earlier laid by Romer (1990), Grossman and Helpman (1991), Aghion and Howitt (1992) and Young (1998). The endogenous growth theory considers that whereas the production function of a firm exhibits constant returns to scale (i.e, constant returns from all factors), there occur external increasing returns to scale. These external increasing returns to scale are due to the technological improvement which results from the rate of investment, size of the capital stock and the stock of human capital (Ahuja, 2000).

As a major criticism of the endogenous growth model, Parente (1999) in Effiom (2011) argues that the endogenous models do not help us understand why the whole world is not rich, especially in the face of huge differences in living standards. Another major weakness of the endogenous growth theories is the collective failure to explain conditional convergence reported in empirical literature (Sachs and Warner, 1997). Krugman (2013) criticised endogenous growth theory as nearly impossible to check by empirical evidence. However, the endogenous growth model commands more relevance in this study. The motivation for the endogenous growth model stems from the failure of the neoclassical theories to explain the sources of long-run economic growth. The capital market is an endogenous factor that stimulates industrial growth in an economy. The endogenous growth theory stresses the importance of financial

intermediation for economic growth as many important services are provided by a country's financial system.

### **3. Methodology**

This study adopts the Granger causality test as an analytical methodology to investigate the nature of the relationship between capital market and industrial performance. The Granger causality test will determine the relationship between the variables of interest. According to Engle and Granger (1987), if two variables are cointegrated, then there is possibility of causality between the two at least in one direction. Before applying the Granger causality test, it is important to conduct a stationarity test to ascertain that the variables in question are stationary either at level form or at first difference (Iyeli, 2010). Given that time series data have a tendency for nonstationarity, there is need to conduct a stationarity test to prevent spurious or nonsensical results. The parameter estimates from such a regression may be biased and inconsistent (Engel and Granger, 1987). The standard approach for testing stationarity of time series data is the unit root test. One of the most commonly used techniques in testing the existence or otherwise of unit root is the Phillips-Perron (PP) unit root tests. Phillips and Perron use nonparametric statistical methods to take care of the serial correlation in the error terms without adding lagged difference terms (Gujarati, 2013). This study adopts this technique, and employs annual time series data, sourced from Central Bank of Nigeria statistical bulletin (various years) and World Bank database (various years).

#### **3.1 The model**

The linkage between capital market and economic growth (in this case, industrial growth) has occupied a central position in the development literature. In examining this on Nigerian data, the study used the endogenous growth model to explain the sources of growth in an economy. The endogenous growth model specifies output as a linear function of labour (L), capital (K) and the index of technology (A), expressed as:

$$Y = f(K, L, A)$$

1

*Where:*

*Y*= Output

*K*= Capital input



$L$ = Labour input

$A$ = Index of technology

The application of this method, however, has been extended and augmented to incorporate the capital market indices like market capitalization ratio and total value traded ratio. It also includes such variables as share of expenditure on education in GDP and the share of domestic investment in GDP. The model in functional form is presented as follows:

$$INDGDP = F(MCAPR, TVSTR, EDUGDP, INVGDP) \quad 2$$

Where:

$INDGDP$  = Share of industrial sector in GDP. This is an indicator of the performance of the industrial sector.

$MCAPR$  = Market capitalisation ratio. This measure equals the value of listed shares divided by gross domestic product (GDP). The ratio is used as a measure of market size. The idea of the indicator is that, the larger the market size, the higher the ability to mobilise capital and diversify risk.

$TVTR$  = Total Value of shares traded ratio. This is the total value of shares traded on the floor of the stock exchange divided by GDP. It reflects stock market liquidity in an economy wide basis.

$EDUGDP$  = Share of recurrent expenditure on education in GDP. It indicates the quality of the labour force.

$INVGDP$  = Share of domestic investment in GDP. It measures the extent to which mobilized capital is invested in the economy.

The model in its econometric linear form can be stated as;

$$INDGDP = \beta_0 + \beta_1 MCAPR + \beta_2 TVSTR + \beta_3 EDUGDP + \beta_4 INVGDP + U \quad 3$$

Where  $U$  is stochastic error term

For the purpose of causality test, the pairwise causality specification is given as:

$$INDGDP_t = \alpha_0 + \alpha_1 MCAPR_{t-1} + \alpha_2 TVSTR_{t-1} + \alpha_3 EDUGDP_{t-1} + \alpha_4 INVGDP_{t-1} + \alpha_5 INDGDP_{t-1} + U_t \quad 4$$

#### 4. Empirical Results and Analysis

Table 1 presents the descriptive statistics of the relevant variables in this study. This aim is to show the behaviour of the variables during the period under review. The data in table 1 reveal that share of recurrent expenditure on education in

GDP, share of industrial sector in GDP and share of domestic investment in GDP have mean values of 0.4%, 24.9% and 6.7%, respectively. Also, market capitalization ratio and total value of traded ratio have mean values of 10.9% and 0.9%, respectively. The minimum values of share of recurrent expenditure on education in GDP, share of industrial sector in GDP and share of domestic investment on GDP are 0.03%, 16.01% and 3.61%, respectively. Also, market capitalization ratio and total value of shares traded ratio have minimum values of 3.05% and 0.041%, respectively. The variables, EDUGDP, INDGDP, INVGDP, MCAPR, and TVSTR have maximum values of 0.84%, 33.33%, 15.27%, 39.95% and 4.29%, respectively. The data also show that recurrent expenditure on education in GDP, share of industrial sector in GDP and share of domestic investment in GDP have standard deviation values of 0.20%, 4.35% and 3.0%, respectively. The standard deviation values for market capitalization ratio and total value of traded ratio are 8.7% and 1.035%, respectively. On the analysis of skewness, it is revealed that every other variable, except share of industrial sector in GDP, is positively skewed.

**Table 1: Descriptive statistics**

	<i>EDUGDP</i>	<i>INDGDP</i>	<i>INVGDP</i>	<i>MCAPR</i>	<i>TVSTR</i>
Mean	0.004190	0.249109	0.066521	0.108910	0.008751
Median	0.004188	0.247635	0.058704	0.068561	0.004082
Maximum	0.008403	0.333342	0.152687	0.399501	0.042881
Minimum	0.000320	0.160112	0.036120	0.030535	0.000406
Std. Dev.	0.001976	0.043528	0.029516	0.086974	0.010338
Skewness	0.269630	-0.037363	2.071085	1.401398	1.759157
Kurtosis	2.944371	2.252114	6.383159	5.003113	5.776521
Jarque-Bera	0.379615	0.729685	36.94598	15.32966	25.94648
Probability	0.827118	0.694306	0.000000	0.000469	0.000002
Sum	0.129893	7.722372	2.062159	3.376196	0.271268
Sum Sq. Dev.	0.000117	0.056840	0.026136	0.226936	0.003206
Observations	31	31	31	31	31

*Source:* Authors' computation

### Unit root test

The results of Phillips-Perron unit root test presented in table 2 reveal that apart from the share of recurrent expenditure on education in GDP, all the variables used in the study are stationary after first differencing. Thus, they are I(1) series. The share of recurrent expenditure on education in GDP is stationary at level, being I(0).

**Table 2: Phillips-Perron unit root test result**

Variable	At level t-Statistic	5% critical value	At first differencing t-Statistic	5% critical value	Order of integration
TVSTR	-2.927932	-3.568379	-8.474129	-3.574244	I (1)
MCAPR	-3.219652	-3.568379	-7.902297	-3.574244	I (1)
INVGDP	-1.342387	-3.568379	-6.249562	-3.574244	I (1)
INDGDP	-2.439704	-3.568379	-8.408952	-3.574244	I (1)
EDUGDP	-3.625161	-3.568379	-	-	I (0)

Source: Authors' computation.

### Causality test

The granger causality test result (table 3) shows that there is unidirectional causality running from total value of shares traded ratio to the share of the industrial sector in GDP. The result also shows that there is unidirectional causality running from market capitalization ratio to the share of the industrial sector in the GDP. On the other hand, there is no causality between the share of domestic investment in GDP and share of industrial sector in GDP. There is also no causality between the share of recurrent expenditure on education in GDP and the share of industrial sector in the GDP.

**Table 3: Result of the granger causality test**

Pairwise Granger Causality Tests			
Date: 03/08/18 Time: 08:37			
Sample: 1985 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
INDGDP does not granger cause EDUGDP	29	0.13628	0.8733
EDUGDP does not granger cause INDGDP		0.81878	0.4529
INVGDP does not granger cause INDGDP	29	0.49915	0.6132
INDGDP does not granger cause INVGDP		0.28571	0.7540
MCAPR does not granger cause INDGDP	29	5.55760	0.0104
INDGDP does not granger cause MCAPR		1.32167	0.2854
TVSTR does not granger cause INDGDP	29	4.32126	0.0250
INDGDP does not granger cause TVSTR		1.74838	0.1955

Source: Authors' computation

## 5. Conclusion and Recommendations

This study set out to investigate empirically the causal relationship between capital market and the performance of the industrial sector in Nigeria. The study examined the nexus between key capital market indices like market capitalization ratio (a proxy for market size) and total value of shares traded ratio (a proxy for

market liquidity) in Nigeria from 1985 to 2015. The study derived its theoretical basis from the finance-led growth hypothesis and the endogenous growth theory. In order to determine the time series characteristics of the variables used in the granger causality test, the study adopted the Phillips-Perron unit root test. The result of the unit root test showed that the variables were either stationary at levels or at first difference, which clearly means that granger causality test approach was well suited for the study.

The findings indicated that market capitalization ratio granger-causes industrial growth, as shown by the unidirectional relationship running from market capitalization ratio to industrial growth. It means that the size of the market can spur the performance of the industrial sector. The findings also showed that total value of shares traded ratio granger causes industrial growth as indicated by the unidirectional relationship running from total value of shares traded ratio to industrial growth. It implies that a highly liquid market triggers the performance of the industrial sector. The findings agreed with the submissions of Bayar, Kaya and Mura (2014), Ogboi and Oladipo (2012) and Olweny and Kimani (2011), who all reported a unidirectional relationship between capital market development and growth.

The policy implication of these findings is that Nigeria should evolve appropriate measures to develop the capital market and eliminate all factors militating against the development of a virile capital market. The size, liquidity and efficiency of the capital market have been shown to spur the performance of the industrial sector by pooling the much needed long-term financial resources for industrial development.

## References

- Aghion, P. and Howitt, P. (1992). A model of growth through creative destruction. *Econometrica*, 60(2): 323-352.
- Akinboade, O.A. (1998). Financial development and economic growth in Botswana: A test for causality. *Savings and Development*, 22(3): 331 -348.
- Anyanwu, J.C. et al. (1997). *The Structure of the Nigerian Economy*. Onitsha: Joanee Educational Publishers.
- CBN (2015). *Statistical Bulletin*. Abuja; CBN.
- Dada, D.O. (2003). *The Nigerian Capital Market: Development, Issues and Polices*. Lagos; Spectrum Books Limited.
- Ebong, F.S., Udoh, E. and Obafemi, F.N. (2014). Globalization and the industrial development of Nigeria: Evidence from time series analysis. *International Review of Social Sciences and Humanities*, 6(2): 12-24.
- Effiom, L. (2011). Industrial development models and the burden of choice. In: U. Elijah, R.O. Uchechi and E. Uwem (eds), *Industrial Development: A Catalyst for Rapid Economic Growth*. Port Harcourt: PN Davison Publications.

- Engel, R.F. and Granger, C.W. (1987). Cointegration and error correction representation, estimation and testing. *Econometrica*, 7: 251-276.
- Esosa, B.O. (2007). *Capital Markets: African and Global*. Lagos; BookHouse Company.
- Ewetan, O.O. and Ike, D.N. (2014). Does financial sector development promote industrialization in Nigeria? *International Journal of Research in Social Sciences*, 4(1).
- Goldsmith, R. (1969). *Financial Structure and Development*. New Haven: Yale University Press.
- Grossman, G. and Helpman, E. (1991). *Innovation and Growth in the Global Economy*. Cambridge: MIT Press.
- Gujarati, D.N. (2013). *Basic Econometrics* (5<sup>th</sup> ed). Glasgow: McGraw Hill Education.
- Idyu, I.A., Ajekwe, T. and Korna, J.M. (2013). The capital market and industrial Production in Nigeria. *IOSR Journal of Business and Management*, 10(6): 81-103.
- Israel, F.K. and Buzugbe, N.P. (2015). Capital market and the performance of manufacturing industries in Nigeria. *European Journal of Business and Management*, 7(13).
- Iyeli, I.I. (2010). *Empirical Econometrics: A Guide to Policy Modelling*. Port Harcourt: Pearl Publishers.
- Krugman, P. (2013). The new growth fizzle. *New York Times*, August 18.
- Masoud, N. and Hardaker, G. (2014). Stock market development, banks and firms growth: Empirical evidence from Saudi Arabia. *Canadian Centre of Science and Education*, 6(6).
- McKinnon, R.I. (1973). *Money and Capital in Economic Development*. Washington DC: The Brookings Institution.
- Nyong, M.O. (2011). Trade policy reform, manufactured exports and industrialization in Nigeria. In: U. Elijah, R.O. Uchechi and E. Uwem (eds), *Industrial Development: A Catalyst for Rapid Economic Growth*. Port Harcourt: PN Davison Publications.
- Ogboi, C. and Oladipo, S.O. (2012). Stock market and economic growth: The Nigerian experience. *Research Journal of Finance and Accounting*, 3(4).
- Oke, M.O. and Adeusi, S.O. (2012). Impact of capital market reforms on economic growth: The Nigerian experience. *Australian Journal of Business and Management Research*. 2(2): 20-30.
- Olweny, O.T. and Kimani, D. (2011). Stock market performance and growth: Empirical evidence from Kenya using causality test approach. *Advances in Management and Applied Economics*, 1(3): 153-196.
- Ovat, O.O. (2012). Does capital market development predict investment behaviour in a developing country? Evidence from Nigeria. *Journal of Contemporary Management*, July.
- Paramata, S.R. and Gupta, R. (2011). An empirical analysis of stock market performance and economic growth: Evidence from India. *International Research Journal of Finance and Economics*, 73.
- Robinson, J. (1952). The generalization of the general theory. In: J. Robinson (eds), *The Rate of Interest and Other Essays*. London: Macmillan. 86-87.
- Romer, P.M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5): S70-S102.
- Sachs, J.D. and Warner, A.M. (1997). Fundamental sources of long-run growth. *American Economic Review*, 87(2):184-188.
- Schumpeter, J. (1912). *The History of Economic Development*. Cambridge MA: Harvard University Press.
- Shaw, E. (1973). *Financial Deepening in Economic Development*. New York: Oxford University Press.

- Todaro, M.P. and Smith S.C. (2011). *Economic Development*. Essex: Pearson Education Limited.
- Udah, E.B. and Obafemi, F.N. (2012). The impact of financial sector reforms on agricultural and manufacturing sectors in Nigeria: An empirical investigation. *European Scientific Journal*, 8.
- Udegbonam, R.I. (2002). Openness, stock market development and industrial growth in Nigeria. *The Pakistani Development Review*, 41(1): 69-92.
- Udoh, E. and Ogbuagu, U.R. (2012). Financial sector development and industrial production in Nigeria (1970-2009): An ARDL cointegration approach. *Journal of Applied Finance and Banking*, 2(4): 49-68.
- UN (2015). *Sustainable Development Goals*. New York; UN.
- Wood, A. (1993). Financial development and economic growth in Barbados: Causal evidence. *Savings and Development*, 17(4): 379-390.
- World Bank (2015). *World Development Indicators*. Washington DC; World Bank.
- Young, A. (1998). Growth without scale effects. *Journal of Political Economy*, 106(1): 41-63.
- Ziorklui, S.Q. (2001). Capital market development and growth in sub-Saharan Africa: The case of Tanzania. *African Economic Policy Discussion Paper*, 79.

**APPENDIX**

**Granger causality test**

Pairwise Granger Causality Tests

Date: 03/06/18 Time: 09:19

Sample: 1985 2015

Lags: 2

<i>Null Hypothesis:</i>	<i>Obs</i>	<i>F-Statistic</i>	<i>Prob.</i>
INDGDP does not granger cause EDUGDP	29	0.13628	0.8733
EDUGDP does not granger cause INDGDP		0.81878	0.4529
INVGDP does not granger cause EDUGDP	29	0.47661	0.6266
EDUGDP does not granger cause INVGDP		0.10231	0.9031
MCAPR does not granger cause EDUGDP	29	0.15521	0.8571
EDUGDP does not granger cause MCAPR		0.06481	0.9374
TVSTR does not granger cause EDUGDP	29	0.19473	0.8243
EDUGDP does not granger cause TVSTR		0.14071	0.8695
INVGDP does not granger cause INDGDP	29	0.49915	0.6132
INDGDP does not granger cause INVGDP		0.28571	0.7540
MCAPR does not granger cause INDGDP	29	5.55760	0.0104
INDGDP does not granger cause MCAPR		1.32167	0.2854
TVSTR does not granger cause INDGDP	29	4.32126	0.0250
INDGDP does not granger cause TVSTR		1.74838	0.1955
MCAPR does not granger cause INVGDP	29	0.96066	0.3969
INVGDP does not granger cause MCAPR		0.39175	0.6801
TVSTR does not granger cause INVGDP	29	0.41455	0.6653
INVGDP does not granger cause TVSTR		1.20743	0.3165
TVSTR does not granger cause MCAPR	29	0.89721	0.4209
MCAPR does not granger cause TVSTR		20.9358	5.E-06

<b>Data</b>					
<i>Year</i>	<i>INDGDP</i>	<i>MCAPR</i>	<i>TVSTR</i>	<i>EDUGDP</i>	<i>INVGDP</i>
1985	0.265978	0.034326	0.001647	0.001345	0.045768
1986	0.252331	0.033591	0.00246	0.001298	0.056067
1987	0.262608	0.032874	0.001533	0.000902	0.061057
1988	0.268721	0.031218	0.002654	0.004554	0.054819
1989	0.292773	0.030535	0.001456	0.007185	0.064003
1990	0.29612	0.032621	0.000451	0.004809	0.080292
1991	0.314374	0.038755	0.000406	0.002108	0.075816
1992	0.333342	0.034293	0.00054	0.00032	0.07783
1993	0.29063	0.037726	0.000639	0.007055	0.076977
1994	0.276586	0.03761	0.000559	0.004188	0.059893
1995	0.297817	0.06231	0.000635	0.003366	0.049019
1996	0.305237	0.075626	0.001847	0.003042	0.053994
1997	0.284885	0.068561	0.002513	0.003613	0.059076
1998	0.229551	0.057224	0.002957	0.002961	0.052792
1999	0.247635	0.056525	0.002651	0.008217	0.043649
2000	0.304532	0.068474	0.004082	0.008403	0.047997
2001	0.241561	0.081447	0.007092	0.004903	0.04575
2002	0.19224	0.067498	0.005242	0.007106	0.044094
2003	0.218231	0.102191	0.009052	0.00487	0.065096
2004	0.230484	0.12196	0.013037	0.004418	0.049827
2005	0.228117	0.130223	0.011807	0.003718	0.03612
2006	0.21484	0.178662	0.016407	0.004152	0.053957
2007	0.206094	0.399501	0.032611	0.00457	0.058704
2008	0.206153	0.244216	0.042881	0.004188	0.052429
2009	0.169669	0.158761	0.015484	0.003096	0.068884
2010	0.220339	0.181611	0.014647	0.003128	0.07348
2011	0.248116	0.163151	0.010145	0.005332	0.062055
2012	0.236709	0.206389	0.011281	0.004858	0.046817
2013	0.219924	0.238192	0.029352	0.004875	0.14331
2014	0.206665	0.189515	0.01499	0.003861	0.152687
2015	0.160112	0.180609	0.01021	0.003454	0.149898

*Sources:* CBN Statistical Bulletin (various years), World Bank WDI (2015)