Globalization, Foreign Direct Investment and Industrial Sector Performance Nexus in Nigeria

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Abstract
One of the reasons for globalization and inflows of foreign capital is to adequately mobilize foreign investment to drive industrialization in developing countries. Hence, this study investigated the nexus between globalization, foreign direct investment and industrial sector performance in Nigeria. In achieving this, contemporary econometric approach involving unit root tests, co-integration test and error correction model was adopted to analyze the time series data from 1981 to 2017. The study used trade openness and current account balance to capture globalization while portfolio investment was used to represent foreign direct investment inflows into the country. The findings revealed that FDI has a direct relationship with the Nigerian industrial sector, and globalization exerts a positive impact on industrial sector performance. It was concluded from the study that the development of any nation is tied to the ability of the country to industrialize its manufacturing sector, and industrial performance is seen as a surest way for countries especially developing economies to enhance sustainable growth and development. The study recommended amongst others; the development of the manufacturing, mining and quarrying sub-sectors of the industrial sector, and reduce the over dependence on crude oil revenue which has partly led to the neglect of these sub-sectors; protecting of indigenous infant industries by the government; development of infrastructural facilities to reduce the problems of the industrial sector in Nigeria; promotion of foreign direct investment inflow into the industrial sector of the Nigerian economy; as well as adequate structural and sectoral policies should be developed in order to improve macroeconomic stability, ensure external balance, reduce vulnerability to external shocks and crisis and the reduction in interest rate.

Keywords: Globalization, foreign direct investment, industrial performance, industrialization, openness and trade balance.

1.0 Introduction
The industrial sector in Nigeria could be assumed to have a vast potential for economic development due to the abundant labour force couple with the agrarian nature of the economy. However, the absorptive capacity for labour expected from agriculture and other spillover effects were soon proved mysterious. Sooner than later, the import substitution industrialization and other incentives oriented policies aimed at attracting more foreign investments failed due to weak and infantry manufacturing sector (Akinmulegun & Oluwole, 2014). Scholars argued that globalization offers both opportunities and risks especially for developing nations (Adenikinju, 2006) while region such as Asia got quickly integrated into the global economy with a resultant enhanced economic growth, African region has had another story to tell, which might not be unconnected with the increased in political instability, poverty and endemic corruption plaguing the region (Akinmulegun, 2011).
The increasing interdependence of the global economy manifesting in the inter-transfers and flows of trade, capital and investment between and amongst countries of the world is expected to have a far reaching effects on the economic growth of a participating nation through it multiplier effect on each nations manufacturing sub-sector, however, in the case of Nigeria, the accruing benefits are abysmally far from being achieved. The rate of trade openness and current account balance has not impacted much on industrial sector performance in Nigeria, and foreign capital inflows have not been enough to impact on industrial sector growth in Nigeria as well. It is against this backdrop that this study intends to investigate the nexus of globalization, foreign direct investment and industrial sector performance in Nigeria.

Predicated on the above objective, this research is determined to provide answers to the following research questions; (i) to what extent does trade globalization impact on industrial sector performance in Nigeria. (ii) What is the effect of foreign direct investment on industrial sector performance in Nigeria?

**Literature Review and Theoretical Underpinning**

### 2.1 Concept of globalization

The concept “globalization” has attracted the attention of many scholars from diverse fields and has been explained differently by these scholars. The phenomenon of globalization is a multi-dimensional and multi-faceted process that encompasses political, economic, social and cultural dimensions that have been variously explained in different terms and context (Akinboye, 2008). Although the political, cultural, social and environmental aspects of globalization are no doubt important, the economic aspect is perceived to be the heart of globalization process (Obadan, 2008).

Globalization summarizes a number of interrelated features of the world economy; rapid advances in communication and transportation technology, expanding geographical scope for business activities of private corporation and financial institutions, the integration of market across national border and higher degree of uniformity in policy and institutional environment that set the rules of the game for economic actions and interventions on the part of private agent based in various countries. Globalization according to Islam (2002) is the intensification of cross border trade and increased financial and foreign direct investment (FDI) flows among nations, promoted by rapid advances in trade and liberalization of communication and information technology. Kwanashie (1998) sees globalization as the process of integrating economic decision making all across the world and creating a global market place in which increasingly all nations are forced to participate. Thus, globalization entails a borderless world and ensures increased international trade and capital flows among countries of the world. Globalization is therefore the integration and unification of the world economy and it involves the interdependence of nations around the world through increased border transactions and increased financial flows.

Globalization has over the years been a contentious issue that has been criticized by some and yet widely accepted by many because of its features and consequences which varies from economy to economy arising from frequent changes in its indicators and forces in the economy. The pace of globalization has much influence on industrialization, mostly in developing countries where there is shortage of raw materials and technology in the production of goods and services. The Nigerian industrial sector has experienced the speed of globalization through the attraction of foreign direct investment into the country.

### 2.2 Overview of the Nigerian industrial sector

The industrial sector consists of the secondary sector of the economy and includes sectors which are responsible for the production of goods which are either consumed in the
country or exported to other countries. The industrial sector according to CBN (2007) is divided into three major sub-sectors which include manufacturing, mining and quarrying and petroleum and natural gas sectors. The role of the industrial sector in the growth of developing countries is very significant because sustained economic growth and development of developing countries including Nigeria lies so much on the growth of the industrial sector.

2.3 Foreign Direct Investment (FDI)

Foreign direct investment (FDI) is a direct investment into production or business in a country by a company from another country, either by buying a company in the target country or by expanding operations of an existing business in that country (Danja, 2012). Foreign direct investment has many forms. Broadly, foreign direct investment includes “mergers and acquisitions, building new facilities, reinvesting profits earned from overseas operations and intra-company loans” (Wikipedia, 2014). In a narrow sense, FDI refers just to building new facilities. As part of the national accounts of a country and in regard to the national income equation:

\[ Y = C + I + G + (X - M) \]

The ‘I’ in the equation is investment plus foreign investment. FDI is therefore defined as the net inflows of investment (inflow minus outflow) to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor (World Bank, 2012). FDI is the sum of equity capital, other long-term capital and short time capital as shown in the BOP. FDI usually involves participation in management, joint-venture, transfer of technology and expertise. There are two forms of FDI “inward and outward”, resulting in a net FDI inflow (positive or negative) and “stock of foreign direct investments” which is the cumulative number for a given period. Direct investment excludes investment through purchase of shares (world fact book 2012).

2.4 Theoretical underpinning

This study is rooted in the dependency theory. The dependency theory asserts that underdeveloped and developing countries need to reduce their connectedness with the world so that they can pursue a path more in keeping with their own needs, less dictated by external pressures. The dependency theory portrayed that developing and poor nations are at a disadvantage in their market interaction with wealthy nations. The theory asserts that poor or developing nations provide natural resources, cheap labour, destination for obsolete technology and markets to wealthy nations without which the latter could not have the standard of living they enjoy. Wealthy nations actively perpetuate a state of dependence by various means. This influence may be multifaceted, involving economics, media control, banking and finance, education, politics, culture, sports and all aspects of human resource development. In this theory, it is believed that a high proportion of the developing nations’ economic activities consist of exports and imports from other developing nations – in many cases with only one or few developed nations. By contrast, only a small proportion of the economic activity of the developed nations consists of trade with the developing nations; a developed nations’ trade consists mostly of internal trade and trade with other developed nations. This therefore puts a poor nation in a weak bargaining position in the globalized world as against the developed nations. Furthermore, the dependency theorist argued that there is harmful long-term impact of FDI on economic growth. They argued that FDI may promote growth in the short run but it is usually accompanied by numerous adverse effects on economic growth in the long run most especially in developing countries.

Proponents of the dependency theory therefore proposed or suggest for developing countries to embark in the promotion of their domestic industries by imposing subsidies to protect domestic industries; rather than simply exporting raw materials, they should however
promote manufactured export; adopt import limitations strategies by limiting the importation of luxury goods and manufactured goods that can be produced within the country; prevent foreign investment and enforce nationalization whereby the government takes control of foreign owned companies on behalf of the state, in order to keep profits within the country. In summary, the theory affirms that globalization is beneficial only to developed countries and the developing or poor nations tend to reap the negative effects of globalization.

2.5 Empirical studies

Adejumo, (2013) in the study investigates the relationship between FDI and the value-added to the manufacturing sector in Nigeria. The study employs the autoregressive lag distribution technique to examine the relationship between foreign direct investments and manufacturing value added, it was established that in the long run, FDI have a negative effect on the manufacturing sub-sector in Nigeria. He however, argues that the presence of multinationals in the host economy should be able to influence the private investment on their economy. Besides, these investments should be channeled to other sectors where comparative advantage exists, so as not to erode the capability or the wherewithal of nationals. He concluded that foreign private investment should complement the production efforts of the labour force in the host country, in term of skills, technical know-how and wages.

Alvarez (2003) the study analysis the panel data from more than 7000 firms in the manufacturing industry for the period 1990-1996 in Chile. He observed that MNEs’ affiliates present much higher levels of productivity than do local firms. He further argues that FDI does positively impact on the level of productivity. Nevertheless, the effects seem to be small in magnitude. The small effect of FDI on the manufacturing may be attributed to the low number of foreign firms operating in the industry, suggesting that a bigger number of foreign firms may be necessary to bring about significant impact on local firms. He also emphasizes that most of FDI inflows have been directed to the mining and services industries.

Odey, Effiong and Nwafor (2017) examined savings-investment and economic growth nexus in Nigeria within the period 1970 to 2015, using a battery of contemporary econometric approach involving unit root test, co-integration test and error correction model. It was found from the study that factors such as gross domestic savings, gross fixed capital formation, labour force and savings facility are the main drivers of economic growth in Nigeria. Furthermore, evidence from the investment model shows that real gross domestic product and gross domestic savings are the two drivers of investment in Nigeria. This means that if there is proper capital accumulation in the form of savings, investment would be great and sustainable. The multiplier effect is on the well-being of the people through increased capital and output. The study recommended among others that; the government through the Central Bank of Nigeria (CBN) should ensure the reduction of reserve requirements of commercial banks in order to make available adequate funds in form of loans and advances for investment to boost economic growth. Government should always maintain a good political atmosphere that is devoid of political upheavals because insecurity in the country has contributed immensely to the discouragement of the people from the cultivation of banking habit. More so, foreign direct investment will be discouraged in an environment ravaged with rancor. Banks should be encouraged to establish branches in the rural areas to discourage the rural dwellers from saving in their local saving boxes. This will bridge the gap between savings and investment. The government of Nigeria has a role to play by making policies that would encourage the spread of banks. This would be done by upgrading the standard of the Nigerian banking sector. Labour force has been revealed to be a positive growth stimulant in the study. Thus, government and the private sector should ensure that there is realistic and practical curriculum development in schools that will evolve a more productive labour force. Finally, the Governor of the apex bank
(CBN) and monetary policy committee should liaise with the necessary operators to ensure that there are realistic interest and inflation rates that will stimulate economic activities and bring about the requisite economic growth in Nigeria.

Oscar and Simon (1994) investigate the inflow of FDI into Spanish economy during the period 1964 to 1989 and using autoregressive distributive lag technique, the study established a long-run relationship between FDI and GDP, inflation, trade barriers and capital stock.

In analyzing the macroeconomic impact of FDI on China for 1979-1993, Sun (1996) found that FDI contributed positively to Chinese domestic capital formation, industrial growth, exports and employment creation. With the data limitation faced by the study, he pooled cross-section and time series data at the provincial level and formulated a regression model to test the hypothesis. Sun (1996), applied the Generalized Least Squares (GLS) method and the study establish that FDI had significantly contributed to the economic development of China. The impact of FDI was seen as the main contribution it had to domestic capital formation, promotion of industrial production, exports and the creation of new employment. Sun (1996) further stated that FDI contributed to financial and physical capital development and encourages local investment.

Ekanayake et al. (2003) demonstrate the relationship between output level, inward FDI and export across the developed and developing countries (Brazil, Canada, Chile, Mexico and U.S) from 1960 to 2001 by using the granger causality test. The results of the research are not consistent across these countries. Importantly, a two-way causal relationship between inward FDI and exports is found in the U.S and Canada and the existence of a one-way, moving from inward FDI to export is established in Brazil, Chile and Mexico.

Rasaq, Adijat and Abubakar (2017) examined the impact of FDI on manufacturing sector in Nigeria. The objective of the study reveals that FDI in the Manufacturing sector exacts a positive influence on the manufacturing output and the impact is statistically significant. This result further confirms the effectiveness of economic policy of the federal government of Nigeria through the adoption of liberalized industrial and trade policies. These policies were undertaken with a view to improve efficiency and productivity, as well as to improve the competitiveness of the Nigerian manufacturing industry. The policy implication is that, in order to maintain sustainable economic growth and development, a positive domestic investment is a prerequisite for increasing the flow of foreign investment in the manufacturing sector. Nigeria, while continuing to encourage inward FDI, efforts should be made to channel it into the manufacturing sector so as to accelerate the diversification process. In addition, the implementation of policy of trade liberalization should be reviewed and implemented with caution. The policy that will further make the economy more-import dependent will not augur well for the economy.

Erumebor (2010) examined the impact of globalization on industrial growth in Nigeria using the scope 1986 to 2008. The econometric method of data analysis and estimation adopted was the Ordinary Least Square (OLS) technique. Variables adopted in the study include: industrial output as a dependent variable, trade openness and exchange rate as explanatory variables. The relationship between globalization and Nigerian industrial growth was empirically tested and evidence from the study revealed that globalization has a significant effect on industrial growth in Nigeria. The results showed that the more the Nigerian Economy is open to trade with the outside world, the more the industrial sector suffers. Trade openness showed a negative relationship with industrial sector growth. It was further revealed that exchange rate was positively related to industrial growth in Nigeria. Both variables were shown...
to be statistically significant in explaining the impact of globalization on industrial growth. Owing to these findings, some recommendations were suggested so as to maximize Nigeria’s benefit in the globalization process and reduce the risk and cost of globalization.

Nwafor, Odey and Effiong (2017) investigated the relationship between financial liberalization and domestic savings in Nigeria. In achieving this, contemporary econometric approach involving unit root test, co-integration test and error correction model was adopted to analyze the time series data from 1970 to 2015. The study used interest rate spread and financial liberalization index as measures of financial liberalization. It used credit to the private sector over GDP and the number of bank branches over the population to measure financial deepening and financial inclusion respectively. The findings revealed that per capita income and financial deepening were the two factors that affected domestic savings in Nigeria significantly as against interest rate which was widely viewed as the major factor affecting savings mobilization in Less Developed Countries. The study recommended increase in the existing level of per capita income which could be achieved by upward review of wages and salaries of workers every three years. Monetary authorities should use moral suasion to encourage microfinance banks and commercial banks to establish branches in rural areas to help further reduce the population of unbanked Nigerians and ensure greater financial deepening. Monetary authority should ensure that interest rate is determined by market forces to reflect the true depth of the Nigerian financial system and thereby reduce the interest rate spread. The sustenance of CBN autonomy was equally recommended as a key to ensuring financial system stability.

3.0 Methodology

The exploratory research design is used in this study to econometrically investigate the relationship between globalization, FDI and industrial sector performance in Nigeria. Analytical methods such as the Augmented Dickey Fuller and Philip-Peron tests, co-integration test and Error correction technique were used to establish the relationship between globalization, FDI and industrial sector performance. The model is specified thus:

$$INDO=f (OPEN, TRDB, FDI, INTR)$$

From equation (1), the model is express in an econometric form as:

$$INDO=a_0+a_1 OPEN+a_2 TRDB+a_3 FDI+a_4 INTR+U_t$$

In the log-linear form, we have

$$Log \ INDO=a_0+a_1 Log FDI+a_2 Log TRDB+a_3 Log FI+a_4 INTR+U_t$$

The theoretical expectations reveal that \(a_1, a_2, a_3\) and \(a_4>0\).

Where: \(INDO\) = industrial performance which is measured by the ratio of industrial output/GDP, \(OPEN\) = openness which is measured as import plus export/GDP, total trade balance, \(FDI\) = foreign direct investment and \(INTR\) = prime lending interest rate. \(U_t\) is the stochastic error term whereas \(a_1-a_4\) is the coefficients of the explanatory variables that were estimated.
Presentation and analysis of results

4.1 Descriptive statistics

Table 1: Descriptive analysis

<table>
<thead>
<tr>
<th></th>
<th>INDO</th>
<th>OPEN</th>
<th>TRDB</th>
<th>FDI</th>
<th>INTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>43.31009</td>
<td>1995736.</td>
<td>2961.383</td>
<td>3183630.</td>
<td>17.46907</td>
</tr>
<tr>
<td>Median</td>
<td>31.91154</td>
<td>150.4037</td>
<td>50.43040</td>
<td>1944820.</td>
<td>16.89298</td>
</tr>
<tr>
<td>Maximum</td>
<td>204.0592</td>
<td>20617194</td>
<td>19041.17</td>
<td>8841113.</td>
<td>29.80000</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.092356</td>
<td>5.326507</td>
<td>9.909705</td>
<td>189164.8</td>
<td>7.75000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>51.32161</td>
<td>4696054.</td>
<td>5153.404</td>
<td>2733019.</td>
<td>4.713981</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.557239</td>
<td>2.693811</td>
<td>1.751412</td>
<td>0.581818</td>
<td>0.298386</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>5.23226</td>
<td>9.699894</td>
<td>4.891887</td>
<td>2.032195</td>
<td>3.632237</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>22.02445</td>
<td>110.8726</td>
<td>23.77351</td>
<td>3.436044</td>
<td>1.133791</td>
</tr>
<tr>
<td>Probability</td>
<td>0.000016</td>
<td>0.000000</td>
<td>0.000007</td>
<td>0.179421</td>
<td>0.567284</td>
</tr>
<tr>
<td>Sum</td>
<td>1559.163</td>
<td>71846502</td>
<td>106609.8</td>
<td>1.15E+08</td>
<td>628.8866</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>92186.78</td>
<td>7.72E+14</td>
<td>9.30E+08</td>
<td>2.61E+14</td>
<td>777.7565</td>
</tr>
<tr>
<td>Observations</td>
<td>36</td>
<td>36</td>
<td>36</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, 2018

As depicted in table 1, the mean values of industrial performance and the independent variables were N 43.31099 billion, 1995736 billion, 2961.383 billion 3183630 billion and 17.46 percent, respectively during the evaluation period. The median values of the variables were N31.91154 billion, 150.4037 billion, 50.43040 billion, N1944820 billion and 16.89 percent for all the variables respectively.

Analysis of skewness of the distributions for the variables showed that the distributions for industrial performance, openness, total trade balance, foreign direct investment and prime lending interest rate were positively skewed. In the same way, the analysis of kurtosis showed that the distributions for industrial performance, openness, total trade balance, and prime lending interest rate were leptokurtic, whereas the distribution for foreign direct investment was platykurtic.

4.2 Correlation analysis

The correlation matrix as presented in table 2 reveals the correlation among the variables captured in this study.

Table 2: correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>INDO</th>
<th>OPEN</th>
<th>TRDB</th>
<th>FDI</th>
<th>INTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDO</td>
<td>1</td>
<td>-0.367623</td>
<td>-0.492003</td>
<td>0.108368</td>
<td>-0.196141</td>
</tr>
<tr>
<td>OPEN</td>
<td>-0.367623</td>
<td>1</td>
<td>0.949365</td>
<td>0.502657</td>
<td>-0.012731</td>
</tr>
<tr>
<td>TRDB</td>
<td>-0.492003</td>
<td>0.949365</td>
<td>1</td>
<td>0.471872</td>
<td>0.063910</td>
</tr>
<tr>
<td>FDI</td>
<td>0.108368</td>
<td>0.502657</td>
<td>0.471872</td>
<td>1</td>
<td>0.021818</td>
</tr>
<tr>
<td>INTR</td>
<td>-0.196141</td>
<td>-0.012731</td>
<td>0.063910</td>
<td>0.021818</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, 2018

The outcomes of the correlation analysis as depicted in table 2 showed that interest rate has a negative and weak relationship (r = -0.196) with industrial performance. Similarly, the correlation analysis showed that there was a negative and weak correlation (r = -0.367) between openness and industrial performance in Nigeria. There is also a negative and weak relationship (-0.49) between trade balance and industrial performance in Nigeria.
On the other hand, the result of the correlation analysis as reported in table 2 above revealed that foreign direct investment has positive and weak degree of relationship ($r = 0.10$) with industrial performance in Nigeria. This means foreign direct investment has positive relationship with industrial performance in Nigeria, while openness, trade balance and interest rate have negative relationship with industrial performance in Nigeria.

**Fig. 1: Trend of Industrial Performance in Nigeria**

![Trend of Industrial Performance in Nigeria](image)

*Source: CBN, 2017.*

From figure 1 above, industrial performance witnesses a slight increase in the period 1984. However, it plummed between 1984 and 1986, but later picked up at the later part of the years especially in the late 1990s. It increased further between 2001 and 2004 due to industrial policies adopted during the period. The industrial output/GDP ratio was not stable from 2005 till date. This is as a result of the under development of the real sector of the economy because much attention has been given to oil at the expense of agriculture and manufacturing. Another challenge has been the high rate of interest for borrowers and entrepreneurs.
As indicated in figure 2 above, FDI witnessed a phenomenal increase in the period 1989 after the implementation of the structural reforms in the country. It exhibited an upward trend from 1991 through 2004 with large increase in 2005 with the recapitalization of banks, which promote public confidence in the banking system. FDI dropped in 2010 but later picked up at the later part of 2011. It further decreased in 2015 at the emergence the present administration. This is as a result of weak policies of the government in riving investment into the economy. The economic recession experienced between 2015 and 2016 act as a drain in foreign capital inflows in the country, because there was a loss of confidence on the economy by foreign investors.

4.3 Unit Root Results

Table 3: Augmented Dickey Fuller Unit Root Result

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>First Diff.</td>
</tr>
<tr>
<td>INDO</td>
<td>-1.567298</td>
<td>-5.008672</td>
</tr>
<tr>
<td>OPEN</td>
<td>-2.975563</td>
<td>-9.526749</td>
</tr>
<tr>
<td>TRDB</td>
<td>-2.087599</td>
<td>-7.274580</td>
</tr>
<tr>
<td>FDI</td>
<td>1.552679</td>
<td>-6.649610</td>
</tr>
<tr>
<td>INTR</td>
<td>-2.430137</td>
<td>-5.439928</td>
</tr>
</tbody>
</table>

Source: Authors Computation, 2018.

From the Augmented Dickey Fuller unit root result in table 3, all the variables used in the study were not stationary at level - I(0); however, they were all stationary at first
differencing - I(1) both the ADF and PP tests. This is because their calculated values at first differencing are greater than their critical value at 1 per cent, 5 per cent and 10 per cent levels. Therefore, the variables are integrated of order I (1).

4.4 Co-integration Estimates
Series: INDO OPEN TRDB FDI INTR
Lags interval (in first differences): 1 to 1

Table 4: Unrestricted Co-integration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.750666</td>
<td>92.48325</td>
<td>69.81889</td>
<td>0.0003</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.522467</td>
<td>45.25861</td>
<td>47.85613</td>
<td>0.0860</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.250043</td>
<td>20.12849</td>
<td>29.79707</td>
<td>0.4142</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.171632</td>
<td>10.34536</td>
<td>15.49471</td>
<td>0.2551</td>
</tr>
<tr>
<td>At most 4 *</td>
<td>0.109505</td>
<td>3.943230</td>
<td>3.841466</td>
<td>0.0471</td>
</tr>
</tbody>
</table>

Trace test indicates 2 co-integrating equations at the 0.05 level

Table 5: Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.750666</td>
<td>47.22464</td>
<td>33.87687</td>
<td>0.0008</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.522467</td>
<td>25.13012</td>
<td>27.58434</td>
<td>0.0998</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.250043</td>
<td>9.783132</td>
<td>21.13162</td>
<td>0.7647</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.171632</td>
<td>6.402128</td>
<td>14.26460</td>
<td>0.5622</td>
</tr>
<tr>
<td>At most 4 *</td>
<td>0.109505</td>
<td>3.943230</td>
<td>3.841466</td>
<td>0.0471</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates 2 co-integrating equations at the 0.05 level

Source: Authors’ Computation, 2018.

According to the result, long-run equilibrium relationship exists amongst the variables used in the model. This is due to the fact that, the co-integration result reveals that there exist two co-integrating equations from our Johansen results estimated. According to the results, the Trace and Maximum Eigenvalue shows that 92.4832, 3.943230, 47.22464 and 3.943230 at 5 per cent level is greater than their critical values. It means that our variables co-integrated in the long-run.
4.5 Error Correction Estimates

Table 6: Error correction results
Dependent variable = INDO

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDO(-1)</td>
<td>0.551827</td>
<td>0.188929</td>
<td>2.920809</td>
<td>0.0071</td>
</tr>
<tr>
<td>OPEN</td>
<td>5.26E-06</td>
<td>4.76E-06</td>
<td>1.103193</td>
<td>0.2801</td>
</tr>
<tr>
<td>TRDB</td>
<td>0.007909</td>
<td>0.004650</td>
<td>1.700779</td>
<td>0.1009</td>
</tr>
<tr>
<td>FDI</td>
<td>2.86E-06</td>
<td>3.12E-06</td>
<td>0.915974</td>
<td>0.3681</td>
</tr>
<tr>
<td>INTR</td>
<td>0.781900</td>
<td>1.658395</td>
<td>0.471480</td>
<td>0.6412</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-21.70699</td>
<td>6.857915</td>
<td>-3.165242</td>
<td>0.0033</td>
</tr>
<tr>
<td>C</td>
<td>39.51916</td>
<td>35.17224</td>
<td>1.123589</td>
<td>0.2715</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation using Eviews 8.

R-Squared = 0.605966
Adjusted R-squared = 0.515035
F-statistic = 6.664015
Durbin-Watson statistic = 1.938236

Table 6 above indicates the results of the error correction estimates for industrial performance in Nigeria with the coefficient of multiple determinations put at 0.515035, showing that about 52 percent of industrial performance in the country is accounted for by the various variables captured in the model, leaving 48 percent for the unexplained variation. Hence, judging from the R-Squared and Adjusted R-Squared values, the estimated model has good explanatory power and appreciable goodness of fit. According to the results, industrial output one-year lag and openness are rightly signed indicating positive relationship with industrial performance. Furthermore, trade balance, foreign direct investment and interest rate relate positively with the dependent variable and hence do not violate the a priori expectations. The F-statistics shows that our model has a good fit and could be relied upon in forecasting the dynamics of industrial performance in Nigeria. Our Durbin-Watson statistics estimated value of 1.938236 falls on the no autocorrelation region; hence there is no autocorrelation in our estimated results. The error correction estimate shows that only 21.71 per cent of the deviations in the short-run could be corrected in the long-run. This means that our model has a slow speed of adjustment.

Policy Implications, Conclusion and Recommendations

5.1 Policy Implications

Trade openness and current account balance were used to capture globalization while portfolio investment represents foreign direct investment inflows into the country. From the findings, it is observed that FDI has a direct relationship with the Nigerian industrial sector, and globalization exert a positive impact on industrial sector performance.

The industrial sector plays an important role in the economic development of any nation, both developed and less developed. Foreign direct investment and expansion of trade are drivers of industrial growth in Nigeria. More so, empirical result reveals that foreign direct investment and trade openness stimulate industrial performance in Nigeria over the period. The implication of this is that any policy that focuses on trade liberalization and foreign capital inflows in Nigeria has significant impact on industrial performance. Furthermore, positive
external balance and interest rate liberalization have been identified as some of the critical factors in stimulating domestic industrial sector. This means that there is need for policies aimed at deepening the financial sector of Nigeria so as to enhance savings mobilization for stimulation of industrial performance. Therefore, there is need for government to liberalize trade, attract foreign capital inflows, maintain positive external balance and reduce interest rate so as to sustain their positive impact on industrial performance in Nigeria.

5.2 Conclusion and Recommendations

The development of any nation is tied to the ability of the country to industrialize its manufacturing sector. More so, industrial performance was identified as a surest way for countries especially developing economies to enhance sustainable growth and development. This is because proponents of import-substitution industrialization policy believed that market-determined interest rate, expansion of foreign trade as well as the restructuring of the banking sector will assist in stimulating industrial growth. By and large, the finding revealed that trade openness; trade balance, foreign direct investment and lending rate are relevant in stimulating industrial performance in Nigeria. Therefore, these variables should be held in high esteem in the real sector of the Nigerian economy as far as industrial sector is concerned. On the basis of our findings and the conclusion thereof; the following recommendations are sacrosanct.

The government should develop the manufacturing, mining and quarrying sub-sectors of the industrial sector. The over dependence on crude oil revenue has partly led to the neglect of other sectors like the manufacturing and mining and quarrying sector. The enactment of business friendly policies and programmes as well as granting incentives like tax holidays to producers and firms in these sectors so as stimulate production should be done by the Nigerian government.

Protecting of indigenous infant industries should be done by the government. The adoption of protective policies and strategies such as restricting the participation of foreign firms in certain sectors, avoiding multiple taxes on infant and local firms by the federal, state and local governments, will help to reduce unfavorable competition between them and other large Multinational firms operating in the country.

Development of infrastructure: The development of infrastructural facilities would however reduce the problems of the industrial sector in Nigeria. A notable reason for this is high cost of production occasioned by infrastructural failures such as epileptic, poor road networks and weak institutional framework minimizes Nigeria’s benefits in the globalization process.

Promotion of foreign direct investment in the industrial sector of the Nigerian economy – due to the benefits of FDI in the country, there is therefore the need for the government to enact and develop policies that would encourage and attract long-term capital inflows particularly FDI into selected sectors of the economy.

Formulation and implementation of efficient monetary policies should also be considered by the Nigerian government. Adequate structural and sectoral policies in order to improve macroeconomic stability, ensure external balance, reduce vulnerability to external shocks and crisis as well as the reduction in interest rate should be carried out.

The government should promote external trade so as to reap the benefits of globalization and equally attract foreign direct investment into the economy.

References


World Bank (2012). World development indicators, the World Bank, Washington D.C