



## **EXTERNAL FINANCING AND INDUSTRIALIZATION IN NIGERIA (1985 - 2016)**

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### **ABSTRACT**

*Prior to the adoption of Structural Adjustment Programme in 1986, the major reason given for non-participation of foreign investors in industrialization was weak institutions in the economy. Years after, Nigeria is still saddled with low level of industrial sector performance especially given low capacity utilization and declining industrial output. This study investigates the effect of external financing on industrialization in Nigeria covering the period of 1985-2016. The study is hinged on the Dual Gap Model (1966) and adopted the Johansen Co-integration test, Error Correction Model under the VAR framework for data analysis. Data was obtained from Central Bank of Nigeria Statistical Bulletin and World Development Indicators on External Loans, Foreign Direct Investment, Foreign Portfolio Investment, Remittance, Official Development Assistance and Exchange Rate. Findings reveal a negative relationship between external financing and industrialization in Nigeria given that external loans, foreign portfolio investment, remittance, official development assistance are negative while foreign direct investment exerts a positive impact on industrial output. The study therefore recommends that Nigeria government should properly align foreign funds inflows to suit the industrial sector, as the current external financing has not recorded significant gains. In addition, the government should also advocate for more of the official development assistance to industrial sector given the small proportion allocated to the sector within the study period.*

**Key words:** *External Financing; Industrialization; Foreign Direct Investment; Foreign Portfolio Investment; External Loans; Remittances*

### **Introduction**

The importance of external finance in driving economic growth has been acknowledged in economic literature by different economists. This is evident in growth models (Turnovsky, 2000) and (Chenery & Stout, 1966). Therefore, in economies where domestic finance is inadequate, tendency exist for low level of investment in industrial sector subsequently economic growth is most likely to be affected. In situations where it is not possible to raise investment levels due to deficient savings, foreign inflow is a valid alternative according to Baye & Jansen (2006). In corroboration to the above, Fosu and Magnus (2006) posit that foreign capital inflow is an important vehicle for augmenting the supply of funds for domestic investment.

The flow of Foreign Direct Investment (FDI), portfolio investment and other Official Development Assistance (ODA), in the form of grants and loans at concessional financial terms, to developing countries, have quadrupled in Africa since 2001 (African Development Bank (AfDB), 2013). According to UNCTAD World Investment Report (2016), Nigeria's FDI inflow accounts for 6% of FDI inflow to Africa and received approximately 31% of the sub-regional total. Over the years, external financing specifically foreign direct investment has become the largest source of foreign funds flowing to developing countries, of which Nigeria is one of the highest recipients in sub-Saharan Africa countries (UNCTAD Investment Report, 2015). Nigeria receives the highest amount of remittance in Africa accounting to 65% of officially recorded remittance flow to the region (Orozco, 2003, World Bank 2004). Also, CBN (2007) report remittances inflows into the country has outpaced FDI, ODA and other flows into the country and rank second to oil receipts as a foreign exchange earners. Total remittance in 2011 was \$10.681 billion compared to \$1,392 billion in 2001 representing 5 percent of Nigeria's GDP in the same year. In addition, according to report of Network of Research on Africa (NORMA) (2017) remittance inflow in 2015 alone amount to N7.519 trillion (\$20.8 billion) from official channels adding that figure could be double as there are other indirect ways. Tendency exists that this inflow finds its way into other sectors of the economy.

Empirical evidence from developed, newly industrializing and emerging economies has shown that sustainable development cannot be achieved on a weak industrial base (Lall, 1999 cited in ECA, 2013, pg. 2). Alfaro, (2003); Barrios, Gorg & Strobl (2004), further asserted that there is a strong link between the level of industrialization, economic growth and development.

Industrialization helps countries to achieve increase in investment, diversify their economies and achieve a high growth rate, and reduce the risk from external shocks. Unfortunately, based on the growth outlook in Africa, coupled with weak financial institutions, several developing economies Nigeria inclusive are still operating unsustainable industrial growth even with several policies initiated aimed at attracting foreign capital to boost the productive sectors. For instance, Global Opportunity Index, Report (2015) aimed at providing a baseline assessment for countries seeking to improve their business environments and attract foreign investors, Nigeria ranked 116 out of 136 countries on the six continents.

The tremendous progress recorded in the attraction of foreign capital flows to Nigeria (AfDB, 2013) has not translated through various channels the expected vibrant industrial sector which ought to be. In recent time, Nigeria has established trade zones across the country however, foreign presence and their impact on industrialization is yet to be felt even with concessions, waivers, tax holidays and having amongst other consideration granted foreign investors subsequently some extraction of similar policies and programmes from import-substitution strategy in 1960s till the period of SAP and export-substitution strategy. For instance, the Nigeria's industrial sector accounts for 6 per cent of economic activity while the manufacturing sector contributed only 4 per cent to GDP in 2011 (Chete, Adeoti, Adeyinka, & Ogundele, 2013). Similarly, Nigeria's industrial value added (% GDP) between 1981 to 2015 on average is 37% which is still very low compare to Indonesia at 49% and Malaysia 42% (Akpan & Eweke, 2017).

It is in this light that this study seek to achieve the following specific objectives; (i) examine the structure and flow of external financing in Nigeria; (ii) investigate the effect of external financing on industrialization in Nigeria.

## **Conceptual Clarification – External Financing and Industrialization**

### **External Financing**

Finance involves the transfer of funds in exchange for goods, services, or promises of future return (Olayiwola, Okodua and Osabuohien, 2014). They further asserted that there are two options to guarantee and achieve finance for growth. These are options of domestic resource mobilization and foreign capital inflow. Domestic resource mobilization entails the generation of savings from domestic sources and their allocation to productive investment involving public and private sectors (Quartey, 2005; Culpeper, 2008;

Aryeetey, 2009). Foreign capital inflow could be in form of capital good, loans, Official Development Assistance which sometimes is on a concessionary terms.

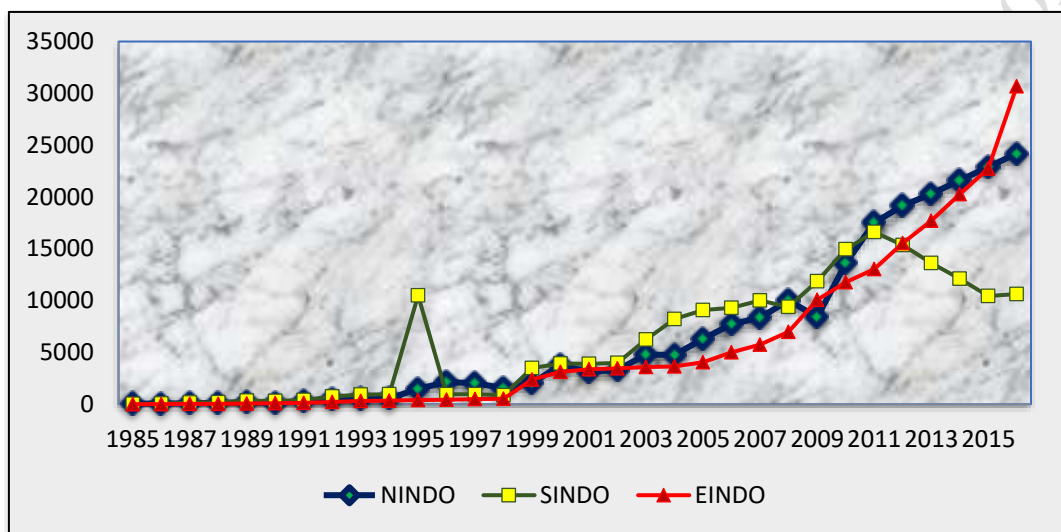
United Nations and its sub-bodies has continued to emphasize on the need for high and stable capital flows from developed to developing countries, with a recent shift from multilateral and bilateral official flows to private flows. Capital flows can be in the flow of funds, capital goods and other technical expertise into developing economies from foreign counterparts to finance developmental projects for the overall growth of the economy. This includes foreign direct investment, portfolio finance, import trading, special aid & loan assistance, official development assistance, export trading financing, trade credit etc. The above working definition of this study took cue from Olayiwola et al (2014) and Kregel (2004). As such, the main sources of foreign/external finance inflow in Nigeria are foreign direct investment, foreign portfolio investment, external loans, official development assistance and remittances.

### **Industrialization**

Industrialization is a term that is mostly associated with the development experience of countries in Western Europe and North America during the 19th and early 20th centuries (Nzau, 2010). According to Durano (2015), who asserted that the words “industrial” or “industrialization” are not found in any of the outcome documents from Monterrey, Doha, or the New York crisis conference, the policies needed to deliver sustained growth and produce structural transformation are necessarily industrial policies. To Todaro and Smith (2011), structural transformation is the process of transforming an economy in such a way that the contribution to national income by the manufacturing sector eventually surpasses the contribution by the agricultural sector. (Ariyo 2014) views structural transformation as change in the dominance of the traditional sector to a more active role for the modern sectors in the productive activities of the economy. Adejugbe (2004) defines industrialization as the process of harnessing human and material resources, with increasing application of science and technology to the production of goods and services. Industrialization involves the use of human and material resources to impact on the society through production of goods and services, (David, 2005). There are four main types of industry: processing, manufacturing, craft and mining. However, in Nigeria,

manufacturing subsector has remained the dominant one. The extent of industrialization of a country can be assessed by the manufacturing sector capacity utilization, percentage share of the manufacturing sector to the country's gross domestic product, percentage of labour force employed and as well as the output of finished goods from manufacturing sector.

### **Industrial Output among the three Regional Power of Africa: Nigeria, Egypt & South Africa**



**Figure 1:** Trend of Industrial Output in Nigeria, Egypt & South Africa

**Source:** Data from World Development Indicators & Computation by Author using Excel

In Nigeria, Figure 1 shows a sustained linear trend in the industrial output between 1985 and 1998 all during the era of military regime, a period after which industrial sector witness a rise in industrial output. This could be the result of change in leadership after Gen. Abacha death to Gen. Abdulsalami, which witness slight stability and the expectation in conducting general election in 1999. Ever since then, it has continued to maintain a steady trajectory even though bulk of the industrial output comes from oil and gas subsector. The study further observed that, Nigeria with the population of 186.0 million in 2016 and a value of gross domestic product of \$492.986 billion (nominal) due to the contraction by 1.5 percent from the \$568.50 billion in 2014 is on the same trajectory on industrial output with Egypt and South Africa who are regional power. In fact from 1999 up till 2011, South Africa industrial output outweigh that of Nigeria and even between 2003 and

2008, Egypt industrial output supersede that of Nigeria. Statistics further shows that Egypt has population of 93,383,574 million in 2016 and GDP of \$332.35 billion in 2016 against the \$305.57 billion in 2014, which means it appreciated by 0.08 percent. South Africa with a population of 55,408,513 million in 2016 and GDP of \$294.13 billion in 2016 owing to the economic down turn leading to -6.55 percent contractions against the \$351.57 billion in 2014. The point here is, by all standards Nigeria industrial sector ought to be larger than these two regional powers instead of being on the same threshold. This is due to decay infrastructure, low level of investment and commitment of our leaders to channel resources to productive projects. This is a revelation to the stakeholders and urgent call to commit more of the external finance to industrial sector for high industrial output. Although, Nigeria government should come up with framework so that larger proportion of foreign aids, loans, foreign private investment be allocated to ailing industries like Delta Steel Company, Katsina Rolling Milling, Textile Industry in Kaduna, Ajaokuta Steel Company amongst other. If this is achieve, businesses will strive and eventually every socio-economic issue will take care of itself. It is high time, we stop committing our resources to current consumption at the detriment of long-term projects, which ordinarily has the capacity to take us out of the current economic doldrums.

### **Theoretical/Empirical Literature**

The main theoretical foundation applied in this study to analyze the effect of external financing on industrialization in Nigeria is hinged on the Dual Gap Theory by Chenery & Strout (1966) used in the work of Hassaan, Sule & Abu (2015) and Kolawole (2013) . The basic tenet of the two-gap model is that most developing countries face either a shortage of domestic savings to match investment opportunities or a shortage of foreign exchange to finance needed imports of capital and intermediate goods. The ‘two gap model’ supports the hypothesis of investment-limited growth based on the Harrod-Domar model, which assumes a specific amount of investment to increase growth (Conchesta, 2008). No country will industrialize without mentioning external finance to augment domestic capital. Although, according to Fazzari, Hubbard and Petersen (1988), internal and external finance are not perfect substitutes in practice. It is believe that internal finance may be less costly than external finance in terms of transactions, risk, agency problems, cost of financial distress, interest rate charge, exchange rate fluctuations. The

debate for external finance from foreign source is usually founded on the need to drive economic activities.

The focus of this paper is to examine the sources of external finance for industrialization in Nigeria as the need for adequate finance has grown because industrialization remains a key solution to our overdependence on imported goods. The usefulness of this theory in this study stems from the fact that, when country like Nigeria is integrated with international market and financial institution, it eases capital flow. Most international investors are eager to allocate their risk efficiently with the aimed of high returns especially within the emerging market economies with liberalize and regulated financial market consequently facilitate foreign direct investment, portfolio investment and external loans. The use of this theory is timely giving various reforms embarked upon to attract foreign investors with capacity and managerial ability.

Houssein & Hichem (2011) examined foreign direct investment and portfolio investment on economic growth in developing and developed economies. Their empirical study is based on a sample of 100 developing and developed countries over the period 1990-2009 reports the followings results: the estimation results seem to suggest a statistically significant and positive relationship between FDI and output growth when using GMM, WG and GLS estimators related to pooled, developed and developing countries. Also, the coefficient of PI is negative and not statistically significant in developing economies. However, this coefficient is positive and significant in developed countries when GMM estimator is used. In the same countries, when random effect is included in the specification, the coefficient is still positive but not statistically significant. In all countries, the coefficient of PI is negative and significant.

Bashir (2013) examined the impact exacted by foreign assistance in the form of official development assistance (ODA) and foreign direct investment (FDI) on real growth in Nigeria over the period 1980 to 2011. The study used the Two-Gap model, Granger causality test, Johansen co-integration test and Error Correction Method (ECM) to analyse the data. Findings of the study show a negative relationship between FDI and real growth and as well, ODA exacts no impact on real growth in the country. Finally, the causality test results reveal that there is no-causality between any pair of the variables. Akinpelu, Ogunbi, Bada, & Omojola, (2013) investigate the effects of remittance inflows on economic growth of Nigeria. The authors employed

cointegration and causality tests to analysis the data collected. The result of the study revealed that there are long run equilibrium relationship among the variables (gross capital formation, foreign direct investment, openness and foreign exchange rate) that were employed. Furthermore, the causality test shows a uni-direction causality from gross domestic product to remittance inflows gross, capital formation to remittances, and remittance inflows to openness.

Ferdaous & Acma (2014) Impact of International Trade, Remittances and Industrialization on the Economic Growth of Bangladesh using annual data from the period of 1976 to 2010. This study uses stationary test, cointegration and Granger causality test. The result shows that the variables are cointegrated, implying a long-run causal relationship among export, import, remittances, and industrialization on the economic growth of Bangladesh.

Orji, Akachukwu & Ilori (2014) examined foreign capital inflows and growth: an empirical analysis of WAMZ experience over the period 1981-2010 using the Seemingly Unrelated Regression Estimation (SURE) technique. Findings show that there are differences in the growth impact of the various forms of foreign capital inflows in the WAMZ countries. The result also shows that more than one form of capital inflow contributed positively to output growth in Nigeria. Again, they found that ODA positively contributes more to output growth in Sierra Leone and Ghana, whereas, FDI fosters more output growth in Nigeria and Gambia. Remittances have the highest contribution in Liberia and finally none of the inflows have positively impacted on Guinea's economic growth. Similarly, Ekpo & Afangideh (2012), examined official development assistance and economic performance in Nigeria covering the period of 1970-2010. It develops a small macro-econometric model to determine the impact of aid flows to key sectors like agriculture and manufacturing and their transmission effect(s) on the economy using descriptive and three stage least squares (3SLS) estimation technique in a simultaneous equation model to analyse the results. The result of the growth equation shows a positive but insignificant relationship between ODA and economic development in Nigeria. This implies that the manufacturing sub-sector equation on its part shows a negative and insignificant relationship with ODA, implying that ODA has no impact on the subsector in Nigeria.



Hassan, Sule & Abu (2015) examined the implications of External Debt on the Nigerian Economy via the dual gap theory. The regression result reveals that the coefficients of ID, INF, and EXR are positive and statistically significant while the coefficients of ED and CPI are not statistically significant. In addition the contributions of ID and ED are minimal and almost insignificant. ID contributes positively to economic growth while ED contributes negatively to economic growth.

Odionye & Emerole (2015) the study investigate the impact of international remittances on the Nigerian Economy. The study adopted Autoregressive Distributed Lagged model (ARDL). The result of the Auto Regressive Distributed Lagged (ARDL) model showed that international remittance inflow has positive and significant impact on the Nigerian economy. It further showed that there is a long run relationship between international remittances and the Nigerian economy.

Okonkwo (2016) foreign portfolio investment and industrial growth in Nigeria (1986 - 2013) using ordinary least square (OLS) estimation technique in analysis the secondary data in this study. The findings of the study revealed that there is statistically significant positive relationship existing among foreign portfolio investment, gross fixed capital formation, market capitalization and industrial growth proxied by industrial production index (IPI) in Nigeria.

Ugochukwu, Okafor & Azino (2016) Effect of External Borrowing and Foreign Aid on Economic Growth in Nigeria over a period of 34 years from 1980 to 2013 using Ordinary Least Square technique (OLS) multiple regression model in addition to the Johansen Co-integration test to determine the long-run relationship between the variables and Error Correction Method (ECM). The results show that while external debt has a positive and significant effect on economic growth, foreign aid is positively related to GDP but statistically insignificant. This implies that foreign aid is beneficial to Nigeria but has not been much felt. Hence bulk of such funds (foreign aid) are been channelled to meeting recurrent or consumption expenditure needs of the country at the expense of productive investments.

The research on external financing on industrialization in Nigeria is with the sole aim of outline how scholars have contributed to this important research agenda. Although there are existing research work on the above subject matter, however, there seems to be need to review the effect of external loans, foreign direct investment, foreign portfolio investment, remittance,

official development assistant and their combination in the analysis and methodology within the period. It is important we revisit this topic in terms of variables captured.

Based on these, it is expedient to examine the various sources of external financing in Nigeria's drive for industrialization.

## **Research Methodology**

### **Study Design**

The framework of this research article is purely on a quantitative analytical plot. However, descriptive tool were explored at necessary points for emphasis and explanation of issues. The central focus of this analysis in this work were hinged on secondary data collected from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), World Bank Development Indicators, Journals and CIA Fact Book estimates to investigate the effect of external financing on industrialization in Nigeria (1985 – 2016).

The kinds of data required in achieving these objectives are as follows: Industrial Output used as proxy for Industrialization as the dependent variable while the explanatory variables are External Loan (EXL), Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Remittance (RIMT), Official Development Assistance (ODA) and Exchange Rate (EXR).

### **Method of Data Analysis**

The data for this study were analyzed using both descriptive and analytical technique includes the use of table, graphs while the analytical technique of Johansen Cointegration Test and Error Correction Model (ECM) under the Vector Autoregressive (VAR) framework have been employed to investigate the linkages between the variables. The data were tested for stationarity and estimates obtained gave rise to the application of VAR methodology. The use of VAR in this study in achieving the main objective lies in the predictive and forecasting power especially that it is one of the most flexible methods of analysis because it has more efficient coefficient estimates and tool for authenticating results (Gujarati & Porter, 2009).

### **Model Specification**

This study hinges on the theoretical underpinning of the Dual Gap Model which postulates that there is shortage domestic savings to match investment hence this gave rise for external sources of financing. To investigate the

effect of this external financing, industrial output (INDO) is used as proxy for industrialization and serves as dependent variable.

The Linear relationship of this model is stated below;

*INDO*

$$= f(EXL, FDI, FPI, RIMT, ODA \text{ and } EXR)$$

— — — Eqn. 1

The stochastic form of the model is given below:

$$INDO = \beta_0 + \beta_1 EXL + \beta_2 FDI + \beta_3 FPI + \beta_4 RIMT + \beta_5 ODA + \beta_6 EXR + \varepsilon_t \text{ — — — Eqn. 2}$$

Where:

INDO = Industrial Output proxied for industrialization (N' billion)

EXL = External Loan (N' billion)

FDI = Foreign Direct Investment (N' billion)

FPI = Foreign Portfolio Investment (N' billion)

RIMT = Remittance (N' billion)

ODA = Official Development Assistance (N' billion)

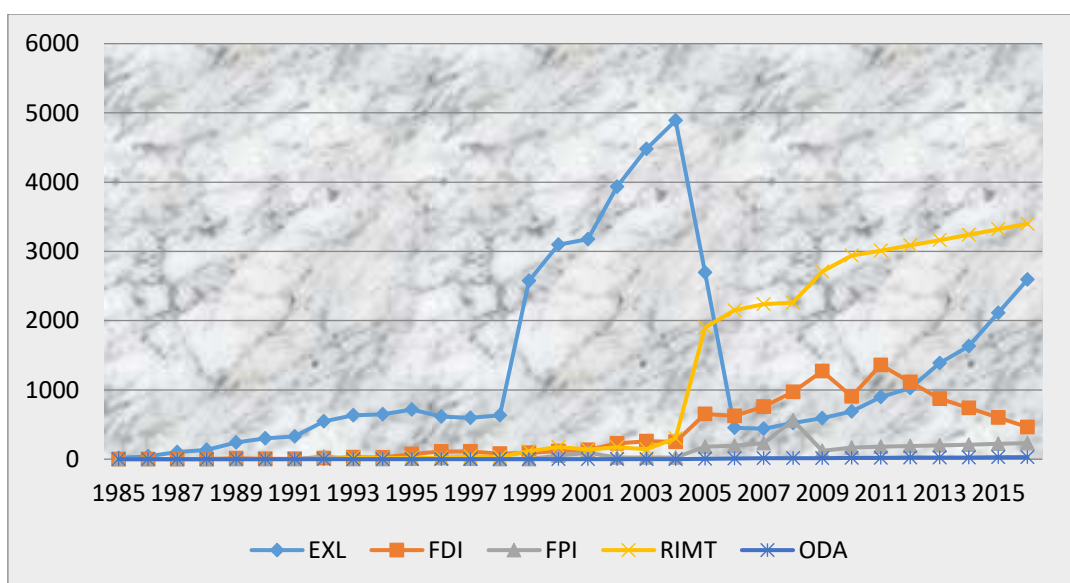
EXR = Exchange Rate (%).

### **Apriori Expectation**

Based on the few existing empirical analysis and theoretical stipulations we expect that EXL, FDI, FPI, RIMT and ODA to have positive relationships with industrial output in Nigeria while exchange rate expected to have negative relationship with industrial output. This is because, theoretically, an increase/decrease in either will cause industrial output also to increase/decrease and vice versa. Symbolically;  $b_1, b_2, b_3, b_4, b_5 > 0$  and  $b_6 < 0$

### **Data Analysis**

#### **Trends in the Flows of External Financing in Nigeria**



**Figure 1:** Trends of the Flows of EXL, FDI, FPI, RIMT & ODA in Nigeria

**Source:** Data from World Bank Development Indicators, Central Bank of Nigeria Bulletin, Ekpo & Afangideh (2012) and Computation by Author using Excel

The trends of external financing comprising of external loans (EXL), foreign direction investment (FDI), foreign portfolio investment (FPI), remittance (RIMT) and official development assistant (ODA) into Nigeria has been fluctuating between the period of the study, although there exists a significant discrepancy in the flows. EXL component witness significant rise from 1999 to 2005 after which it decline in 2006, which is attributed to the 2005 Paris Club debt cancellation. Ever since then, it has maintained an upward movement. However, FDI flow drop in 2010, further rise in 2011 and ever since then, it has being on a downward trend. FPI and ODA trends seems to be the least foreign capital inflows into industrial sector hence there is need for more reforms in that direction. Remittance by the Diaspora to developing countries witness significant inflows especially from 2004 to date. This is a good indicator that needs to be explored. In all, components of external financing has been on the upward trajectory especially from 2005 to date arising from the positive outcome of the banking sector consolidation, economic reforms, moderate stability in the third democratic dispensation and the smooth relationship with western community.

## To Investigate the Effect of External Financing on Industrialization in Nigeria

### Result of the Unit Root

In order to avoid spurious results, the data is subjected to stationarity test using Augmented Dickey-Fuller (ADF) test and is presented below:

Variables	ADF Test Statistic	Critical values			Prob.	Order of Integration
		1%	5%	10%		
INDO	-5.92	-3.68	-2.96	-2.62	0.0000	I(1)
EXL	-3.88	-3.67	-2.96	-2.62	0.0060	I(1)
FDI	-7.77	-3.67	-2.96	-2.62	0.0000	I(1)
FPI	-6.59	-3.68	-2.96	-2.62	0.0000	I(1)
RIMT	-5.27	-3.67	-2.96	-2.62	0.0002	I(1)
ODA	-4.83	-3.68	-2.96	-2.62	0.0006	I(1)
EXR	-4.98	-3.68	-2.96	-2.62	0.0003	I(1)

Source: E-views 9.0 Output, 2017

From the unit root tests results, all the variables are stationary (i.e no unit root) at first difference that is, I(1) since their ADF test statistics is greater (using absolute value) than the critical values at all significant levels.

### VAR Lag Order Selection Criteria

A lag of 1 is chosen for the empirical model based on Schwarz Information Criterion, Sequential Modified LR Test Statistic, Final Prediction Error and Hannan-Quinn Information Criterion. Note that, large lag length reduces the impact of the independent variables on the dependent variable.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-201.7474	NA	0.002610	13.91649	14.24344	14.02108
1	-47.07956	226.8461*	2.50e-06*	6.871971	9.487539*	7.708713*
2	9.824594	56.90415	2.68e-06	6.345027*	11.24922	7.913920

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: *E-views 9.0 Output, 2017*

Engle and Granger (1987) pointed out that a linear combination of two or more non stationary time series may be stationary. If such a stationary linear combination exists, the non stationary time series is said to be co-integrated. The stationary linear combination may be interpreted as a long run equilibrium relationship between the variables. The Johansen system framework is employed to test for the presence of co-integrating relationships among the non stationary variables. The result is presented below:

Null Hypothesis	Trace Statistic	0.05 Critical Value	Null Hypothesis	Max-Eigen Statistic	0.05 Critical Value
$r = 0^*$	156.12	125.61	$r = 0^*$	52.33	46.23
$r \leq 1^*$	103.78	95.75	$r \leq 1$	34.19	40.08
$r \leq 2$	69.59	69.82	$r \leq 2$	32.32	33.88
$r \leq 3$	37.28	47.86	$r \leq 3$	17.97	27.58
$r \leq 4$	19.30	29.79	$r \leq 4$	10.49	21.13
$r \leq 5$	8.82	15.49	$r \leq 5$	6.24	14.26
$r \leq 6$	2.57	3.84	$r \leq 6$	2.57	3.84

Source: *E-views 9.0 Output, 2017*

Note:  $r$  represents number of co integrating vectors. Both Trace statistic and Max-Eigen statistic indicates 2 & 1 cointegrating equation each. \* denotes rejection of the hypothesis at the 0.05 level

The results of Johansen Cointegration revealed that there is co-integration among the variables. This is because the Trace and Max-Eigen Statistic of 156.12, 103.78 and 52.33 is greater than the critical values of 125.61, 95.75 and 46.23 at 5% level of significance respectively. Accordingly, Trace and Max-Eigen statistic test indicates 2 and 1 co-integrating equation at 5 percent level of significance.

The result of the Johansen co-integration showed the existence of long run relationship among the variables. Since we have identified the existence of co-integrating equation, we can say that a stable equilibrium relationship is present. The results of this long run relationship is presented below:

$$INDO = -1.37EXL + 0.49FDI - 0.28FPI - 0.95RIMT - 1.44ODA + 0.03EXR$$

(0.19)      (0.24)      (0.11)      (0.16)      (0.19)      (0.005)      --- eqn.3

*Source: E-views Output 9.0, 2017*

*Note: The standard errors stated in parenthesis.*

The coefficient estimate of external loan has a negative sign although significant at 5% level, which is contrary to the a priori expectation. This is in line with the findings of Hassan, Sule & Abu (2015). On theoretically grounds, there is strong basis for expecting EXL to have a positive role in the level of industrialization if it is efficiently allocated to productive projects. Year in year out, Nigeria government has continued to acquire external loans to finance development project notably infrastructural project capable of spurring industrial sector growth. Currently our external loans stock is to the tune of \$11.41 billion according to Debt Management Office (2017); its impact is yet to translate to vibrant and sustainable industrial sector.

Equation 3 also shows that a one percent increase in foreign direct investment is associated with 0.49 per cent increase in industrial output. This therefore explains that growth of FDI has positive and significant influence on the size of the Nigerian industrial sector in the long-run. This finding is in line with the findings of Kolawole (2013), Akpan & Eweke (2017) although contrary to the findings of Okonkwo (2016). However, it is on record that large chunk of Nigeria's industrial output comes from oil and gas sector (OECD, 2005), which reflects only a side of the performance of the industrial sector.

Foreign Portfolio Investment shows a negative relationship with industrial output. The results show that a one per cent increase in portfolio investment is associated with a 0.28 decrease in the growth of industrial output of the Nigerian economy. This is consistent with findings of Houssein and Hichem (2011). These finding also might be the reasons for Tamuno & Edoumiekumo (2012) to assert that Nigeria's domestic investment is weak and unreliable.

The test results shows that remittance to the industrial sector were significant at 5 per cent. As such, a 1% increase in the inflow of remittance, industrial output will decrease by 0.95 per cent. This portends that, a good proportion of remittances do not find its way into industrial subsectors of the Nigeria's economy. This finding is contrary with the findings of Akinpelu, Ogunbi,

Bada, & Omojola, (2013), Odionye & Emerole (2015). The remittance trend recorded significant proportion of the inflow within the study period, however this has not reflected on the general industrial sector's performance given the negative sign above.

At macro level, ODA inflows can affect many facets of socio-economic activities like human capital development, capital accumulation, production, poverty alleviation owing to the fact that it is a contribution spread across sectors of developing countries. The result of ODA obtained above is negatively signed and statistically significant at 5% level, is contrary to expectations. The results show that a one percent increase in ODA will significantly lead to a 1.44% decrease in INDO. This implies that in Nigeria ODA does not influence the activities of industrial sector in the long-run and this is in line with the works of Orji, Akachukwu and Ilori (2014) and Ugochukwu, Okafor & Azino (2016). One worrisome observation is that, giving the large sum, there is need to develop new modalities with donor agencies on how significant portion of this fund can be channeled into the industrial sector.

The results of exchange rate shows that a one percent increases will lead to a decrease of 0.03 per cent in industrial output. This suggests that when the EXR of the domestic currency increases (appreciate), INDO will grow slowly because the various subsectors of industrial sector and their products will be less attractive to importers, decrease export and subsequently reduce industrial output. In recent time, especially from early 2015 when the major exportable product of crude oil crash at the international market, this really has affected the rate at which naira is exchange for dollars consequently affected the prices of goods and services owing to the fact that Nigeria is an import dependent country.

### **The Error Correction Model**

In order to ascertain both the short run and long run interdependence that exist among the variables after confirming the existence of co-integration, the study further investigate the dynamic relationship among the variables by specifying the error correction model. This is stated below:

<b>Variable</b>	<b>Coefficients</b>	<b>Standard Error</b>	<b>t. Statistic</b>
<b>D(INDO(-1))</b>	0.55	0.27	2.56
<b>D(EXL(-1))</b>	0.05	0.23	1.35
<b>D(FDI(-1))</b>	-0.22	0.10	2.70



<b>D(FPI(-1))</b>	-0.03	0.05	-0.70
<b>D(RIMT(-1))</b>	-0.09	0.15	-0.06
<b>D(ODA(-1))</b>	0.08	0.10	0.75
<b>D(EXR(-1))</b>	0.002	0.002	0.87
<b>ECM<sub>(-1)</sub></b>	-0.47	0.17	2.11
<b>Adj. R<sup>2</sup> = 0.51, S.E. = 21.65, F-Statistics = 5.94, Log Likelihood = 23.45</b>			

*Source: E-views 9.0 Output, 2017.*

The results shows that in the short-run the growth of INDO (-1)) in the current year is positively and insignificantly influenced by the growth of EXL and ODA. This implies that a one percent increase in EXL and ODA is associated with 0.05 percent and 0.08 percent increase in INDO. The results also show that the growth of foreign direct investment impact negatively on the growth of industrial output though significant. Contrary to expectations, foreign portfolio investment, remittances exert negative influence on the growth of industrial output in the short-run. The behaviour of exchange rate is not surprising giving the instability in the currency exchange due to the mono-economy of over reliance on crude oil sale. The error correction term (ECM) value of -0.47, with standard error of 0.17 and F-statistic of 2.11 indicates that the speed of adjustment to long-run situation is significant. The adjusted R-squared of the result shows that our model is able to explain about 51 per cent of total variation in industrial output. In all, the results suggest that the variable captured in the model have the tendency to adjust to the long-run equilibrium values after experiencing short-run deviation at a speed of adjustment of 47% per cent.

### **Major Findings**

The trend within the period of the study shows that the flows of external financing has being stable although across sources there are differences in the flows. The period from 2005 after the bank consolidation to 2016, witness more of the flows than the previous years. Surprisingly, remittance is the strongest contributor to external financing. Literature shows that the proportion of ODA that goes to the industrial sector is negligible due to either misplaced priorities or conditionality or the bilateral agreement attached to the inflow.

On the effect of external financing on industrialization in Nigeria, the result obtained shows that there is negative relationship between external loan,

foreign portfolio investment, remittance, official development assistance and industrial output in Nigeria while foreign direct investment exerts a positive sign on industrial output. This finding is in line with the findings of Hassan, Sule & Abu (2015), and it is contrary to the findings of Okonkwo (2016). Similarly, the short-run model shows that external loans, official development assistance, exchange rate exert positive relationship with industrial output while foreign direct investment, foreign portfolio investment, and remittance show positive relationship with industrial output.

### **Conclusion and Policy Recommendations**

One of the major challenge confronting emerging market economies is the rate of investment in productive sector which industry is a part. Nigeria has gone through several phases of economic reforms with the expectation of becoming self-sufficient in the production of basic finished goods. That is not yet achieved, as empirical results of the various components of external financing show that, there effect on industrial output in Nigeria is still beyond acceptable threshold and inconsequential. The study concludes that Nigeria has benefit from foreign capital inflows but its impact is yet to be felt. Hence, there is urgent need for a policy framework to address this especially as it concerns the external financing inflows, so the study recommends that Nigeria government should properly align foreign funds inflows to suit the industrial sector, as the current external financing structure has not recorded significant gains. In addition, the government should also advocate for more of the official development assistance to industrial sector given the small proportion allocated to the sector within the study period.

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