



## External Financing and Investment in Firms (1990- 2020)



Mbagwu Onyinyechi <sup>a</sup>

### Article history:

**Submitted:** 27 May 2021

**Revised:** 18 August 2021

**Accepted:** 03 September 2021

### Keywords:

*external debt stock;*

*external financing;*

*foreign direct investment;*

*foreign portfolio investment;*

*industrial growth;*

*official development assistance;*

### Abstract

The study examined the relationship between external financing and investment in firms in Nigeria for the duration of 1990-2019. To achieve the main objective of the study, investment in firms which is the dependent variable was proxy with Industrial Growth (INDG) while the external financing as the independent variable was measure with External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA) and Foreign Portfolio Investment (FPI). This study made use of Ex-post facto research design and secondary source of data (time series data), from the CBN statistical bulletin and Annual Report for the period 1990-2019. The stationary and normality tests will be carried out to ascertain the set data will give accurate regression results since the data for the study are annual time series data. The study adopted several techniques of data analysis such as descriptive statistics, correlation, and multiple regression tool of analysis with the aid of E-VIEW 9.0 statistical package was used to analyze the data because this technique was used to establish the kind of relationship that exists between the independent variables and the dependent variable used in the study.

*International research journal of management, IT and social sciences* © 2021.

*This is an open access article under the CC BY-NC-ND license*

*(<https://creativecommons.org/licenses/by-nc-nd/4.0/>).*

### Corresponding author:

Mbagwu Onyinyechi,

Department of Accounting, Banking, and Finance, Faculty of Management Sciences, Delta State University, Abraka, Nigeria.

Email address: [sylviambagwu@gmail.com](mailto:sylviambagwu@gmail.com)

<sup>a</sup> Department of Accounting, Banking, and Finance, Faculty of Management Sciences, Delta State University, Abraka, Nigeria

## 1 Introduction

The significance of external finance in driving interest in firms and invigorating economic development has been recognized in financial writing by various economic analysts. Thusly, in economies where domestic money is insufficient, inclination exists for a low degree of interest in firms in the modern area along these lines economic development is destined to be influenced. In circumstances where it's anything but conceivable to raise speculation levels because of inadequate investment funds, unfamiliar inflow is a substantial option since external finance inflow is a significant vehicle for enlarging the stock of assets for domestic ventures (Abubakar, 2017).

The flow of external financing in form of foreign direct investment, external loans, and other concessional economic investment, to non-industrial nations, has quadrupled in Africa since 2001. Throughout the long term, external financing explicitly unfamiliar direct speculation has become the biggest wellspring of unfamiliar assets streaming to non-industrial nations, of which Nigeria is probably the most elevated beneficiary in sub-Saharan Africa nations (Alyoubi, 2015). The measure of capital accessible in the depository of most emerging nations was deficient to meet their monetary development needs predominantly because of their low usefulness, low investment funds, and intense usage design. Subsequently, governments resort to external financing to connect the asset hole. Emerging nations are left without any choices other than resort to external financing and unfamiliar help to connect the saving-venture hole fully intent on accomplishing economic development and poverty decrease. Among these external financing, channels are Official Development Assistance (ODA), Foreign Direct Investment, Foreign Portfolio, Remittances, and External Debt. ODA more commonly known as foreign aid consists of resource transfers from the public sector, in the form of grants and loans at concessional financial terms, to developing countries (Ekwunife & Ikeora, 2019).

External Debt Stock as a factor in this examination can be characterized as the aggregate of public, openly ensured, and private unguaranteed long haul obligations, the utilization of IMF credit, and other momentary obligations. Foreign Direct Investment (FDI) is the net inflows of the venture to gain an enduring economic premium in an endeavor working in an economy other than that of the financial backers; while Foreign Portfolio Investment-in any case regularly called portfolio value involves net inflows from value protections other than those recorded as FDI, which incorporates e shares, stock, store receipts and direct acquisition of offers in nearby securities exchanges by foreign financial backers (Ekwunife & Ikeora, 2019).

The need to adjust the reserve funds venture hole and offset the budget deficit in emerging nations throughout the years has proceeded to impel and urge their government to solicit for external money outside signage-available resources; domestic incomes and inner acquiring. Nigeria's economy like most profoundly obliged helpless nations of the world is portrayed by low economic development and low per capita pay, with domestic reserve funds deficient to meet formative and other public objectives. Her fares are essential items with sending out income too little to even consider financing imports which are for the most part capital serious merchandise that are equivalently more costly however basic for significant useful exercises (Siddique et al., 2015). Intensifying the issue of Nigeria's helpless fare income was her consistent slide into a mono-economy with the revelation of oil. The oil area represents more than 75% of government income and comprises the majority of the nation's fare (96%). The powerlessness/reluctance of progressive Nigerian governments since autonomy to expand her income sources compels her to consistently hotspot for external money to do its formative activities (Udoka & Ogege, 2012).

Critically, discoveries from industrializing and arising economies have shown that maintainable improvement isn't possible on a frail industrial base; it is clear that there is a solid connection between the degree of industrialization, economic development, and advancement. Industrialization assists nations with accomplishing expansion in the venture, differentiate their economies to accomplish a high development rate, and decreases the danger from external shocks; this is apparent in nations like Japan, China, Malaysia, Singapore, and so on Moreover, supporting organizations, for example, research establishments like Federal Institute of Industrial Research (FIIR), Raw Materials Research Development Center (RMRDC) with workplaces arranged in each condition of the league have been set up notwithstanding polytechnics and colleges of innovation (Ekwunife & Ikeora, 2019). Notwithstanding this has not yielded a significant effect on Nigeria's industrial base. Wickramarachi and Savard (2018) pointed toward giving a gauge appraisal to nations trying to further develop their business surroundings and draw in foreign financial backers. This appraisal positioned Nigeria at 104 out of 136 nations on the six mainlands, which infers that the required foreign presence to drive industrial development is as yet restricted and to a great extent slanted towards raw petroleum investigation (Colombo & Grilli, 2005; Chae et al., 2009).

Lamentably, in light of the development viewpoint in Nigeria, the accessible industrial outlet is as yet working past the introduced limit even for certain financial backers pointed toward boosting the area's activities. Nigeria has likewise settled modern/exchange zones the nation over, yet the foreign presence and positive effect on industrialization are yet to be seen even with concessions, waivers, and assessment occasions allowed to both foreign and domestic financial backers. The portion of industrial area to GDP in 1985 remained at 50.4% diminishing to 43.2% in 1999 when Nigeria introduced a fourth just system. It declined to 24% in 2015 and further dropped to 23.18% in 2018. This descending direction of industrial development isn't shocking given the constant ascent in the insights of non-oil imports to the tune of N7.0bn in 1985, ascending to N650.9bn in 1999, N9, 350.8bn in 2015, and N9, 758.9bn in 2018 while non-oil trade saw moderate development amid the huge possibilities of Nigeria's industrial area. In the comparing time frame, it remained at N0.5bn, rose to N19.5bn, N660.7bn, and N1, 434.2bn separately (Ekwunife & Ikeora, 2019). This is an obvious sign that Nigeria is as yet a conventional economy with high reliance on imported items. The exploration of external financing on interests in firm investments with industrial development in Nigeria is with the sole point of laying out how researchers have added to this significant examination plan.

The researches of Adekunle & Sulaimon (2018); Oburota & Ifere (2017); Ugwuegbe et al. (2016), are centers on economic growth with positive outcomes while the study of Abubakar (2017), centered on industrial growth with a negative outcome. The only similar work is that of Okonkwo (2016), who focused on industrial growth and failed to incorporate important proxies of external financing options such as foreign direct investment in his/her model. Also, there is no study in Nigeria and beyond that has examined the relationship between external financing and investment in firms in Nigeria, rather all the previous studies are geared toward economic growth and industrial growth, thus, in this study, the investments infirm will be proxy with industrial growth in Nigeria. It is in this light that this study seeks to examine the potential of external financing in boosting industrial growth in Nigeria from 1990 to 2019. This study proceeds as follows. Section 2 present the literature review, section 3 describes the methodology. Section 4 discusses the results and checks for the robustness of our analysis, while section 5 concludes with recommendations and contributions to knowledge (Zetlin-Jones & Shourideh, 2017; Abokyi et al., 2019).

### *Review of related literature*

This section is concerned with a review of related literature. This was done under the following sub-headings, namely; conceptual, theoretical, and empirical review on the relationship between external financing and investment in firms (proxy with industrial growth) in Nigeria.

#### *Conceptual review*

##### *Concept of external financing*

The investigation conceptualizes external financing as the flow of assets and other capital merchandise in the type of administrative expertise and current innovation from developed to emerging nations to support their usage limit. Comparable, it is a flow of specialized aptitude into emerging economies from foreign partners to back economic activities for the general development of the economy (Ekwunife & Ikeora, 2019). This external financing could be in the type of foreign direct investment, external credits, and settlements and now and again, this external financing could be in concessionary terms. This definition is in authentication with International Monetary Fund (IMF), affirmation with accentuation on external money to expand for domestic venture inside the emerging economies. Most emerging economies have their venture root followed to cutting-edge economies, global foundations, and other worldwide organizations because of restricted asset ability to set out for enormous scope infrastructural advancement for creation of labor and products. Joined Nations and their sub-bodies have kept on accentuating the requirement for high and stable capital streams from developed to non-industrial nations, with a new shift from multilateral and reciprocal authority streams to private streams (Kohtamäki et al., 2013; Sheng & Sukaj, 2021).

The external financing prerequisite of a firm relies upon its development openings, and regardless of whether they can be subsidized from inner assets. This may, thus, rely upon the phase of improvement, which is firmly connected with the age of the undertaking. The main wellspring of money in the beginning phases are close to home assets of the firm proprietor, loved ones, which normally establish the best piece of capital design at startup (Mac an Bhaired & Lucey, 2011). These assets are usually enhanced by momentary obligation, however may likewise incorporate long-haul credits which are regularly gotten on the individual resources of the firm proprietor (Mac an Bhaired & Lucey, 2010). More youthful firms experience issues getting to obligation, nonetheless, as a result of an absence of financial record (Sánchez-Vidal & Martín-Ugedo, 2012). Also, more modest firms have moderately more prominent office

costs, and therefore more noteworthy expenses of mitigating data deviations because of economies of scale (Daskalakis & Psillaki, 2008). Moreover, obligation money may not be suitable, adequate, or accessible for different classifications of firms (for example quick development cutting edge endeavors), and these organizations ordinarily look for finance in value markets. This is especially valid for quick development firms lacking security as fixed resources with a necessity for a lot of value (Bartholdy & Mateus, 2008).

### *Industrial growth*

This examination sees industrial growth to be the absolute worth expansion from the mix of normal assets, human limit, and industrial strategy to create semi-completed and completed products. The degree of industrialization is both exogenous and endogenously determined given the different variables of factors of production needed for its factors of production measures. Nigeria being an emerging economy is as yet settled in with inadequacy in both the administrative and present-day innovation to develop new items, accordingly the requirement for external financing through external credits, foreign direct investments, and settlements which improves production limit consequently boosting industrial activities. There are three (3) fragments of the industrial area in Nigeria specifically—raw oil and petroleum gas, solid minerals, and manufacturing (Ekwunife & Ikeora, 2019).

The above definition supports that of Todaro & Smith (2011), who insinuated that for a country to be industrialized, it requires primary change and underlying change is the way toward changing an economy so that the commitment to public pay by the manufacturing area, in the end, outperforms the commitment by the agricultural area. To Adejuge (2004), industrialization is the way toward bridling human and material assets, with expanding use of science and innovation to the creation of labor and products. The degree of industrialization of a nation can be evaluated by the manufacturing area's ability usage, the rate portion of the manufacturing area to the nation's GDP, the commitment of solid minerals to GDP, and just as the yield of completed merchandise from the manufacturing area.

In light of the observational survey, it displayed no investigation in Nigeria and past has inspected the connection between external financing and investments in firms in Nigeria, rather every one of the past examinations is intended for economic growth and industrial growth, along these lines, in this investigation, the investment infirm will be proxy with industrial growth in Nigeria. Likewise, examines directed relating external financing and investments in firms in Nigeria, has blended discoveries, with some setting up certain results and others adverse results. It is in this premises that this investigation looks to inspect the capability of external financing in boosting investments in firms (proxy with industrial growth) in Nigeria for the duration of 1990-2020 (Drine & Nabi, 2010; Mielnik & Goldemberg, 2002).

### *Theoretical review*

#### *Great big push theory*

The great Big Push hypothesis is propounded by Rosenstein-Rodan (1961), who attested that "coordinated investment", is the premise of the idea of the great push. That is an enormous far-reaching program is required as a high least measure of investment to defeat the snags to improvement in an immature economy and to dispatch it on the way to progress. Emerging nations for the most part come up short on the capital needed to give this great push in ventures. Consequently, the great push theory turned into the defense for foreign guides and other external financing channels. For significant improvement to set in, an explicit measure of assets should be accessible for comprehensive projects. Along these lines, Rosenstein-Rodan's contentions turned into a significant almost advancement financial analysts pondered improvement issues during the 1950s and 1960s, and this has being educated being developed course (Todaro & Smith, 2011). Significantly, Big Push thought has gotten back to the focal point of improvement strategy as of late. Particularly the coming up of the Commission for Africa and the Millennium Development Goals by the United Nations MDGs, and most as of late the Sustainable Development Goals which launched in January first, 2016. Transforming improvement prospects of Africans has been related with reestablished accentuation on the positive case for a Big Push. This has been connected to the situation for significant development as a team with other foreign nations and financial backers (Wall, 1995; Aggarwal et al., 2012).

#### *Kaldor first law*

Then again, Kaldor (1966), as referred to by Ekwunife & Ikeora (2019), placed that the development direction of developed economies in the post-conflict time frame showed the connection between industrial development and the

performance of the economy all in all. This perception is the beginning of Kaldor's first law, which expresses that there is a cozy connection between the growth of manufacturing output and gross domestic product (GDP). The dynamic quality of manufacturing and other subsectors of industry in emerging nations requires external financing due to their backwardness in capital merchandise and economic ability, as such this investigation takes a gander at how this external financing can spike the development of the industrial sector as proposed by great push hypothesis among others (Aggarwal, 2017; Dahiya & Chaudhary, 2016).

Likewise, investments performance of external financing to non-industrial nations, have not fiddled on the chance of fusing quality establishments in development and advancement hypothesis consequently delivering the materialness of those investments to non-industrial nations a test. In the mission to resolve these issues, supporting contentions from remarkable researchers drove by Stiglitz (1998), as referred to by Ekwunife & Ikeora (2019), in modified Washington Consensus got noticeable. To receive the full rewards of globalization adequately, the economy requires quality organizations that can implement agreement and property rights. As indicated by Clague et al. (1999), as referred to by Ekwunife & Ikeora (2019), implementation of agreement and property rights through the proportion of agreement concentrated cash can achieve a bigger portion of industrial output to GDP and gains from economies of scale and specialization prompting higher capital stock, usefulness, and per capita pay. Furthermore, the more prominent the capacity of financial backers to source subsidizes the higher pace of venture and quicker pace of industrial growth.

### *Empirical review & gap*

Using the Great Big Push Theory and Kaldor's First Law and adopted the Autoregressive Distributive Lagged (ARDL) bound approach estimation technique; Abubakar (2019), explored the potential of external financing in spurring industrial growth in Nigeria for the duration of 1985-2018. The study used Industrial Output (INDO), External Loans (EXL), Foreign Direct Investment (FDI), Remittances (RIMT), Gross Fixed Capital Formation (GFCF), Industrial Energy Consumption (IEC), and Contract Intensive Money (CIM) as variables in estimating the relationship. The result revealed that a positive relationship exists between EXL and INDO while FDI and RIMT exert a negative effect on industrial growth. The control variables further showed that GFCF, IEC, CIM exerts a positive influence on industrial growth. Since only EXL exerts a positive influence on INDO, the study concludes that external financing (that is, FDI and RIMT) has not yielded the desired effect on industrial growth in Nigeria.

Similarly, using data obtained from World Development Indicator and analyzed by Autoregressive Distributive Lag (ARDL), Ekwunife & Ikeora (2019), explored the impact of external financing on economic growth in Nigeria for the duration of 1986-2017. External financing was proxied with external debt stock (EDS), foreign direct investment (FDI), official development assistance (ODA), remittance (RMT), and foreign portfolio investment (FPI) examine about economic growth proxy with an annual growth rate of gross domestic product (GDPR). The findings indicated that, in the long run, EDS and FDI had negative and positive, significant effects, respectively, while others did not affect growth; in the short run, all the external financing variables (EDS, FDI, FPI, ODA, and RMT) had no significant effect on economic growth in Nigeria. The study averred that FDI is a veritable source of financing that can bring about economic sustainability to Nigeria.

Using Autoregressive Distributed Lag (ARDL) on annual time series data from 1986 to 2015, Adekunle & Sulaimon (2018), explored the relationship between foreign capital flows and economic growth in Nigeria. The result indicated that foreign capital flows (foreign direct and portfolio investment, external loans, and foreign aids) exert both linear and non-linear effects on economic growth in Nigeria. Using data 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 and analyzed with Dual Gap Model and adopted the analytical technique of Johansen Cointegration Test & Error Correction Model for data analysis, Abubakar (2017), explored the effect of external financing on industrialization in Nigeria for the duration of 1985-2016. The result indicated 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.

Using Ordinary Least Square (OLS) on time series data from 1986 to 2013, Okonkwo (2016), explored the relationship between foreign portfolio investment and industrial growth in Nigeria. The result indicated that there is a positive relationship between foreign portfolio investment, gross fixed capital formation, market capitalization, and industrial growth. Based on the empirical review, a study on external financing on economic or industrial growth in Nigeria has mixed findings and they are inconclusive. Also, there is no study in Nigeria and beyond that has examined the relationship between external financing and investment in firms in Nigeria, rather all the previous studies are geared



toward economic growth and industrial growth, thus, in this study, the investments infirm will be proxy with industrial growth in Nigeria. It is in this light that this study seeks to examine the potential of external financing in boosting industrial growth in Nigeria from 1990 to 2019.

## 2 Methodology

### *Research design*

This study made use of an Ex-post facto research design; this is because the data for the study has to do with events that have already taken place which cannot be manipulated by the researcher.

### *Source of data*

The method of data collection used in this study was the secondary source of data (time series data), from the CBN statistical bulletin and Annual Report for the period 1990-2020. The choice of secondary data was made as it is faster, reduces time wastages in data gathering, is non-reactive, often available for re-analysis, also provides a broad background, and readily improves one's learning curve. Secondary data is neither better nor worse than the primary data; it is simply different. The source of the data is not as important as its quality and its relevance for particular purposes.

### *Techniques of data analysis*

The stationary and normality tests will be carried out to ascertain the set data will give accurate regression results since the data for the study are annual time series data. The study adopted several techniques of data analysis such as descriptive statistics, correlation, and multiple regression tool of analysis with the aid of E-VIEW 9.0 statistical package was used to analyze the data because this technique was used to establish the kind of relationship that exists between the independent variables and the dependent variable used in the study.

### *Model specification*

The model for the study was an adaptation and modification of the work, who examined external financing and economic growth in Nigeria. Their model is stated thus:

$$\begin{aligned} \text{GDPR} &= f(\text{EDS}, \text{FDI}, \text{ODA}) \\ \text{GDPR} &= b_0 + b_1 \text{EDS} + b_2 \text{FDI} + b_3 \text{ODA} + U_t \dots \dots \dots (1) \end{aligned}$$

Where:

- GDPR = Annual Growth Rate of Gross Domestic Product
- EDS = External Debt Stock
- FDI = Foreign Direct Investment
- ODA = Official Development Assistance
- b<sub>0</sub> = the constant
- b<sub>1</sub>- b<sub>3</sub> = the coefficients of the explanatory variables
- U<sub>t</sub> = Error term

The present model added two more external financing variables (of foreign portfolio investment) to capture additional external financing channels in Nigeria in one model and investments in firms which is the dependent variable, was proxy with industrial growth. The modified model is therefore shown as follows:

$$\begin{aligned} \text{INDG} &= f(\text{EDS}, \text{FDI}, \text{ODA}, \text{FPI}) \\ \text{INDG} &= b_0 + b_1 \text{EDS} + b_2 \text{FDI} + b_3 \text{ODA} + b_4 \text{FPI} + U_t \dots \dots \dots (2) \end{aligned}$$

Where:

- INDG = industrial Growth  
 EDS = external Debt Stock  
 FDI = foreign Direct Investment  
 ODA = official Development Assistance  
 FPI = foreign Portfolio Investment  
 b0 = the constant  
 b1- b4 = the coefficients of the explanatory variables  
 Ut = Error term

#### *Justification of variables*

It is generally expected that developing countries experiencing inadequate capital will acquire external debt to supplement domestic savings and investment. Invariably, investment in form of FDI raises productivity through technology transfers leading to profit thereby raising government revenue through taxation. Foreign Portfolio investment is in the acquisition of asset or equity of domestic firms, which enable access to credit in foreign countries where they have significant investments and makes the home markets competitive. Official Development Assistance is an important diplomatic tool in helping developing countries upgrading their physical infrastructure (like telecommunication), which subsequently plays an important role in the process of economic development.

#### *Apriori expectation*

Based on the few existing empirical analysis and theoretical stipulations we expect that External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA), and Foreign Portfolio Investment (FPI) to have positive relationships with industrial growth in Nigeria, symbolically;  $b_1, b_2, b_3, b_4 > 0$ .

### 3 Results and Discussions

Table 1  
Descriptive statistics

	INDG	EDS	FDI	ODA	FPI
Mean	10332.19	2145.343	423.5297	66.98640	178.7820
Median	5557.075	806.8600	263.2300	2.800000	107.4350
Maximum	39879.69	9022.420	1360.400	680.3500	848.3500
Minimum	131.3300	298.6100	4.730000	0.892000	0.200000
Std. Dev.	10884.68	2358.336	409.6943	182.5835	242.9918
Skewness	1.091721	1.524179	0.830872	2.863544	1.746842
Kurtosis	3.231997	4.473668	2.471746	9.546116	4.977217
Jarque-Bera	6.026549	13.37488	3.800554	94.56397	20.14402
Probability	0.049131	0.001246	0.049527	0.000000	0.000042
Sum	309965.8	60069.59	12705.89	2009.592	5363.460
Sum Sq. Dev.	3.44E+09	1.50E+08	4867633.	966765.5	1712306.
Observations	30	30	30	30	30

Source: Computed from E-Views 9.0 (2021)

The descriptive characteristics of the variables are presented in Table 1 The average values of the Industrial Growth (INDG), External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA), and Foreign Portfolio Investment (FPI) are 10332.19, 2145.343, 423.5297, 66.98640, and 178.7820 respectively, while their standard deviation is 10884.68, 2358.336, 409.6943, 182.5835 and 242.9918 respectively. All the variables are positively skewed towards normality. The kurtosis that measures the peakness of the distribution reveals that Official Development Assistance (ODA) is leptokurtic indicating that the distributions are peaked relative to a normal distribution, while Industrial Growth (INDG), External Debt Stock (EDS), Foreign Direct Investment (FDI) and

Foreign Portfolio Investment (FPI) are platykurtic, which implies that the distribution of the variables is flat relative to normal distribution. Lastly, the Jarque-Bera statistics revealed that the variables normally distributed at a 5% significant level, since the Jarque-Bera Probability for the variables are lesser than 5%.

Table 2  
Correlation Matrix

	INDG	EDS	FDI	ODA	FPI
INDG	1.000000				
EDS	0.641700	1.000000			
FDI	0.410878	-0.189450	1.000000		
ODA	0.582921	0.772253	-0.076628	1.000000	0.872079
FPI	0.557620	0.644457	0.247934	0.872079	1.000000

Source: Computed from E-Views 9.0 (2021)

The Pearson correlation test is presented in Table 2 and it shows the absence of multi-co linearity among the variables since the correlation values are less than 0.7. Furthermore, the result shows the explanatory variables namely External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA), and Foreign Portfolio Investment (FPI) have a positive correlation with Industrial Growth (INDG).

Table 3  
Result of stationarity using ADF test

Test Variables	ADF Test Statistic Value	Mackinnon Critical Value @ 5%	Order of Integration	P-Value	Decision
INDG	-0.737703	-3.012363	1(1)	0.0003	Stationary
EDS	-3.152701	-2.991878	1(1)	0.0359	Stationary
FDI	-2.757549	-2.098064	1(1)	0.0001	Stationary
ODA	-8.349996	-2.971853	1(1)	0.0000	Stationary
FPI	-6.919663	-2.971853	1(1)	0.0000	Stationary

Source: Computed from E-Views 9.0 (2021)

The summary of the ADF unit root test output in table 3 above revealed that all the variables under investigation i.e. Industrial Growth (INDG), External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA), and Foreign Portfolio Investment (FPI) contain unit root test at their first difference 1(1). Evidence of this could be seen from the value of their respective ADF statistics which is more than the critical value at 5%. Moreover, additional evidence of stationary series could also be seen from the p-value for all variables which is less than 5% level of significance greater than 95% confidence level. Based on this result, the null hypothesis of non-stationarity is rejected while the alternative hypothesis specifying the presence of stationarity is accepted instead.

Table 4  
Summary of johansen cointegration test output

Hypothesized			0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
No. of CE(s)	Eigenvalue	Trace Statistic					
None *	0.957372	128.5681	69.81889	0.0000	75.72608	33.87687	0.0000
At most 1 *	0.711114	52.84199	47.85613	0.0158	29.80138	27.58434	0.0255
At most 2	0.460644	33.04062	29.79707	0.0441	34.81710	21.13162	0.0019
At most 3	0.227018	28.223519	15.49471	0.0418	16.179979	14.26460	0.002
At most 4	0.081623	6.043540	3.841466	0.0429	6.043540	3.841466	0.0029

Source: Researcher's computation Based E-views 9.0. Output (2021)



Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

Table 4 above revealed that the result of the multivariate cointegration test by Johansen and Juselius cointegration technique reveals that both the trace statistic and the Maximum Eigenvalue statistic shows evidence of two cointegration relationship (at None and most 1), where the values of the trace statistic and the Maximum Eigenvalue statistic is greater than their respective critical values at 5% level of the significance level.

Table 5  
Multiple regression result

Dependent Variable: INDG				
Method: Least Squares				
Date: 07/11/21 Time: 18:52				
Sample: 1990 2019				
Included observations: 28				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-902.3819	1552.136	-0.581381	0.5666
EDS	1.130661	0.557288	2.028862	0.0542
FDI	11.45299	2.579247	4.440440	0.0002
ODA	27.21369	12.19063	2.232345	0.0356
FPI	6.873901	8.689887	0.791023	0.4370
R-squared	0.864918	Mean dependent var		9388.659
Adjusted R-squared	0.841426	S.D. dependent var		10647.65
S.E. of regression	4240.040	Akaike info criterion		19.70297
Sum squared resid	4.13E+08	Schwarz criterion		19.94086
Log-likelihood	-270.8415	Hannan-Quinn criteria.		19.77569
F-statistic	36.81684	Durbin-Watson stat		0.822736
Prob(F-statistic)	0.000000			

Source: Researcher's computation Based E-views 9.0 Output (2021)

From Table 5 above, the p-value of External Debt Stock (EDS) is 0.0542 which is equal to the significance value of 0.05, and the t-ratio value of 2.028862 greater than 2, which indicates the extent of significance to which External Debt Stock (EDS) affects Industrial Growth (INDG) in Nigeria. The coefficient of External Debt Stock (EDS) of 1.130661, implies that External Debt Stock (EDS) has a positive effect on Industrial Growth (INDG) in Nigeria. The implication is that a one percent (1%) increase in External Debt Stock (EDS) would lead to a 113% increase in Industrial Growth (INDG). This finding agrees with the findings of [Adekunle & Sulaimon \(2018\)](#), but is contrary to the findings of [Ekwunife & Ikeora \(2019\)](#); [Abubakar \(2017\)](#).

The p-value of Foreign Direct Investment (FDI) is 0.0002 which is less than the significance value of 0.05 and the t-ratio value of 4.440440 greater than 2, which indicates the extent of significance to which Foreign Direct Investment (FDI) affects Industrial Growth (INDG) in Nigeria. The coefficient of Foreign Direct Investment (FDI) of 11.45299, implies that Foreign Direct Investment (FDI) has a positive effect on Industrial Growth (INDG) in Nigeria. The implication is that a one percent (1%) increase in Foreign Direct Investment (FDI) would lead to a 1,145% increase in Industrial Growth (INDG). This finding agrees with the findings of [Adekunle & Sulaimon \(2018\)](#), but is contrary to the findings of [Ekwunife & Ikeora \(2019\)](#); [Abubakar \(2017\)](#). The p-value of Official Development Assistance (ODA) is 0.0356 which is less than the significance value of 0.05 and the t-ratio value of 2.232345 greater than 2, which indicates the extent of significance to which Official Development Assistance (ODA) affects Industrial Growth (INDG) in Nigeria. The coefficient of Official Development Assistance (ODA) of 27.21369, implies that Official Development Assistance (ODA) has a positive effect on Industrial Growth (INDG) in Nigeria. The implication is that a one percent (1%) increase in Official Development Assistance (ODA) would lead to a 27,214% increase in Industrial Growth (INDG). This finding agrees with the findings of [Adekunle & Sulaimon \(2018\)](#), but is contrary to the findings of [Ekwunife & Ikeora \(2019\)](#); [Abubakar \(2017\)](#).

The p-value of Foreign Portfolio Investment (FPI) is 0.4370 which is more than the significance value of 0.05 and the t-ratio value of 0.791023 lesser than 2, which indicates the extent of insignificance to which Foreign Portfolio Investment (FPI) affects Industrial Growth (INDG) in Nigeria. The coefficient of Foreign Portfolio Investment (FPI) of 6.873901, implies that Foreign Portfolio Investment (FPI) has a positive effect on Industrial Growth (INDG) in Nigeria. The implication is that a one percent (1%) increase in Foreign Portfolio Investment (FPI) would lead to a 687% decrease in Industrial Growth (INDG). This finding agrees with the findings of [Abubakar \(2019\)](#); [Ekwunife & Ikeora \(2019\)](#), but is contrary to the findings of [Adekunle & Sulaimon \(2018\)](#); [Abubakar \(2017\)](#).

## 4 Conclusion and Recommendations

### *Conclusion*

The study examined the relationship between external financing and investment in firms in Nigeria. To achieve the main objective of the study, investment in firms which is the dependent variable was proxy with Industrial Growth (INDG) while the external financing as the independent variable was measure with External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA) and Foreign Portfolio Investment (FPI). This study made use of an Ex-post facto research design; this is because the data for the study has to do with events that have already taken place which cannot be manipulated by the researcher. The method of data collection used in this study was the secondary source of data (time series data), from the CBN statistical bulletin and Annual Report for the period 1990-2019. The stationary and normality tests will be carried out to ascertain the set data will give accurate regression results since the data for the study are annual time series data. The study adopted several techniques of data analysis such as descriptive statistics, correlation, and multiple regression tool of analysis with the aid of E-VIEW 9.0 statistical package was used to analyze the data because this technique was used to establish the kind of relationship that exists between the independent variables and the dependent variable used in the study. The findings revealed that External Debt Stock (EDS), Foreign Direct Investment (FDI), Official Development Assistance (ODA) has a significant effect on Industrial Growth (INDG) in Nigeria while Foreign Portfolio Investment (FPI) does not have a significant effect on Industrial Growth (INDG) in Nigeria. Thus, the study concluded that external financing significant influence on investment in firms in Nigeria.

### *Recommendations*

The study, therefore, recommends that the channels of full implementation of external financing need to be pursued vigorously through government institutions to ensure that funds meant for investment in infrastructures and firms are not diverted to other uses. Given the huge capital intensity in an industrial setup, the government needs to seek for capable investors to collaborate in various industrial activities in line with the institutional framework. There is a need for government to create awareness and educate Nigerians in the Diaspora on the need to invest in industries in Nigeria instead of consumption needs for households.

### *Contribution to knowledge*

There is no study in Nigeria and beyond that has examined the relationship between external financing and investment in firms in Nigeria, rather all the previous studies are geared toward economic growth and industrial growth, thus, this study will contribute to knowledge by helping to fill this literature gap.

### *Conflict of interest statement*

The author declared that he have no competing interests.

### *Statement of authorship*

The author have a responsibility for the conception and design of the study. The author have approved the final article.

### *Acknowledgments*

I am grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

## References

- Abokyi, E., Appiah-Konadu, P., Abokyi, F., & Oteng-Abayie, E. F. (2019). Industrial growth and emissions of CO<sub>2</sub> in Ghana: The role of financial development and fossil fuel consumption. *Energy Reports*, 5, 1339-1353. <https://doi.org/10.1016/j.egy.2019.09.002>
- Abubakar, S. U. L. E. (2017). External Financing and Industrialization in Nigeria (1985-2016).
- Abubakar, S. U. L. E. (2019). External Financing and Industrial Growth in Nigeria. *Global Journal of Social Sciences Studies*, 6(1), 180-193.
- Adejugbe, M. A. (Ed.). (2004). *Industrialization, Urbanization and Development in Nigeria: 1950-99*. Concept Publications.
- Adekunle, W., & Sulaimon, M. (2018). A re-examination of the relationship between foreign capital flows and economic Growth in Nigeria.
- Aggarwal, R. (2017). Different avenues of capital market (secondary market) available for investing in market of yamuna nagar. *International research journal of management, IT and social sciences*, 4(3), 34-50.
- Aggarwal, R., Kearney, C., & Lucey, B. (2012). Gravity and culture in foreign portfolio investment. *Journal of Banking & Finance*, 36(2), 525-538. <https://doi.org/10.1016/j.jbankfin.2011.08.007>
- Alyoubi, A. A. (2015). E-commerce in developing countries and how to develop them during the introduction of modern systems. *Procedia Computer Science*, 65, 479-483.
- Bartholdy, J., & Mateus, C. (2008). Financing of SME's: an asset side story. Available at SSRN 1098347.
- Chae, J., Kim, S., & Lee, E. J. (2009). How corporate governance affects payout policy under agency problems and external financing constraints. *Journal of Banking & Finance*, 33(11), 2093-2101. <https://doi.org/10.1016/j.jbankfin.2009.05.003>
- Clague, C., Keefer, P., Knack, S., & Olson, M. (1999). Contract-intensive money: contract enforcement, property rights, and economic performance. *Journal of economic growth*, 4(2), 185-211.
- Colombo, M. G., & Grilli, L. (2005). Start-up size: The role of external financing. *Economics Letters*, 88(2), 243-250. <https://doi.org/10.1016/j.econlet.2005.02.018>
- Dahiya, M., & Chaudhary, B. (2016). Salaried strata investment behavior towards financial products-review and prospects for future research. *International Research Journal of Management, IT and Social Sciences*, 3(7), 15-26.
- Daskalakis, N., & Psillaki, M. (2008). Do country or firm factors explain capital structure? Evidence from SMEs in France and Greece. *Applied financial economics*, 18(2), 87-97.
- Drine, I., & Nabi, M. S. (2010). Public external debt, informality and production efficiency in developing countries. *Economic Modelling*, 27(2), 487-495. <https://doi.org/10.1016/j.econmod.2009.10.014>
- Ekwunife, I. J., & Ikeora, J. J. E. (2019). External Financing and Economic Growth in Nigeria: 1986-2017.
- Kaldor, N. (1966). *Causes of the slow rate of economic growth of the United Kingdom: an inaugural lecture*. Cambridge University Press.
- Kohtamäki, M., Partanen, J., Parida, V., & Wincent, J. (2013). Non-linear relationship between industrial service offering and sales growth: The moderating role of network capabilities. *Industrial Marketing Management*, 42(8), 1374-1385. <https://doi.org/10.1016/j.indmarman.2013.07.018>
- Mac an Bhaird, C., & Lucey, B. (2010). Determinants of capital structure in Irish SMEs. *Small business economics*, 35(3), 357-375.
- Mac an Bhaird, C., & Lucey, B. (2011). An empirical investigation of the financial growth lifecycle. *Journal of Small Business and Enterprise Development*.
- Mielnik, O., & Goldemberg, J. (2002). Foreign direct investment and decoupling between energy and gross domestic product in developing countries. *Energy policy*, 30(2), 87-89. [https://doi.org/10.1016/S0301-4215\(01\)00080-5](https://doi.org/10.1016/S0301-4215(01)00080-5)
- Oburota, C. S., & Ifere, E. O. (2017). Manufacturing subsector and economic growth in Nigeria. *Journal of Economics, Management and Trade*, 1-9.
- Okonkwo, O. N. (2016). Foreign portfolio investment and industrial growth in Nigeria (1986-2013). *International Journal of Innovative Finance and Economics Research*, 4(3), 31-38.
- Rosenstein-Rodan, P. N. (1961). Notes on the theory of the 'big push'. In *Economic Development for Latin America* (pp. 57-81). Palgrave Macmillan, London.
- Sánchez-Vidal, J., & Martín-Ugedo, J. F. (2012). Are the implications of the financial growth cycle confirmed for Spanish SMEs?. *Journal of Business Economics and Management*, 13(4), 637-665.
- Sheng, X. S., & Sukaj, R. (2021). Identifying external debt shocks in low-and middle-income countries. *Journal of International Money and Finance*, 110, 102283. <https://doi.org/10.1016/j.jimonfin.2020.102283>

- Siddique, A., Selvanathan, E. A., & Selvanathan, S. (2015). *The impact of external debt on economic growth: Empirical evidence from highly indebted poor countries*. University of Western Australia, Economics.
- Stiglitz, J. (1998). Redefining the Role of the State. *Tenth Anniversary of MITI Research Institute*.
- Todaro, M. P., & Smith, C. S. (2011). *Economic development*. (The Pearson Series in Economics). 11th Edn., Prentice-Hall.
- Udoka, C. O., & Ogege, S. (2012). Public debt and the crisis of development in Nigeria: Econometric investigation. *Asian journal of finance and accounting*, 4(2), 231-243.
- Ugwuegbe, S. U., Okafor, I. G., & Akarogbe, C. A. (2016). Effect of external borrowing and foreign aid on economic growth in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 6(4), 155-175.
- Wall, H. J. (1995). The allocation of official development assistance. *Journal of Policy Modeling*, 17(3), 307-314.  
[https://doi.org/10.1016/0161-8938\(94\)00031-A](https://doi.org/10.1016/0161-8938(94)00031-A)
- Zetlin-Jones, A., & Shourideh, A. (2017). External financing and the role of financial frictions over the business cycle: Measurement and theory. *Journal of Monetary Economics*, 92, 1-15.  
<https://doi.org/10.1016/j.jmoneco.2017.08.001>