아태연구 제32권 제1호 (2025) https://doi.org/10.18107/japs.2025.32.1.005

Foreign Direct Investment (FDI) and its Impact on Sustainable Industrial Development in Nigeria

Anthony Isichei Monye* Jun Yeup Kim**

| 목 차 |

| 논문요약 |

The Study examined the impact of Foreign Direct Investment (FDI) on the Nigerian manufacturing sector over the period of 1990 to 2016. Secondary data were sourced from World Development Indicators for Nigeria, World Bank, Central Bank of Nigeria (CBN), and United Nations Conference for Trade and Development (UNCTAD). The Dynamic and Fully Modified Ordinary Least Squares (DOLS and FMOLS) estimation technique employed for the analysis. The empirical results within the period under review, showed that on one hand foreign direct investment (FDI), infrastructure development (INFRAD) and real interest rate (RINTR) is positively related to manufacturing sector output growth. Degree of Trade Openness (DTOP) and Real Exchange Rate (REXCR) on the other hand, was found to be and

* First Author: Deputy Director, Department of Macroeconomic Analysis, Ministry of Budget and National Planning, Abuja, Nigeria.
** Corresponding Author: Professor, Graduate School of Pan-Pacific International Studies, Kyung Hee University.

Real Exchange Rate (REXCR) on the other hand, was found to be inversely related to the manufacturing sector output growth and statistically significant in both the DOLS and FMOLS framework. Since the empirical evidence revealed that FDI is positively related manufacturing sector output growth and further clear the ambiguity of whether FDI promotes manufacturing sector output growth.

We therefore recommends that the Nigeria government need to design and implement policies not only attract better technological resources induced FDI but also to promote innovative and entrepreneurial drive among the technological active firms in Nigeria manufacturing sector. The pursuit of outward-looking strategies and policies should be strengthened depending on the comparative advantages in the manufacturing sector and as a cushion against vulnerability impacts of the exports and imports market.

▪ Key words: Manufacturing Output, Foreign Direct Investment, Infrastructure Development, Nigerian Economy, Sustainable Development

Ⅰ. Introduction

The potential contribution of Foreign Direct Investment (FDI) to economic development is now widely acknowledged. It assumed a primed importance in the wake of declining concessional aid, which has created a preference for long-term and more stable financial inflows. One of the benchmark remedy for economic underdevelopment in the economic development literature is FDI. Government authorities have been working assiduously to raise their country's economy out of economic stagnation in developing countries like Nigeria without achieving desired success. These governments in developing countries have not paid much attention on investment specifically FDI which will not only enhance employment

but will also influence positively on economic growth and development.

FDI potentially boosted the growth of a country by crowding in other investments with an overall increase in total investments, as well as hopefully creating positive "Spill-over effects" from the transfer of technology, knowledge and skills to domestic firms. It can also stimulate economic growth by spurring competition, innovation and improvements to a country's export performance. The indirect impacts of FDI on the domestic economy are the main reasons for the intense political focus on FDI in most countries, which has led to unprecedented levels of public subsidies, diplomatic efforts and promotional activities to attract investors (Mabey & McNally 1998).

FDI does have some potential negative impacts, the most potent being anti-competitive and restrictive business practices by foreign affiliates, tax avoidances, and abusive transfer pricing. Volatile investment flows and related payments may be deleterious to balance of payments, while some FDI is seen as transferring pollution activities and technologies. Moreover, there is often fear that FDI may have excessive influence on economic affairs, with possible negative effects on industrial development and national security. The intensity of concerns about these types of impact is diminishing. FDI has grown dramatically and is now the largest and most stable source of private capital for developing countries and economies in transition, accounting for nearly 50% of all those flows in 2002 (Ogunkola et al. 2010).

During the last 20 years, most developing countries compete to attract Foreign Direct Investment in the manufacturing sector due to the inherent advantage as a viable tool for economic growth. Nigeria in particular and Africa in general joined other countries across the world to seek FDI as witnessed in the formation of the New Partnership for African's Development (NEPAD) and the signing of Economic Partnership Agreement, between the European Union and African countries, which

possess the appeal of FDI to the continent as major component. Economic theory has identified various channels which FDI inflow maybe profitable to the host country. Unfortunately, most empirical studies have lagged behind and have been unable to locate these advantages in reality. Most conspicuously, a large number of applied papers have focused at the FDI-GDP growth connection, but their results have been far from conclusive. Irrespective of inadequate robust conclusions, and somewhat astonishingly, most countries continue to vigorously pursue policies geared at encouraging more FDI inflows.

If foreign direct investment matters, what then is the impact on the Nigerian manufacturing sector? The objective of the study is to investigates the impact of FDI on the Nigerian manufacturing sector for sustainable development. The motivation of this paper is twofold. First, is the unclear relationship between foreign direct investment and Nigerian manufacturing sector output. Second, few studies on the relationship between FDI and Nigeria manufacturing sector output.

The rest of the paper is structured as follows: Section 2 presents a review of empirical literatures. Section 3 overview of Nigerian manufacturing sector. Section 4 describes the data and methodological framework. Section 5 presents the empirical results and discussions, and Section 6 concludes.

Ⅱ. Literature Review

The contribution of Foreign Direct Investment (FDI) cannot be overemphasised and it has generated a lot of heated debate over the years. Though these debates have centred on all economies. Furthermore, there have been a huge focus and concentration into the study of FDI since it is seen to have a great effect on the economy. A great number

of academicians have X-rayed the causes of the prevailing relationship between FDI and its impact to the growth of the economy. The advocates of foreign direct investment, for instance scholars [e.g. Carkovic & Levine (2002); Markussen & Venables (2002); Bengoa & Sanchez-Robles (2003)] and development institutions (e.g. World Bank, IMF and OECD), policy makers and economists have argued vehemently that FDI engenders the efficient allocation of resources when compared with other avenues of capital inflows. Several studies such as Zhang (2006), and Olofsdotter (1998) supported the notion that FDI inflows have a positive contribution on the economic growth of host countries but other literatures think otherwise. Most remarkably, a large chunk of empirical works has looked at the FDI-GDP nexus, but their results have been inconclusive, although not enough studies have been carried out on the question of ensuing correlation between them. Improved research interest on FDI emanates from the change of perspectives and attitudes among policy makers towards FDI, basically due to fear that it might lead to loss of political jurisdiction, forced local industries out of market as result of excessive competition, and if entry is biased towards extractive industry, environmental degradation could also be accelerated (hostility), to vigorously pursuing policies aimed at encouraging more and constant inflow of FDI. Akinlo (2004) affirmed that much of African apprehension towards FDI is rooted in history, ideology, and politics of post-independent period. He also opined that the existing attitudes and distress in the continent are partially attributed to the fact that policy and decision makers are not fully persuaded that the potential benefits of FDI could be absolutely realised. Most of the fears exhibited by Nigeria towards FDI are genuine; for instance, there is reliable confirmation that the activities of the foreign oil companies have adverse impacts on the environment of the host communities (Ekpo 2003).

Foreign Direct Investment (FDI) over the years has been viewed by

the developing countries as ‘parasitic’ and deaccelerating the development of domestic industries for export promotion. Nonetheless, Bende-Nabende and Ford (1998) affirm that the wide externalities in respect of technology transfer, the development of human capital, and opening of the economy to international forces, amongst other factors, have served to change the former image. The enormous growth witnessed by most developing countries via foreign trade and FDI within the last couple of decades have engendered further encompassing research on the activity of Transnational Corporations (TNCs) and main determinants of FDI inflow particularly in the developing countries. The initial explanations of FDI were predicated on models propounded by Heckscher-Olin (1933), MacDougall (1958), and Kemp (1964), also known as the MacDougall-Kemp model, according to which FDI is inspired by higher profitability in foreign markets enjoying improved growth, lower labour cost and lower exchange risks. Caves (1971) affirm, that the rational for improved vigorous effort to attract FDI emanates from the belief that FDI possesses several significant effect, namely: productivity gains, technology transfers, new innovations, managerial skills and technical known-how in the domestic market, employee training/capacity building, international product networks and access to markets. FDI is assumed to complement domestic resources thereby Stimulating the productivity of domestic investment (Borensztein et al. 1998; Driffield 2001). FDI increases the rate of technical progress in the host country through a “contagion effect” from the more advance technology, and management practices applied by foreign firms. Consequently, Bouoiyour (2003) carried out an investigation on the determinants of FDI over the period spanning 40 years (1960-2000) using time series data. The result showed that labour cost, human resources and infrastructure of the economy were germane factors responsible for FDI inflow in that country. Furthermore, the result revealed there is a positive relationship between FDI and

variables, such as real exchange rate, inflation rate, the market size proxy by GDP and trade performance.

Notably, Blomstrom and Sjoholm (1999) opine that despite the fact that FDI apply positive impacts on growth there seems to be a threshold level of income above which FDI has positive effect on economic growth and below which it does not. This implies that only those countries that have attained a certain development and income level could possess the capacity to absorb new technologies, and benefit from the technology diffusion and hence gain the added advantage that FDI can offer. Previous works such as that of Onodugo, Kalu, and Anowor (2013) suggest human capital as one of the reasons for the differential response to FDI at various levels of development and income. This is due to the fact that it takes a properly educated population to understand, internalise and disseminate the benefits of new technology to the whole world. De Gregorio (2003), in his contribution to the debate on the importance of FDI, observe that it may allow a country to acquire technologies and knowledge that are not readily available to domestic investors, and this manner increase the productivity growth in the entire economy. FDI could also bring in technical known-how or expertise that the host country does not possess, and foreign investors may have access to international market. Emphatically, he found that increasing aggregate investment by 1 percentage point of GDP increased the economic growth of Latin American countries by 0.1% to 0.2% annually, however, increasing FDI by the same margin increased economic growth by approximately 0.06% a year during the period 1950-1985, thus showing that FDI is triple times more efficient than domestic investment. Similarly, Asiedu (2005) considered Nigeria as a country, given her natural resource base and size of market, qualifies to be a major recipient of FDI in Africa, and is indeed one of the top three leading African countries that regularly received FDI in the past decades. The amount of FDI received is not commensurate

with abundance natural resource base and the potential need. According to Akinlo (2004), postulates that the empirical linkage between FDI and the growth of the manufacturing sector in Nigeria is still unclear, in spite of the avalanche of studies that have investigated the influence of FDI on Nigeria's economic growth with varying outcomes. Nevertheless, Okejiri (2003) in his study revealed that one of the major constraint to the high productivity of the Nigerian manufacturing sector is again, the low level of technology; as advancement in technology are changing manufacturing sector of countries across the globe.

To ascertain the relationship between FDI inflow and economic growth in some East Asia economies, Marwah and Tavakoli (2004) tested the effect of FDI in Malaysia, Indonesia, Philippines, and Thailand, deploying time series data over the period 1970-1998, the result showed that FDI has positive correlation with economic growth for all four countries. In the same vein, Vu, Noy, and Gangnes (2006) studied sector-specific FDI inflows for China over the period 1985-2002 and Vietnam over the period 1990-2002. Using an augmented production function specification and regression methodology, they concluded that FDI have positive and direct effect on economic growth, as well as an indirect impact via its effect on labour productivity. They also find that the manufacturing sector seems to gain more than other sectors from the specific FDI. Tang, Selvanathan, and Saroja (2008) examined the causal link between FDI, domestic investment and economic growth in China between 1988-2003 using the multivariate Vector Auto Regression (VAR) and Error Correction Model (ECM). Their outcome showed that there is a bi-directional causality between domestic investment and economic growth, however, there is a single-directional causality between from FDI to domestic investment and economic growth. In their conclusion they opined that that there is a high level complementarity between FDI and domestic resources. Borensztein et al. (1998) notes that the interaction of FDI and human capital had

significant effect on economic growth, and suggests that the differences in the technological absorptive capacity may explain the divergence in growth effects of FDI across countries. They further opine that countries may require a minimum threshold stock of human capital in order to witness positive impacts of FDI. The explanation is that the effect of FDI varies across countries and that trade policy has the tendency to affect the role of FDI in economic growth. Asiedu (2001) posit that the determinants of FDI in one region may vary from other regions. He also averred that the determinants of FDI of countries within region may be different from one another.

The neoclassical school of thought argue that FDI affects economic growth by increasing the amount of capital per head. Consequently, due to diminishing returns to capital, it does not influence long-run economic growth. Bengoa, and Sanchez-Robles (2003) affirm that even though FDI is positively correlated with economic growth, host countries need minimum human capital, economic stability and liberalised markets in order to benefit from long-term FDI inflows. On the contrary, the endogenous school of thought postulates that FDI also influences long-run variables like research and development (R&D) and human capital (Romer 1986; Lucas 1988). Obwona (2001) found in his study of the determinants of FDI and their effect on growth in Uganda that macroeconomic, political stability and, policy consistency are important parameters determining the flow of FDI into Uganda and FDI affects growth positively but insignificantly. Ekpo (1995) in his contribution reports political regime, real income per capita, rate of inflation, world interest rate, credit rating and debt services explain the variance of FDI in Nigeria. However, for non-oil FDI Nigeria's credit rating is very vital in attracting the needed FDI into the country. Olofsdotter (1998) assert that the beneficiary effects of FDI are greater in those with a higher level of institutional capability. He therefore emphasised the significance of bureaucratic efficiency in enabling FDI effects. FDI

contributes to economic growth through technology transfer. TNCs can transfer technology either directly (internally) to their foreign owned enterprises (FOEs) or indirectly (externally) to domestically owned and controlled firms in the host country (Blomstrom et al. 2000; UNCTAD 2000). On the other hand, TNCs/MNCs can have adverse effect on the direct transfer of technology and thus reduce the spill over from the FDI in the host country in various ways. They can avail their affiliate with very little or the wrong kind of technological capabilities, or may limit access to the technology of the parent country. The transfer of technology can also be prevented if it is not consistent with the TNCs/MNCs profit maximising objective and if the cost of preventing the transfer is infinitesimal.

Ⅲ. Overview of Nigerian Manufacturing Sector

There has been a growing concern on the role of fiscal policy on the output and input of manufacturing industry in Nigeria, despite the fact that the government had embarked on several policies aimed at improving the growth of Nigerian economy through the contribution of manufacturing industry to the economy and capacity utilization of the sector. Nigeria manufacturing sector comprise of three activities – oil refining, cement production and other manufacturing. Manufacturing sector refers to those industries which are involved in the manufacturing and processing of items and indulge in either creation of new commodities or in value addition. United Nations has characterised manufacturing as the mechanical or chemical transformation of inorganic or organic substance into new products whether the work is done in a factory or the workers home and whether the products are sold at wholesale or retail

(Akintola-Arikawe 1984). After witnessing a boom between the mid-1970 and early 1980s, especially the peak of 1982, the Nigerian manufacturing sector has experienced a lull, and for the most part a total decline. This is mostly unconnected with the collapse of the global oil market and the attendant falling prices. Government revenue and exchange earnings were drastically affected in the wake of the price crisis, forcing government to adopt stringent austerity measures. Several factors have contributed to the variation in the sector share over time, many of which show both the vulnerability of manufacturing to global economic pressures, as well as the impacts that policy changes can exert in reshaping the sector.

The manufacturing sector is increasingly important to Nigeria's economy, as the government make frantic effort to expand the non-oil sector, to reduce its dependence on the oil and gas sector. The non-oil sector as a whole grew by 9.6% in 2007. The Manufacturing sector accounted for 4.02% of GDP in 2007, up from 3.91% in 2006, registering growth as percentage of GDP of 9.16%, as compared to 9.39% recorded in 2006. But with manufacturing capacity utilization at merely 53.5% in 2007, essentially unchanged from 53.5% as at the end of 2006, indicating that there is a great room for improvement. Looking at the manufacturing sector share in the GDP in recent years (1990-2010), it has not been relatively stable. In 1990, it was about 5.5% while it drops to 2.22% in 2010. Also at the same period, the overall manufacturing capacity utilization grew from 40.3% in 1990 to 58.92% in 2010 (CBN 2010).

Prior to the boom of the 1970s manufacturing contribute approximately 10% to Nigeria's economic output. Consequently, increased revenues from oil caused the sector's relative Gross Domestic Product (GDP) share to decline; growth continued though at a very slow rate. The recession occasioned by the fall in oil prices in the early 1980s triggered policy attention to turn back to the manufacturing sector, with steel production as the prime target. Hitherto, the Nigerian Enterprises Promotion Decrees

(NEPD) of 1972 and 1977 had switched majority firm ownership from foreign to Nigerian, restricting foreign capital inflows. However, the reason is that successive Nigeria governments viewed Foreign Direct Investment (FDI) as vehicle for political and economic domination, the essence of the NEPD was to regulate rather than to encourage FDI. The NEPD 1972 limit foreign equity participation in manufacturing and commercial sectors to maximum of 60%, this was further reduced to 40% through the NEPD 1977 also known as the second indigenisation decree. Accordingly, between 1972 and 1995 official policy towards FDI was restrictive in nature. The regulatory environment discouraged foreign participation resulting in an average of flow of only 0.79% of GDP from 1973 to 1988 (Ayanwale 2007).

The adoption of Structural Adjustment Programme (SAP) in 1986 originated the process of termination of the unfavourable policies towards FDI. In 1987 import ban on imports were imposed under SAP, encouraging import substitution. Intermediary input manufacturers were able to produce competitively, leading to fewer closure of production plants. This, merged with privatization and commercialisation Act of 1988, promoted a higher degree of efficiency to be realised in manufacturing, resulting in a slight increase in the share of manufacturing economic output of 0.62% points from 1986 to 1988 (National Bureau of Statistics). The government introduce a new industrial policy in 1989 with the debt to equity conversion scheme as a component of portfolio investment. The Industrial Development Coordinating Committee (IDCC) was established in 1988 as one-stop agency facilitating and attracting foreign investment flow. It was subsequently followed by the repealing of the Nigeria Enterprises Promotion Decree (NEPD) and was replaced with the Nigerian Investment Promotion Commission (NIPC) via Decree 16 of 1995. The NIPC absorbed and supplant IDCC, as well as provided opportunity for foreign investor to establish a business in Nigeria with

100% ownership.

Consequent to the provision of vital documents, NIPC will approve the application within Fourteen (14) days (as against four weeks under the IDCC) or advise the applicant otherwise. Moreover, in congruence with the NIPC Decree, the foreign exchange (Monitoring and Miscellaneous Provision) Decree 17 of 1995 was promulgated to empower foreigners to invest in enterprise in Nigeria or in capital market instruments with foreign capital that is genuinely brought into the country. The Decree also allows the free regulation of dividends accruing from such investment or of capital in case of sale or liquidation. In 1999 the government adopted the Export Processing Zone (EPZ) scheme that allows interested persons to set up industries and business ventures within confined zone, specifically with the overarching objective of exporting goods and services produced or manufactured within the zone.

The return to democracy in 1999 in Nigeria has created the opportunity for economic renewal and an associated broader base of FDI. To reap the benefits of FDI, the government of Nigeria undertook ambitious measures with a view to improving the investment climate. the reform process was reenergized, mainly through Nigeria's home-grown poverty - reduction strategy. The National Economic Empowerment and Development Strategy (NEEDS), adopted in 2003, were meant to guide public policies until 2007. The preparation of NEEDS followed a highly participatory process associated poverty reduction strategies were developed at the states and local levels - State Economic Empowerment and Development Strategy (SEEDS) and local Economic Empowerment and Development Strategies (LEEDS). NEEDS, SEEDS, and LEEDS represents a major paradigm shift from the policies of the past. Their broad agenda of social and economic reforms was based on four key strategies to: (a) Reform the way government works in order to improve efficiency in delivering services, eliminate waste and free up resources for investment in

infrastructure and social services. (b) Make the private sector the main driver of economic growth, by turning the government into a business regulator and facilitator. (c) Implement a “social charter”, including improving security, welfare and participation, and (d) Push a “value re-orientation” by shrinking the domain of the state and hence the picture of distributable rents which have been the haven of public sector corruption and inefficiency.

There are some clear indications that FDI inflows to sectors, especially the manufacturing sector other than oil and gas are reacting positively to the various economic reforms to the investment climate carried out since 1999. Several established non-fuel-sector TNCs have recently expanded production in Nigeria. For example, Heineken invested E250 million (about $390 million) in purchasing and expanding Nigerian Breweries in 20004. The Nigerian authorities are also renewing their efforts to attract FDI to the FTZs. Between 2001 and 2007, four new zones became operational and 10 more were under construction. At present, of the nine operational zones, three are reserved for services to the oil sector. The remaining zones have so far attracted some FDI. Calabar, the most advanced zone, reported total foreign investment of about $230 million as of the end of 2005.

Ⅳ. Model Specification and Data

The main objective of this study is to examine the impact of FDI on the Nigerian manufacturing sector. The model specified is based on a priori theoretical postulations and economic theories. For this purpose, the model adapted for this study is predicated onthe endogenous growth framework of Lucas (1988). Given the likely simultaneity between FDI and the manufacturing sector output growth, Dynamic Ordinary Least

Squares (DOLS) and Fully Modified Ordinary Least Square (FMOLS) method of estimation will be employed in the study, while E-view statistical package will also be used in carrying out the analysi Annual data set for the period will be source from the World Development Indicator for Nigeria (WDI), World Bank, International Monetary Fund (IMF), Central Bank of Nigeria, and United Nations Conference on Trade and Development (UNCTAD). Model of the study is specified as follows:

$$MOUPT = f(FDIMS, REXCHR, DTOP, RINTR, INFRAC, \mu t) \quad (1)$$

Where, *MOUPT*-real manufacturing value-added (million dollar) is the dependent variable, explained by five other independent variables, namely: *FDI*-Foreign direct investment into the manufacturing sector (million dollar), *EXCHRT*-real effective exchange rate (index, 2010=100), *DTOP*-Degree of trade openness to external trade (per cent), *INTR*-lending real interest rate (per cent), and INFRAD-Infrastructure development (i.e., electricity consumption, kilowatts). The last term μt- is the error term (or stochastic term). The a'priori' expectations are determined by the principles of economic theory and refer to the expected relationship between the explained variable and the explanatory variable(s). It is expected that $\beta 1$ *to* $\beta 5 > 0$.

The econometric specification for the model is:

$$lnMOUPT = \beta 0 + \beta 1 lnFDIMS + \beta 2 lnREXCHR + \beta 3 lnDTOP + \beta 4 RINTR + \beta 5 lnINFRAD + \mu t \quad (2)$$

Foreign Direct investment (FDI) represents Investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor. The proxy used for FDI is the annual FDI data in

US$. Data for this variable will be source from United Nations Conference on Trade and Development (UNCTAD). The expected sign for foreign direct investment is positive. For the purpose of this study, we expect FDI to be positively related to manufacturing output.

An exchange rate is the rate at which one currency exchanges for another. It is also regarded as the value of one country's currency in terms of another currency. The surrogate that was used for this variable is real effective exchange rate and that data will be collected from the World Bank. We expect exchange rate to have positive or negative relationship with manufacturing output.

The ratio of trade (imports and exports) to GDP is used to capture this variable as is standard in the literature. In the growth accounting literature exports have been considered as an explanatory variable. FDI inflows are expected to result in improved competitiveness of host countries exports. As exports and investment increase, they will have a multiplier effect on GDP. Increased exports and investments may also generate foreign exchange that can be used to import capital goods. Trade has been taken as one of the key variable affecting economic growth. Trade openness has been widely used with a proxy of trade to GDP ratio in the literature. We have used Trade as a percentage of GDP as a proxy for trade variable and expect this variable to have a negative sign because of high imports as compared to exports in Nigeria. The data will be taken from the World Bank.

Good infrastructure facilitates production, reduces operating costs and thereby encourages FDI (Wheeler & Moody 1992). Infrastructure enhances the productivity of investment and thereby promotes economic growth. In the literature the number of telephones per 1,000 populations is often used to measure infrastructure development. Given the availability of date we used electric power consumption as a proxy for this variable. The variable is measured as per capita electric power consumption. This

measure takes care of availability and we expect a direct relationship between this measure and manufacturing output. The data will be sourced from World Bank Development Indicator (WDI).

The interest rate is the rate which is charged or paid for the use of money or more precisely the cost of borrowing. Interest rate play significant role as input in economic growth asa positive interest rate, increases financial depth through increased volume of financial savings mobilization and by extension promotes growth through increasing the volume and productivity of capital. However, the direction of the impact could be in a reverse if the foreign investors depend on host countries capital market for raising FDI fund. The researcher has used prime lending rates because investors are lenders and borrowers and we expect the variable to have a positive sign. The data will be sourced from the World Bank.

Ⅴ. Empirical Results and Discussion

This chapter presents the time series regression results of the impact of Foreign Direct Investment (FDI) on manufacturing sector output growth in Nigeria for the period 1990-2016. The main model, manufacturing sector output growth, is designed based on the Lucas endogenous growth model. The model is adapted to examine the sources of manufacturing sector output growth and impact of FDI in particular. The Dynamic Ordinary Least Squares (DOLS) engineered by Stock and Watson (1993) and Fully Modified Ordinary Least Squares (FMOLS) techniques, originally developed by Philip and Hansen (1990) are used for the model analysis. This chapter contains the traditional unit root test, unit root test with structural breaks and their interpretations, and the DOLS and FMOLS regression results and interpretations.

Unit Root Test for Stationarity

The data series will be tested for stationarity using the Augmented Dickey Fuller and Philip-Perron test. These process examines the series characteristics of the selected variables to overcome the challenges of spurious regression often associated with time series data. However, it has become pertinent in econometric analysis to perform pre-test assessment on the time series data employed. The significance of the unit root test cannot be overemphasised because it allows to examine whether the time series data is stationary or not. Stationarity could be achieved by appropriate differencing which is referred to as order of integration.

<Table 1> Traditional Unit Root Test Result(Trend and Intercept)

Augmented Dickey Fuller Test				Philip-Perron Test			
Variables	ADF Stat	Order	Remark	Variables	ADF Stat	Order	Remark
MOUPT	-1.3707 -4.1197** -3.4793**	1(0) 1(1) 1(2)	Non-stationary Stationary Stationary	MOUPT	-0.9619 -4.3456**	1(0) 1(1)	Non-stationary Stationary
FDI	-4.2687 -5.7769* -7.8530*	1(0) 1(1) 1(2)	Non-stationary Stationary Stationary	FDI	-1.6328 -5.7312*	1(0) 1(1)	Non-stationary Stationary
DTOP	-2.5013 -7.1118* -6.6421*	1(0) 1(0) 1(2)	Non-stationary Stationary Stationary	DTOP	-2.5013 -11.5077*	1(0) 1(1)	Non-stationary Stationary
REXCR	-2.2715 -4.6660* -7.7001*	1(0) 1(0) 1(0)	Non-stationary Stationary Stationary	REXCR	-2.3741 -4.6650**	1(0) 1(0)	Non-stationary Stationary
RINTR	-5.4580** -7.8264* -5.5171	1(0) 1(1) 1(2)	Stationary Stationary Stationary	RINTR	-5.6896* -19.7364	1(0) 1(0)	Stationary Stationary
INFRAD	-2.3284 -6.0611* -6.8860*	1(0) 1(1) 1(2)	Non-stationary Stationary Stationary	INFRAD	-2.2684* -6.0611*	1(0) 1(1)	Non-stationary Stationary

▪ * and ** indicates stationary at 1% and 5% level respectively

▪ Extracted from Eview 9.5 output(Author's computation 2018)

The traditional tests of the ADF and PP showed that all the variablestend to be stationary in first difference. All the variables under observation are I (1) process, which means that they are stationary at first difference. However, traditional tests for unit-roots (e.g. ADF and PP) have low power in the presence of structural breaks, and have a tendency to "detect" non-stationarity which does not exist in the data. It is crucial to have knowledge of break point because accurately evaluating any programme intended to engender structural changes in the economy depends on it (Piehl et al. 1999). To avoid invalid inferences, the study employed unit root test with structural break to determine the break points/dates as well as further examine the properties of the time series employed. The author provides the framework for the implementation of the general structure of the structural break with unit root. The generalized test regression can be expressed as:

$$y_t = \mu + \theta DU_t + \beta_t + \gamma DT_t^* + \delta D(T_1)_t + \alpha y_{t-1} + \sum_{i=1}^{k} c_i \Delta y_{t-1} + e_t ; e_t \square iid.(0, \sigma_e^2 \qquad (3)$$

Where $DU_t = 1$; $DT_t^* = t - T_1 = t - T_1$ if $t > T_1$ and 0 otherwise; The T_1 represents the significant break point. The test considered is the minimal value of the t-statistic for testing that $a = 1$ versus the alternative hypothesis that $|a| < 1$ over all possible break dates in some pre-specified range for the break fraction (ε, $1 - \varepsilon$). The implementation of the test regression follows the Innovational Outlier (IO) framework as it allows the change to the new trend function to be gradual rather than being instantaneous as assumed by the Additive Outlier (AO) framework. The results of unit root tests with structural break are presented in <Table 2> below:

<Table 2> Unit Test Result with Structural Break

Innovative Outlier Model				Additive Outlier Model			
Variables	ADF Stat	Break date	Lag	Variables	t-Statistics	Break date	Lag
MOUPT	-4.515206	2010	1	MOUPT	-3.861085	2001	6
FDI	-6.728285*	2007	6	FDI	-5.634349*	2005	5
DTOP	-3.973669	1996	0	DTOP	-5.206305*	2004	5
REXCR	-6.688727*	2002	3	REXCR	-6.151829*	2002	4
RINTR	-6.273653*	1995	0	RINTR	-7.093656*	1997	0
INFRAD	-3.401782	2011	5	INFRAD	-4.357549	2002	0
ΔMOUPT	-6.722207*	2012	0	ΔMOUPT	6.709011*	2011	1
ΔFDI	-6.779015*	2008	0	ΔFDI	-7.988386*	2009	0
ΔDTOP	-7.600848*	1999	0	ΔDTOP	-8.212637*	1994	0
ΔREXCR	-15.278864*	2006	6	ΔREXCR	-8.819061*	1999	0
ΔRINTR	-8.279854*	1995	0	ΔRINTR	-8.946362*	1995	0
ΔINFRAD	-6.932804*	2002	0	ΔINFRAD	-7.617622*	2002	0

▪ * indicate significance at 1% level

▪ Extracted from Eview 9.5 output (Author's computation 2018)

In <table 2>, the null hypothesis of a unit root is accepted for MOUPT, DTOP and INFRAD in both the innovative and additive outlier model. In the area of first difference, thus, all the variables tend to be stationary. The stationary variables were then deployed for the linear regression analysis. Next, the study presents the estimated regression results from the DOLS and FMOLS.

<Table 3> Regression Results

Dependent Variable: LOGMOUPT						
DOLS Estimate				FMOLS Estimate		
Variables	Coefficient	t-Statistic	P-value	Coefficient	t-Statistic	P-value
LOGFDI	0.349625**	3.12577	0.0522	0.200117**	1.896483	0.0724
LOGDTOP	-0.934805	-5835148	0.0100	-0.730890***	-5.401321	0.0000
LOGREXCR	-0.292232**	-1.905643	0.1528	-0.012891	-0.160187	0.8743
RINTR	0.010071**	3.108496	0.0529	0.003744**	2.111617	0.0475
LOGINFRAD	0.236790**	0.521902	0.6378	0.742440***	1.986631	0.0608
C	10.90544	4.830047	0.0169	7.613313	4.531776	0.0002
R2	0.997186			0.896052		
Adjusted R2	0.978425			0.870065		
SER	0.074057			0.188000		
Long-run Vaiance	0.002293			0.023908		

▪ ** and *** denote significant at 5% and 10% level respectively
▪ Extracted from Eview 9.5 output (Author's computation 2018)

The coefficient of Foreign Direct Investment (FDI) in <Table 3> which is the main explanatory variable shows is positively related to the manufacturing output growth in both the DOLS and FMOLS framework. Thus, holding other variables constant, a percentage increase in FDI will on the average increase local manufacturing output (MOUPT) by 0.349625 units and 0.200117 units in both DOLS and FMOLS estimates respectively. The outcome is in conformity with our apriori expectation and theoretical predictions, it also confirms the research findings of Kowalski (2000) that FDI is a stimulator in economic growth, particularly in the manufacturing sector in under developed countries. The implication of this result is that Nigeria should pursue FDI encouraging policies

vigorously to enhance the capacity of the manufacturing sector.

The coefficient of Degree of Trade Openness (DTOP) shows a negative relationship with MOUPT in both frameworks. Consequently, a rise in DTOP exerts a negative impact on the MOUPT. This means that 1% increase in the degree of trade openness will lead to -0.934805 units decrease in the MOUPT. This indicates that the rate of DTOP decreases the level of growth in the manufacturing sector, in essence trade openness is not good for the manufacturing sector. This negates the liberalisation policy undertaken during the structural adjustment era and the and its subsequent post SAP consolidation. The magnitude of trade openness coefficient shows its influence in the sector during the period under review. The result is in conformity with our a priori expectation and theoretical predictions and also confirms the research findings of Berg and Krueger (2003) that the coefficients associated with trade openness and manufacturing output growth is ambiguous, weak, contradictory and inconclusive. It also confirms the research finding of Huchet-Bourdon et al. (2010) that there is nonlinearity between trade openness and manufacturing sector output growth. It also further confirms the research findings of (Harrison 1996; Levine & Renelt 1992; O'Rourke 2000; Rodriguez & Rodrick 1999).

In real exchange rate (REXCR), the coefficient is significantly negatively related to the manufacturing output (MOUPT) in both the DOLS and FMOLS framework. This indicates that 1% increase in the REXCR will lead to decrease of -0.292232 units and -0.012891 units in the manufacturing sector output. This implies that increase in exchange rate decreases the level of MOUPT in the economy through FDI. The exchange volatility is a key determinant of FDI inflow in Nigeria. When the domestic currency depreciates, there can be positive or negative effects on FDI inflows. On the other hand, a real depreciation of the host country currency may reduce FDI inflows into the country because a lower level of exchange rate measured in units of foreign currency per

domestic currency maybe associated with lower expectations of future profitability in terms of the currency of the source country Campa (1993). In some instances, a depreciation of currency of the host country increases the relative wealth of foreign entrepreneurs and therefore may increase the attractiveness of the host country for FDI inflow (Benassy et al. 2000; Cleeve 2004). It is true that exchange rate appreciates with FDI inflow and resources outflow. Benassy et al. (2000) argue that a depreciation of the host country currency makes, local assets and production costs comparatively cheaper, and on the contrary, imports more expensive, therefore leading to higher inflows of FDI.

The outcome is in conformity with our apriori expectations and economic postulation, it also lay credence to the research finding of Rodriguez and Guillermos (1995), Rogers and Wang (1995), and Opaoluwa, Umeh and Ameh (2010) that fluctuations in exchange rate adversely affect output of the manufacturing sector. The implication of this result is that Nigerian manufacturing is highly dependent on import of inputs and capital goods. These are paid for in foreign exchange whose rate of exchange is highly volatile. Thus, this apparent fluctuation is bound to adversely affect activities in the sector that is dependent on external sources for its productive inputs.

The coefficient of real interest rate (RINTR) is significantly positively related to the manufacturing output growth in both the DOLS and FMOLS framework respectively. Thus, 1% decrease in RINTR will lead to marginal increase of 0.01 units and 0.003 units (DOLS & FMOLS) in the manufacturing output. Thus, a decrease in the spread {due to decrease in the lending rate} is favourable to the performance of the manufacturing sector output as it encourages accessibility to credit from financial institutions. This outcome is in line with theories and previous studies that real interest rate in the host country which capture the host country's return on investment, serves as an attracting factor for FDI

Gross and Trevino (1996). The result is in conformity with our apriori expectation and confirms the research findings by Singhania, (2011) and Chakrabarti (2001).

Infrastructure Development (INFRAD) coefficient is positively related to the manufacturing output growth (MOUPT) in both the DOLS and FMOLS. Consequently, a rise in infrastructure development exerts a positive impact on manufacturing sector output growth. Specifically, 1% increase in infrastructure development is associated with 0.236790 units increase in the manufacturing output growth in the DOLS framework. The coefficient is statistically significant in the FMOLS framework. The research finding is consistent with our aprior expectation and the study of Otepola (2002), as well as Wheelerand Mody (1992) and Loree and Guisinger (1995) which showed a strong positive correlation between FDI and infrastructure quality despite each using a different proxy. The implication of this result is that countries with higher levels of agglomeration are more likely to attract FDI since better quality infrastructure would allow MNCs to operate at their optimal level of efficiency.

The goodness of fit of the DOLS estimate is adequate. About 99% systematic variation in the manufacturing sector output (MOUPT) is explained by the explanatory variables, only 1% is left unexplained and it is assumed to be captured by the error term (μ). While in the FMOLS estimate, the explanatory variables employed in the model account for 89% of the systematic variations in the manufacturing sector output growth, while the remaining 11% is unexplained is assumed to be captured by the error term.

Ⅵ. Conclusions and Recommendations

Several studies provide evidence of the existence of the impact of

foreign direct investment on the Nigeria manufacturing sector output growth, suggesting that FDI can act as a vehicle through which new skills, technologies, technical know-how and working practices can be transferred to domestic firms via the manufacturing sector.

This study has added a fresh knowledge into the protracted issue of FDI and the manufacturing sector output in Nigeria. From our findings it is obvious that FDI impacted positively on the manufacturing sector within the period under review. However, the heavily dependence on FDI may be detrimental to fiscal sustainability and economic growth under the Prebisch - Singer law of decline in the terms of trade. Nigeria exports mainly primary products, which prices are unstable and determined on the international market. For outward-oriented strategy to have much larger impact on economic growth, the country should modify the composition of trade by switching from exports of raw materials and semi-manufactured goods to high valued-added goods. Furthermore, trade policy should promote investments in capital intensive sectors and develop human capital that can absorb technologies coming from advanced countries.

The significance of the coefficient of Degree of Trade Openness (DTOP) confirms the ambiguity of whether openness promotes growth in the manufacturing sector, especially within Nigeria context. Though with the available market size in Nigeria it is expected that opening to trade will allow manufacturing firms in the sector to enjoy economies of scale with significant expansion in their scale of production to achieve growth, but this is contrary to the study result. This unhealthy relationship can be reversed if the country receives increased FDI inflows into the critical sectors that supports the necessary inputs and raw materials needed by the local industries.

The empirical results indicated that there is a positive relationship between infrastructure development (INFRAD) and manufacturing sector

output (MOUPT). The outcome is consistent with result of previous studies, suggesting that this factor will encourage FDI inflows. One way to improve the business environment is by conscious provision of necessary infrastructure, which lower the cost of doing business in Nigeria. The findings showed that the privatization of National Electric Power Authority (NEPA) now known as Power Holding Company of Nigeria (PHCN) maybe a step in the right direction if there is a further improvement in the service provided. This will enable the manufacturing FDI to contribute to economic growth.

The result depicts a positive relationship between real interest rate and manufacturing sector output. Interest rates influence economic activity in the economy. Higher interest rate discourages borrowing and encourage savings. Therefore, in countries with high interest rates, consumption and investment tends to be lower compared to nations with low interest rates. The implication of this result is that low interest rates will increase the demand for domestic manufactured goods in the country.

We therefore conclude that competitive policies should be enacted by the government to attract well targeted foreign investors in Nigeria, particularly in the manufacturing sector.

Despite the promising results, this study suffers from some limitations. First, the empirical analysis has been conducted using FDI in the manufacturing sector at the aggregate level. An area of fruitful future research would be to analyse the FDI composition in terms of goods and its impact on manufacturing sector output growth. Such an analysis provides useful information about what underpins the positive impact of FDI on manufacturing sector output growth. Second, the estimation method used here may be subject to the problem of potential omitted variable bias and endogeneity of some regressors. Therefore, another useful extension of this research would be to include other relevant variables in a system of equations where FDI and manufacturing output

are also determined by other economic variables. This helps disentangle the channels through which FDI affects manufacturing sector output growth. This is a challenging task as the collection of relevant information is time consuming and researchers are constrained by the availability of reliable data sources, and this is the case for variables measuring labour costs.

Recommendation

Consequently, we used rigorous analysis to prove that FDI have a significant bearing on the magnitude of manufacturing sector output growth in Nigeria. Premised on this, it is therefore recommended that the Nigeria government design and implement policies that not only attract better technological resources induced FDI but also to promote innovative and entrepreneurial drive among the technological active firms in Nigeria manufacturing sector.

There is also the need for the government to ensure stable macroeconomic policies as a stabilization tools to propel the attraction of more FDI inflow into the manufacturing sector. Policy consistency, investment and political stability are also pertinent in attracting and retaining FDI in the country.

There may be need to further liberalise the power sector by encouraging independent power supply providers. The government should encourage and support this idea to complement the efforts of the Power Holding Company of Nigeria (PHCN), whose inability is apparent in constant power failures and the attendant high costs of providing electricity.

The negative impact of DTOP on manufacturing sector output as shown in the results of this analysis indicates the need to introduce mild openness to allow the inflow of FDI that have capacity to transfer knowledge to the domestic entrepreneurs. Government should focus on the catch up strategy by establishing a national innovation system which includes proper education, finance and industrial policy, which could

promote mild trade openness and enhancing domestic absorptive capability, thereby increasing productivity of the manufacturing sector output. Government should increase its expenditure in the area of infrastructural development as ways to accelerate growth of the Nigeria economy in general and the manufacturing sector output in particular.

While advocating for mild trade open policies, we join Rodrik (2001) in stressing that '.... no country has developed simply by opening up itself to foreign trade and investment'. What is required, therefore is the provision of a conducive macroeconomic environment that combines the opportunity offered by trade openness to stimulate domestic productivity. Thus, dependency on foreign direct investment should remain limited.

Government should vigorously pursue policies aimed at stabilising exchange rate movements in order to achieve an investment friendly-climate. Such policies must include economic diversifications into sectors like agriculture, solid minerals, tourisms as well as de-emphasise outflows of foreign exchange, such as the improvement of the health and educational institutions. Also, government should consolidate on the gains of the financial sector liberalisation through policies that support enhanced credit delivery to the private sector in order to promote manufacturing sector output growth.

| References |

Akinlo, Anthony Enisan (2004). "Foreign Direct Investment in Nigeria: An Empirical Investigation." *Journal of Policy Modelling*. Vol. 26. No. 5, pp. 627-639.

Akintola-Arikawe, J. O. (1984). *Manufacturing and Direct Public Policy in South-Western Nigeria: 1956-1971 (a spatio-temporal analysis).* Ibadan: Nigerian Inst. of Social and Economic Research.

Asiedu, Ellizabeth (2001). "On the Determinant of Foreign Direct Investment to Developing Countries: is Africa Different." *World Development.* Vol. 30. No. 1, pp. 107-119.

Asiedu, Elizabeth (2005). "Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institution and Political Instability." *UNU/WIDER Research Paper.* No. 2005/24, pp. 1-18.

Ayanwale, B. Adeolu (2007). "FDI and Economic Growth: Evidence from Nigeria." *Africa Economic Research Consortium (AERC) Paper.* No. 165, pp. 1-49.

Agnes, Benassy-Quere, Lionel Fontagne, Amina Lahreche-Revil (2000). "MENA countries in the competition for FDI: designing an exchange rate strategy." International Seminar GDR-EMMA, commissasriat du Plan, Paris.

Bende-Nabende, Anthony, Ford L. James, Slater R. Jim and Sen, Somnath (1994). "Foreign Direct Investment in East Asia: Trends and Determinants." *Asia Pacific Journal of Economics and Business*. Vol. 6. No. 1, pp. 4-25.

Bengoa-Calvo, Marta and Blanca Sanchez-Robles (2003). "Foreign Direct Investment, Economic Freedom and Growth: New Evidence from Latin America." *European Journal of Political Economy*. Vol. 19. No. 3, pp. 529-545,

Berg, Andrew and Anne O. Krueger (2003). "Trade, Growth and Poverty: A Selective Survey." *IMF Working Paper.* No. 03/30, pp. 1-51.

Bouoyiour, Jamal (2003). "The Determining Factors of Foreign Direct Investment in Morocco." *MPRA Paper*. No. 37326, pp. 1-19.

Blomstrom, Magnus, Dennis, Konan and Robert E. Lipsey (2000). "FDI in the Restructuring of Japanese Economy." *National Bureau of Economic Research (NBER) Working Paper*. No. 7693, pp. 1-33.

Blomstrom, Magnus and Fredrik, Sjoholm (1999). “Technological Transfer and Spillovers: Does Local Participation of Multinational Matter?” *European Economic Review.* No. 43, pp. 915-923.

Borenszteina, E. (1998). “How Does Foreign Direct Investment Affect Economic Growth.” *Journal International Economics*. Vol. 45. No. 1, pp. 115-135.

Campa, Jose Emmanuel (1993). “Entry by Foreign Firms in the United States Under Exchange-Rate Uncertainity.” *Review of Economics and Statistics*. Vol. 75. No. 4, pp. 614-622.

Cleeve, Emmanuel (2004). “How effective are fiscal incentives to attract FDI to sun-Saharan Africa.” Paper Presented at the IAABD 5th International Conference Atlanta.

Carkovic, Maria and Ross, Levine (2002). “Does Foreign Direct Investment Accelerate Economic Growth?” *University of Minnesota Working Paper*, pp. 195-220.

Caves, Richard. E. (1971). “International Corporations: The Industrial Economics of Foreign Investment.” *Economica*. Vol. 38. No. 149, pp. 1-27.

Central Bank of Nigeria (CBN) (2010). Central Bank of Nigeria Statistical Bulletin, Abuja.

Chakrabarti, Avik (2001). “The Determinants of Foreign Direct Investments: Sensitivity Analyses of Cross-country Regressions.” *Kyklos*. Vol. 54. No. 1, pp. 89-114.

De Gregorio, Jose (2003). “The Role of Foreign Direct Investment and Natural Resources in Economic Development.” *Central Bank of Chile Working Paper*. No. 196, pp. 1-26.

Driffield, Nigel (2001). “The Impact of Domestic Productivity of Inward Investment in UK.” *Manchester School*. Vol. 69. No. 1, pp. 103-119.

Ekpo H. Akpan (1995). “Openness and Economic Performance in Nigeria: A Time Series in External Trade and Economic Development in Nigeria.” Nigerian Economic Society, Ibadan.

Ekpo H. Akpan (2003). “Foreign Direct Investment in Nigeria: Evidence from Time Series Data.” *CBN Economic and Financial Review.* Vol. 35. No. 1, pp. 59-78

Harrison, Ann (1996). “Openness and Growth: A Time Series, Cross Country Analysis for Developing Countries.” *Journal of Development Economics*.

Vol. 48. No. 2, pp. 419-447.

Heckscher, Eli and Bertil Olin (1933). *Trade Location and Economic Activity and the MNE: A Search for an Eclectic Approach.* The International Allocation of Economic Activity. London: Macmillan Press.

Huchet-Bourdon, Marilyne, Chantal Le Mouël, Mariana Vijil (2010). *The Relationship between Trade Openness and Economic Growth: Some New Insights on the Openness Measurement Issue*. Rennes, France: Inra, UMR.

Kemp C. Murray (1964). *The pure theory of International Trade*. Englewood Cliffs, New Jersey: Prentice Hall.

Kowalski, Elizabeth (2000). "Determinants of Economic Growth in Asia." Research Honours Project, pp. 1-34.

Levine, Ross and Renelt David (1992). A Sensitivity of Cross-Country Growth Regressions. *American Economic Review.* Vol. 82. No. 4, pp. 942-963.

Loree W. David and Stephen E. Guisinger (1995). "Policy and Non-policy Determinants of U.S. Equity Foreign Investment." *Journal of International Business Studies* Vol. 26. No. 2, pp. 281-299.

Lucas E. Robert (1988). "On the Mechanics of Economic Development." *Journal of Monetary Economics*. No. 22, pp. 3-42.

Mabey, Nick and Richard McNally (1998). *Foreign Direct Investment and Enviro nment: From Pollution Havens to Sustainable Development.* WWF-UK. University of California.

MacDougall, G. D. A. (1958). "British and American Export: A Study Suggested by the Theory of Comparative Costs." *Economic Journal.* Vol. 61. No. 244, pp. 694-724.

Markusen R. James and Anthony J. Venables (1998). "Multinational Firms and New Trade Theory." *Journal of International Economics.* No. 46, pp. 183-203.

Marwah, Kanta and Akbar, Tavakoli (2004). "The Effects of Foreign Capital and Imports on Economic Growth: Further Evidence from Four Asian Countries (1970-1998)." *Journal of Asian Economics.* Vol. 15. No. 2, pp. 399-413.

Obwona, B. Marios (2004). "Foreign Direct Investment in Africa: In Financing Pro-Poor Growth." African Economic Research Consortium (AERC)

Senior Policy Seminar VI, Kampala, Uganda. Seminar papers. AERC, Nairobi, pp. 60-95.

Okejiri, E. (2003). "Nigeria's Imperative in the New World Trade Order." Paper Presented at the National Office for Technology Acquisition and Promotion (NOTAP). African Economic Research Consortium (AERC), Nairobi, Kenya.

Olofsdotter, Karin (1998). "Foreign Direct Investment, Country Capabilities and Economic Growth." *Weltwitschaftliches Arckive*. Vol. 134. No. 3, pp. 534-547.

Olugboyega A. Oyeranti, M. Adetunji Babatunde, E. Olawale Ogunkola and Abiodun S. Bankole (2010). "The Impact of China-Africa Investment Relations: The Case of Nigeria." *Policy Brief*. No. 8, pp. 1-7.

Onodugo, Vincent A., Kalu Ijeoma E., and Anowor, Oluchukwu F. (2013). "An Empirical Analysis of the Impact of Investment in Human Capital on Nigerian Economy." *PARIPEX-Indian Journal of Research*. Vol. 2. No .4, pp. 336-339.

Opaluwa, David, Jude C. Umeh, and Abu A. Ameh (2010). "The Effect of Exchange Rate Fluctuation on the Manufacturing Sector." *African Journal of Business Management*. Vol. 4. No. 14, pp. 2294-2298.

O'Rourke H. Kelvin (2000). "Tariffs and Growth in the Late 19th Century." *The Economic Journal*. Vol. 110. No. 463, pp. 456-483.

Otepola, Ayorinde (2002). *FDI as a Factor of Economic Growth in Nigeria*. Dakar, Senegal: African Institute for Economic Development and Planning (IDEP).

Philips, Peter and Bruce Hansen (1990). "Statistical Inference in Instrumental Varaibles Regression with 1(1) Processes." *Review of Economic Studies*. Vol. 57. No. 1, pp. 99-125.

Piehl, A. Morrison, Suzanne J. Cooper, Anthony A. Braga and David M.Kennedy (1999). "Testing for Structural Breaks in Evaluation of Programme." *NBER Working Paper*. No. 7226, pp. 1-26.

Rodriguez H., Gabriel and Guillermo Diaz Gazani (1995). "Fluctuation Macroeconomics en la Economia Peruana." *Working Paper*. Lima: Banco Central de ReservadelPeru.

Rodrik, Dani (2001). "The Global Governance of Trade as if Development Really Mattered." Background Paper for the United Nations Development Programme,

pp. 1-58.

Rodriguez, Francisco and Dani Rodrik (1999). "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence." *NBER Working Paper.* No. 7081, pp. 261-338.

Rogers, John H. and Ping Wang (1995). "Output, Inflation and Stabilization in a Small Open Economy: Evidence from Mexico." *Journal of Development Economics.* Vol. 46. No. 2, pp. 271-293.

Romer, M. Paul (1986). "Increasing Returns and Long-Run Growth." *Journal of Political Economy.* No. 94, pp. 1002-1038.

Singhania, Monica and Akshay Gupta (2011). "Determinants of Foreign Direct Investment in India." *Journal of International Trade Law and Policy.* Vol. 10. No. 1, pp. 64-82.

Stock. H. James and Mark Watson (1993). "A Simple Estimator of Cointegrating Vectors in Higher Order Integrated Systems." *Econometrica.* Vol. 61. No. 4, pp. 783-820.

Tang, Sumei, Selvanathan, Eliyathamby Anthony and Saroja Selvanathan (2008). "Foreign Direct Investment, Domestic Investment and Economic Growth in China: A Time Series Analysis." WIDER Working Paper. No. 19, pp. 1-18.

Unite Nations Conference on Trade and Development (UNCTAD) (2000). *Capital Flows and Growth in Africa.* New York: United Nations.

Vu, Tam Bang, Ilan Noy and Byron Gangnes (2006). "Is Foreign Direct Investment Good for Growth? Evidence from Sectoral Analysis of China and Vietnam." Honolulu U.S.: University of Hawaii-Hilo, pp. 1-36.

Wheeler, David and Ashoka Mody (1992). "International Investment Location Decisions: The Case of U.S. Firms." *Journal of International Economics.* Vol. 33. No. 1-2, pp. 57-76.

Zhang, Kelvin (2006). "Foreign Direct Investment and Economic Growth in China: A Panel Study for 1992-2006." USA: Illinois State University, pp. 1-18.

| 논문투고일 : 2025년 02월 26일 |
| 논문심사일 : 2025년 03월 04일 |
| 게재확정일 : 2025년 03월 14일 |

| 국문초록 |

외국인직접투자(FDI)가 나이지리아 지속 가능한 산업발전에 미치는 영향

안토니 모네
(나이지리아 기획예산부 거시경제국)
김준엽
(경희대학교 국제대학원)

본 연구에서는 1990년부터 2016년까지 나이지리아 제조업 부문에 대한 외국인 직접투자(FDI)의 영향을 조사했습니다. 2차 데이터는 나이지리아 세계개발 지표, 세계은행, 나이지리아중앙은행(CBN) 및 유엔무역개발회의(UNCTAD)에서 수집되었으며 분석에는 DOLS 및 FMOLS(Dynamic and Fully Modified Ordinary Least Squares) 추정기술이 사용되었습니다.

검토 대상 기간 동안의 실증분석 결과에 따르면 외국인 직접투자(FDI), 인프라개발(INFRAD) 및 실질이자율(RINTR)이 제조업 부문생산량 증가와 긍정적인 관련이 있는 것으로 나타났습니다. 반면, 무역개방도(DTOP)와 실질환율(REXCR)은 제조업 부문 생산량 증가와 반비례관계에 있으며 DOLS와 FMOLS 프레임워크 모두에서 통계적으로 유의미한 것으로 나타났습니다. 실증분석 결과 FDI는 제조업 부문 생산량 증가와 긍정적인 관련이 있음을 확인했습니다.

따라서 우리는 나이지리아 정부가 FDI를 유도하는 더 나은 기술자원을 유치할 뿐만 아니라 나이지리아 제조부문의 기술활동 기업들 사이에서 혁신적이고 기업가적인 추진력을 촉진하는 정책을 설계하고 시행해야 한다고 권고합니다. 제조업 부문의 비교우위와 수출입시장의 취약성 영향에 대한 완충재로서 외부 지향적인 전략과 정책의 추구를 강화해야 합니다.

▪ 주제어: 제조업 생산량, 외국인 직접 투자, 인프라 개발, 나이지이라 경제, 지속가능한 발전