

## Effect of FDI Inflows on Real Sector Economy of Nigeria

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### ABSTRACT

The study have examined the effect of sectorial FDI to economic growth of Nigeria within 34 year period spanning 1987 to 2020. FDI was disaggregated into four variables being agriculture, construction, manufacturing, and oil and gas as the independent variable. Economic growth was the dependent variable. The data were obtained from CBN statistical bulletin and Annual reports. The repression analysed using the ARDL technique. The results showed that FDI to various sector of the economy has significant long run effect on economic growth of Nigeria. Furthermore, The short run dynamic results revealed that (1) FDI to agriculture has interjecting effect with positive effect in the first lag 1 and successive negative effects in lags 2 and 4; (2) FDI to construction have a significant positive effect on economic growth; (3) FDI to manufacturing sector has negative effect on economic growth; and (4) FDI to oil and gas sector has positive effect on economic growth. The study posits that FDI inflows is a veritable driver to economic growth to developing economies like Nigeria. Among the recommendations of this study is that the government should encourage local investment into the agriculture and manufacturing to cushion the adverse impact of FDI to Nigeria growth.

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### INTRODUCTION

In most developing countries, Foreign Direct Investment (FDI) serves as a means of earning foreign reserves via investments, businesses and foreign aids from advanced countries. FDI is considered a valuable source of finance and capital formation, Technology-Transfer and know-how, as well as a viable medium for trade among countries. The Spill over effect also allows for the transfer of innovations and invention to the receiving countries, one of which Nigeria belongs. According to the requirement for accelerated growth in association with the Sustainable Development Goals is not completely clear, however, for economies to experience sustainable and inclusive development, cross-border trade is paramount (UNCTAD, 2019).

The role of Foreign Direct Investment on economic growth has been vigorously debated in the literature. Authors among academia has either described FDI as a blessing for developing countries, or as harm to domestics firm depending on the effects on GDP (Kounou, 2020). Some studies are of the view that Foreign Direct Investment (FDI) contributes positively to the growth of the economy (Adeleke,

Olowe & Fasesin, 2014; John, 2016; Ali & Hussain, 2017; Oyegoke, & Aras, 2021), while some are of the view that FDI only contributes small and it is not significant (Ugwuanyi, Efanga & Okanya, 2020; Louzi and Abadi, 2011). However, the attributes of FDI in any economy of the world cannot be over-emphasized. FDI refers to an investment made by an investor either corporate bodies or individuals in a country other than the domestic country of origin of the investor in creating business or buying an asset in the country. (John, 2016) posits that foreign direct investment is seen as a process of moving technology and capital from a nation either developed or developing countries to another nation. (Farrell, 2018) posits that foreign direct investment refers to the package of technology, capital, management, and entrepreneurship that firm uses to operate and provide goods and services in a foreign market.

In Africa, Nigeria is the third host economy for FDI, behind Egypt and Ethiopia. Some of the investing countries in Nigeria are the USA, United Kingdom, China, the Netherlands and France (UNCTAD, 2018). Nigeria FDI flows in 2017 dropped by 21% to reach

3.5 billion USD which could be as a result of political instability, lack of transparency widespread corruption and poor quality of infrastructure (UNCTAD, 2018). Recently, Nigeria has witnessed several trade policies which aim at diversifying the economy away from oil revenue. These policies are focused on improving the industrial sector, and of course, results in austerity. In 2018, the total FDI inflow to the country was around USD 1.9 billion, while in 2017, FDI inflow was around USD 3.5 billion, showing a decrease due to the consequence of the austerity measures imposed in 2018. As at the third quarter of 2019, the FDI was only 3.37% (USD 200.08 million) of the total capital inflow for the period.

Despite the dwindling inflow of the FDI to Nigeria over the years, literature was sufficed that FDI is relevance in driving the growth of the developing economies like Nigeria (Ugwuanyi, *et al*, 2020). Its significant influence on the provision of new technologies, products, management skills and competitive business environment, overtime has been a strong impetus for economic growth. Many countries of the world, especially emerging economies favor policies that encourages the inflow of FDI because of its positive spillover associated with the provision of funds and expertise that could help smaller companies to expand and increase international sales and transfer of technology thus, forming new varieties of capital input (i.e. flow of services available for production from the stock of capital goods e.g. equipment, structures, inventories etc.) that cannot be achieved through financial investments or trade in goods and services alone.

Nigeria is one of the economies with great demand for goods and services and has attracted many FDI over the years since the discovery of crude oil. According to the World Bank, from 1970 to 1979, Nigeria recorded an average ratio of FDI net inflow of about 1.579 to GDP while from 1980 to 1989, the average ratio of FDI net inflow to GDP recorded stood at 1.947. Thus, in 1994 and 1993, the country made a remarkable record of 8.28 and 6.3 respectively. Since 1993 and 1994, the record was not an issue to contend with. To the greatest dismay, from 1995 to 2010, FDI, net inflow as % of GDP in Nigeria has not gone beyond 4.0 except in 1996, 1997, 2005 and 2009 the country made a record of 4.51, 4.25, 4.44 and 5.08 respectively. World Bank research contained in global development finance 2008 shows that Thailand attracted \$9.6 billion in 2007 while Nigeria attracted just about \$6.03 billion. Also, CBN (2010) annual report also indicated that total FDI inflow into the Nigerian in 2010 was about

\$5.99 billion. The breakdown of the amount according to the report shows that FDI portion was just 12.2 percent or \$668 million. This represents a 78.1 percent drop from \$3.31 billion in 2009. In light of the above, many Nigerians are lost in guesses of the likely causes of the insignificant inflow of FDI into the country. This has been a source of worry to both policy makers and government authorities. Amidst, (Asiedu, 2005) asserted that the level of FDI attracted by Nigeria is indifferent compared with the resource based and potential need, taken into cognizance of the fact that Nigeria is the 8th ranked most populous nation and 32nd biggest economy in the world (CIA World fact book) with the endowment to do better than its counterpart South Africa as the Africa biggest economy following the statement of investment giant Morgan Stanley.

### Statement of the Problem

The Nigerian economy has long been in existence, it is as old as the nation itself. The value and quality of productive investments, especially since the early 1980s, raise concern, (Garba, 1958). As such, several governments in Nigeria have at one time or the other put forth different economic policies aimed at gaining economic independence through improved production capacity. Such policies include: Industrial Inspectorate Act 1970, National Industrial Property Act 1979, National office for technology Acquisition and Promotion (NOTAP) 1992 and so on.

In order for the government to achieve her aim of economic independence, the government thought it wise to encourage FDI into the country, although it has often been alleged that FDI brings along possible balance of payment (BOP) problem but their great potential for accelerating the pace of economic progress of developing countries (Nigeria included) cannot be over emphasized. For instance, FDI brings about capital, technological know-how and foreign exchange which this country lacks so much. However, among economists and policy makers alike, there are disagreements as to the benefit of FDI in the developing countries while some fashion attest to its developmental role others see it otherwise.

### Objectives of the Study

The main objective of the study is to examine the effect of sectoral FDI to the growth of Nigeria economy. The specific objectives are:

1. To determine the effect of Agriculture sector FDI on real gross domestic product in Nigeria.
2. To examine the effect of construction sector FDI on real gross domestic product in Nigeria.
3. To examine the effect of manufacturing sector FDI on real gross domestic product in Nigeria.

4. To examine the effect of oil and gas sector FDI on real gross domestic product in Nigeria.

## CONCEPTUAL FRAMEWORK

### Foreign Direct Investment

Foreign direct investment is an investment made by an individual or a company (investor) in a country which is not the country of origin of the investor, in the form of either establishing business or acquiring business assets in the country. FDI is the extra resource a country needs in order to achieve economic growth. It is a combination of technology, marketing, capital and management. It provides a firm with new markets, marketing channels, easy admittance to new technology, skills, product, financing and production facilities. Foreign direct investment can be defined as a foreign investment that is a part or share of GDP which grows rapidly, it is turning into the largest origin of capital moving from developed countries to developing countries.

The idea of Foreign Direct Investment is an investment that is made to acquire a lasting management interest (usually 10% of voting stock) in an enterprise and is operated in a country other than that of the investors (Macaulay, undated; Jhingan, 1998; World Bank, 1996). Two core means of doing this is through "Greenfield" investment (also called "mortar and brick" investment) or merger and acquisition (M&A), which entails the acquisition of existing interest rather than new investment.

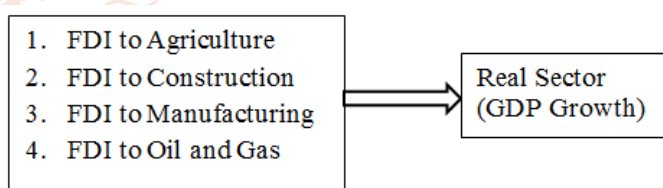
Although FDI inflows have been criticized by scholars alleging that FDI by multinational companies tend to locate production in countries or region with low wages, low taxes and weak environmental and social standards (Klein, Aaron, and Hadjimichael, 2001), these criticisms notwithstanding, arguably, the benefits of FDI outweighs the assertions of its critics. In line with this assertion, Olise, et al (2012) stated thus: "given the plausibility of the theoretically potential gains emanating from FDI, world economies, developing economies in particular, have been at logger-heads in trying to attract a significant portion of global FDI flows, hence making the market for FDI highly competitive". Macaulay (undated) also stated that many countries and continents (especially developing countries like Nigeria) now see attracting FDI as an important element in their strategy for economic development. This is most probably because FDI is seen as an amalgamation of capital, technology, marketing and management. Sub-Saharan Africa as a region now has to depend very much on FDI. For a developing country like Nigeria, the inflow of a foreign capital may be significant in not only raising the productivity of a given amount of labour, but also allowing a large labour force to be employed (Macaulay, undated).

FDI is directed to certain sectors in an economy. Multinational companies comes and establish businesses or acquire existing businesses. The business of interest is often in preferred or most viable sector. This study have targeted some select sector as the agriculture, construction, manufacturing and oil and gas as cases for this study.

### Real Sector Economy

The real sector is the productive sector. It is characterised with the activities that lead to the production of goods and services. We consider the growth rate in real output as a fundamental variable. Economic growth provides the resources to permit sustained improvements in production (Ranis and Stewart, 2000). The concept of economic growth usually refers to the increase in the inflation-adjusted market value of goods and services produced by an economy over a period of time. It is measured as the percentage rate of increase in real GDP usually in per capita terms. Growth usually is calculated in real terms i.e. inflation-adjusted terms. Economic growth also means increased growth in the level of output produced by a country over time and it crucially measures the economic performance of a country.

Foreign direct investment leads to increase in investment and advancement in technology which in turns increases productivity and efficiency in the host country. The increased productivity and efficiency results to high output production for both local consumption and export. The export of goods and services brings foreign exchange revenue to the host country which serves as an engine for economic growth.



**Figure: Conceptual linkage between Sectoral FDI distribution and real sector growth**

## THEORETICAL FRAMEWORK

The theoretical framework of this study is hinged on the Capital Market Theory and the Institutional FDI Fitness Theory.

### Capital Market Theory

The Capital Market theory which is often known as the "currency area theory" was popularised by Aliber (1970; 1971). The theory assumes that capital market imperfections that encourages foreign direct investment flows. Exchange rate of economies is the determinant of FDI flows. According to Aliber (1970; 1971), "weaker currencies have a higher FDI-attraction ability and are better able make use of the



differences in the market capitalization rate, compared to stronger country currencies". Aliber (1970; 1971), further added that source country MNCs based in hard currency areas can borrow at the rate of interest that is much lower than the host country firms because portfolio investors may not consider the foreign country MNCs currency.

This gives source country firms the easier accessibility to cheaper borrowed funds for their investment abroad and subsidiaries than what local firms would access the same funds for. While this capital market theory is applicable to developed countries including the United States, United Kingdom and Canada, other scholars saw it differently as ignoring basic currency risk management fundamentals. A major criticism of Aliber's postulation was another work by Lall (1979), when he pointed out that Aliber's theory is not applicable to the less developed countries where there is an existence of imperfect or absence of functional capital markets and to those with high foreign exchange rates regulation.

### Institutional FDI Fitness Theory

As developed by Wilhems and Witter (1998), the term FDI fitness focuses on a country's potential or resources to attracting, absorbing and retaining FDI. It is a country's ability to meet up to both the internal and external expectations of its investors, which gives countries the upper-hand in harnessing FDI inflows. The theory itself made an attempt to illustrate the meaning of uneven distribution of FDI distribution between the countries concerned.

The institutional FDI fitness theory by Wilhem's is built on these fundamentals which are; Government, size of the market, educational skills and socio-cultural fitness. First on the pyramid are socio-cultural factors which according to Wilhelms and Witter (1998) are the oldest and also most complex of all institutions. The next is education, which the authors affirm to being necessary in ensuring an attractive environment for FDI as educated human

capital enhances R&D creativity and information processing ability.

The actual level of education is not the requisite for the inflow of FDI into a given region but on the essential skills needed for the projects to be undertaken. However, educational skills may affect productivity positively, effectiveness and the efficiency of FDI operations in the country it is operating. These influences from education such as the ability to speak, hear, and understand including other educational skills are keys for attracting FDI.

The third on the pyramid is the market which accounts for a large percentage of both the economic and financial aspects of institutional FDI fitness, in the form of machinery (physical capital) and credit (financial capital). Well developed and functioning financial markets are hence a prominent feature in the MNC's investment decision-making process. The fourth and very important on the pyramid is the Government. The role of a country's political strength plays the biggest role in attracting FDI.

### EMPIRICAL REVIEW

This study have reviewed about 42 empirical studies as shown on Table 1. The study have reviewed a plethora of empirical studies ranging from studies in Nigeria and African countries including Ghana, Tunisia, Kenya, South Africa; and a few of Asia (Saudi Arabia, India ) and European economies (France, Spain). These studies produced conflicting results cutting across positive negative and no effect proponents. Moreover, the reviews showed prevalence of support for positive relationship between FDI and growth. Even at the sectorial level, it was found that FDI drives growth (Obayori, ObayoriInimino & Tubotamuno, 2016 and Osano & Koine, 2016). Despite this some of the studies averred that FDI sector distribution to areas like manufacturing and agriculture are not statistically significant but that of infrastructure is significant (Muhia, 2019).

**Table 1: Webometric review of empirical studies**

S/N	Author(S) & Years	Objective	Scope	Method Applied	Variables Studied	Research Findings
1	Giwa, George, Okodua & Aderan (2020)	FDI inflows and economic growths	Nigeria 1981-2017	Robust GMM estimate technique	<b>Dependent Variable</b> Real Gross Domestic Product (RGDP) <b>Independent Variables:</b> Labour quality, Capital intensity, FDI	Labour quality has a positive and significant effect on RGDP Capital intensity had a significant negative effect on RGDP

2	Muhia (2019)	Foreign Direct Investment and Economic Growth	Kenya 2000-2017	OLS	<b>Dependent Variable</b> GDP <b>Independent Variables</b> Gross fixed capital formation percentage of GDP, Labour force, Total FDI inflows in manufacturing sector, FDI inflows in infrastructure sector, FDI inflows in Agriculture sector	FDI in the infrastructure sector had significant positive impact on GDP Manufacturing and agriculture sectors had insignificant positive effect
3	Yasin (2019)	Foreign Direct Investment and Economic Growth	Kenya 1980-2015	ADF and Granger Causality Test	<b>Dependent Variables</b> GDP <b>Independent Variables</b> FDI inflow, Govt. Expenditure, Human Capital proxy by secondary school, universities, and colleges enrolment	infrastructure and the development of the human capacities of the foreign direct investments
4	Alabi (2019)	FDI and Economic Growth	Nigeria 1986-2017	Descriptive Analysis and OLS	<b>Dependent variables</b> GDP <b>independent variables</b> FDI, Interest Rate, Exchange Rate, Domestic Investment	FDI was positive and significant to economic growth while domestic investment was positive but insignificant
5	Bouchoucha & Ali (2019)	FDI and Economic Growth	Tunisia 1980-2015	Autoregressive lag Distribution approach (ARDL)	<b>Dependent variables</b> Annual growth rate of GDP, <b>Independent variable</b> s1. Level of FDI to GDP, Domestic investment proxied by gross fixed capital formation to GDP, Human capital across secondary school enrolment ratio, Trade openness	FDI has positive impact on economic growth in both the short and long term.
6	Ibrahim & Abdul (2019)	Determinants of FDI in Ghana: A Sectoral Analysis	Ghana 2000-2014	Ordinary Least Squares (OLS)	<b>Dependent variables</b> FDI <b>Independent variables</b> Market size (GDP), Exchange Rate, Trade Openness, Inflation, Labour Cost, Infrastructure	Market size (GDP) and labour cost have significant impact on the inflows of agriculture sector FDI.
7	Ijirshar Anjande, Fefa, & Mile,(2019)	Growth-Differential Effects of Domestic	Africa 1970-2017	Pooled mean Group (PMG) and mean Group (MG)	<b>Dependent Variable</b> Rate of change in GDP <b>Independent</b>	FDI and DI are drivers of growth in the long-run and short run

		investment and FDI in Africa		estimators	<b>Variables</b> FDI to GDP, Domestic investment to GDP (DI), Trade balance to GDP, Government spending to GDP, Exchange rate, Economic freedom (overall index 0,100) and Labour force (million persons)	
8	Mounir & Atef (2018)	domestic and Foreign direct investment on economic growth	Saudi Arabia 1970-2015	Fully Modified Ordinary Least Squares (FMOLS), Dynamic Ordinary Least Square (DOLS), and the Canonical Cointegrating Regression (CCR), Granger causality Test	<b>Dependable Variables</b> GDP Growth, Non-oil GDP growth and Domestic capital investment <b>Independent Variables</b> FDI, Non-oil GDP growth, Finance, Trade openness, Gross fixed capital formation	Negative bidirectional causality between non-oil GDP growth and FDI,
9	Elias, Onyema & Odoh (2018)	Effect of Foreign Direct investment on economic growth	Nigeria 1980-2012	OLS	<b>Dependent Variable</b> RGDP <b>Independent Variable</b> Exports, Imports, Openness, Foreign exchange , FDI	FDI has a positive relationship with RGDP
10	Khun (2018)	The impact of f Foreign Direct investment on economic growth	Cambodia 2006-2016	Ordinary Least Squares (OLS)	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI. Consumer Price Index (Inflation Rates), Foreign Exchange Rate	FDI has a positive impact on economic growth
11	Carbonell & Werner	Does FDI generate Economic Growth?	Spain 1984-2010	Cointegration	<b>Dependent Variable</b> Nominal GDP <b>Independent Variable</b> FDI inflows, Productive credit creation, bank lending, commodities index, EUR/DM exchange rate, EUR/USD exchange rate, Employed workforce, Average number of	No evidence that FDI stimulate economic growth.

					years of secondary and tertiary schooling of labour, M1, M2, Overnight interbank interest rates, Total GDP of the G7 countries Thousands of euros	
12	Abdul, Nor, AbudulMohamad & Faridah (2017)	FDI and Trade Liberalization on Economic Growth, Income Distribution and Environmental Quality	France & South Korea 1980-2014	ADF, PP and ARDL	<b>Dependent Variables</b> Real GDP per capital, Gini co-efficient, Carbon dioxide as proxy for environmental quality <b>Independent Variables</b> Total labour force, Domestic investment (Fixed capital formation to GDP), FDI inflows to GDP, Human capital (Secondary school enrolment rate), Trade openness and Financial development (M2 to GDP)	FDI inflows triggers higher growth and lower pollution level for South Korea, but have widened the income inequality in this country.  For France, FDI inflows reduced income equality but have no significant impact on growth and environmental quality.
13	Nketsiah&Quaidoo (2017)	Effect of FDI on economic growth	Ghana 1983-2012	Descriptive statistics, ADF, PP Unit Root Test and Ordinary Least Squares (OLS)	<b>Dependent Variables</b> GDP <b>Independent Variables</b> Net FDI Inflow, Trade liberalization, Government expenditure, Inflation	FDI has a Positive and significant impact on economic growth
14	Areej & Shahid (2017)	Impact of foreign direct investment on sectoral growth of Indian Economy	India 2001-2014	Panel co-integration test followed by Random effects model, Granger Causality test	<b>Dependent Variables</b> Gross output <b>Independent Variables</b> FDI inflows, Exports, GDP deflator (macro-economic stability), M2 to GDP ratio (financial stability), Gross enrolment in secondary education (human capital)	Growth has impact on FDI but FDI does not have impact on growth at the sectoral level
15	John (2016)	Effects of FDI on economic growth	Nigeria 1981-2015	OLS	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI, Exchange rates	FDI has a positive and significant effect on GDP.
16	Osano&Koine (2016)	Role of FDI on Technology Transfer and	energy sector, Kenya	Semi-structured questionnaire	<b>Dependent Variables</b> GDP <b>Independent</b>	FDI variables of infrastructure, technology

		Economic growth	2000-2014	s, Pearson correlation analysis and OLS	<b>Variables</b> Infrastructure, Technology diffusion, Facilitation of trade and access to export markets, Knowledge management	diffusion, trade facilitation, knowledge management and technology transfer has relationships with economic growth
18	Obayori, Obayori Inimi no & Tubotamuno (2016)	Sectoral inflow of FDI and economic growth	Nigeria 1986-2013	ADF test of unit root test, Johansson co-integration test	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI in manufacturing Sector, FDI in telecommunication sector, FDI in oil sector	Continuous inflow of FDI in manufacturing, telecommunication and oil sector have a robust impact on Nigeria's economic.
19	Adigun (2015)	Sectoral inflow of FDI and economic growth	Nigeria 1980-2015	Ordinary least square result (OLS)	<b>Dependent Variable</b> GDP, FDI ratio to GDP <b>Independent Variables</b> FDI in manufacturing sector,, FDI in mining sector, FDI in Transportation and communication, FDI in Agricultural sector, FDI in trading and business, Interest rate, Exchange reserve.	There is a positive relationship between GDP and FDI.
20	Adigwe, Ezeagba & Udeh (2015)	Effect of FDI on economic growth	Nigeria 2008-2013	Pearson correlation	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI, Exchange rate	There is a significant relationship between FDI, exchange rate and GDP
21	Chege (2015)	Impact of FDI on economic growth	Kenya 1984-2013	Descriptive statistics and OLS	<b>Dependent Variable</b> Growth rate of real GDP <b>Independent Variables</b> FDI, Export, Population growth rate in year T as a proxy of labour force, Inflation rate	Positive relationship between FDI and economic growth
22	Okonkwo, Egbunike & Udeh (2015)	FDI and economic growth	Nigeria 1990-2012	Ordinary least squares (OLS) estimation techniques	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI, Import, Export, Inflation, Exchange rate, Technology, Interest rate	There is a positive relationship between economic growth and Export, and FDI.



24	Awolusi & Adeyeye (2016)	impact of foreign direct investment on economic growth in Africa	Africa 1980-2013	Ordinary least squares and generalized method of moments	<b>Dependent Variable</b> Gross domestic product <b>Independent Variables</b> Human capital, International technology transfer, Labor force, FDI, Gross capital Formation	impact of FDI on economic growth in African countries is limited or negligible.
25	Aderemi, Olowo, Osisanwo, & Omoyele, (2021).	Relationship between FDI inflows and poverty reduction vis-à-vis Human Development Index	Nigeria, 1990 to 2018	ARDL and Bounds test technique	<b>Dependent Variable</b> GDP per capita <b>Independent Variables</b> FDI inflows, Gross fixed capital formation, Trade Openness, Human development index, Percentage change in the GDP deflator (inflation).	FDI inflow has negative and significant effect on economic growth
26	Oyegoke & Aras (2021)	Impact of FDI on Economic Growth	Nigeria 1970 - 2019	OLS Regression	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI inflow, FDI outflow	FDI inflow has positive and significant effect on GDP while outflow is negative but insignificant.
27	Ugwuanyi, Efanga & Okanya, (2020)	Impact of FDI on Economic development	Nigeria 1981to 2018	ARDL	<b>Dependent Variable</b> GFCF <b>Independent Variables</b> FDI, and EXR	FDI had positive but insignificant effect on GFCF
28	Asogwa & Osondu (2014)	Impact of FDI on economic growth	Nigeria: 1980Q1-2009Q4	Granger causality	<b>Dependent Variable</b> real gross domestic product (RGDP) <b>Independent Variables</b> Real gross fixed capital formation; foreign direct investment into agricultural sector; foreign direct investment into manufacturing sector; foreign direct investment into telecommunication; trade openness	FDI into agriculture, manufacturing and telecommunication sector have a unidirectional relationship with economic growth
29	Uwubanmwun & Ogiemudia (2016)	effects of FDI on economic growth	Nigeria 1979 to 2013	ECM and Granger causality	<b>Dependent Variable</b> Real GDP growth rate <b>Independent Variables</b>	FDI has both immediate and time lag effect on GDP in the short run.,

					Foreign Direct Investment growth rate, Total Debt Stock growth rate, Inflation Rate, Trade Openness, Exchange Rate, Gross Domestic Investment growth rate	and non-significant negative effect in the long run
30	Kasim (2020)	Impact of FDI on economic growth	Nigeria 1989 – 2019	ARDL	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI, Gross Domestic Investment, Interest rate	FDI has no significant effect on economic growth both in short and long run
31	Susilo (2018).	impact of FDI on Economic Growth	10 sectors United States of America 2000 – 2017	ordinary least squares (OLS).	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI in Manufacture sector, FDI in wholesale trade sector, FDI in retail trade sector, FDI in information sector, FDI in banking sector, FDI in finance sector, FDI in insurance sector, FDI in real estate, rental and leasing sector, FDI in professional, Scientific and technical service sector, and FDI in other industries sector	FDI varies in direction of relationship but has not effect on US economy.
32	Ndugbu, Otiwu, & Uzowuru (2021)	Relationship between FDI and economic growth	Nigeria 1986 to 2017	Vector Error Correction Model (VECM) and Pairwise Granger Causality test	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI, Oil related FDI, Non-oil related FDI, Market capitalization, Exchange rage, Interest rate and Trade openness	Non-oil FDI has positive and significant effect on growth.
33	Ozuzu & Isukul (2021).	effect of FDI on a developing economy	Nigeria 1985 to 2019	Johansen Co-integration test, vector error correction model and pair-wise causality tests	<b>Dependent Variable</b> RGDP <b>Independent Variables</b> FDI in Agriculture sector (FDIA), FDI in manufacturing	FDIM, FDITC, have positive and significant effects on RGDP but FDI has adverse effect.

					(FDIM), FDI in mining and quarrying (FDIMQ), FDI in oil and gas sector (FDIOG), FDI in transport and communication (FDITC).	Di-directional causality between RGDP and FDITC/FDIA
34	Udechukwu, Okafor & Anyaegbunam (2020)	FDI and economic growth	Nigeria 2008 to 2017	OLS and Granger causality	<b>Dependent Variable</b> RGDP  <b>Independent Variables</b> Exchange rate, trade openness, FDI	FDI had positive but no significant effect on RGDP  No causality between RGDP and FDI
35	Opeyemi (2020)	FDI and economic growth in Africa	Tanzania, South Africa, Nigeria, Egypt & Kenya 1996 to 2018	OLS regression	<b>Dependent Variable</b> RGDP  <b>Independent Variables</b> FDI, inflation rate	FDI has positive and significant effects in Africa
36	Canchari, Mejía & Deng (2020)	impact of Chinese FDI on economic growth of Peru	2001 to 2018	Johansen Co-integration test, VAR, Granger Causality test	<b>Dependent Variable</b> Gross Domestic Product per Capita <b>Independent Variables</b> FDI, domestic investment, and Government Consumption	FDI has positive effects
37	Adesanya & Ajala. (2019)	Impact of FDI inflow in telecom sector on economic growth	Nigeria 1985-2015	ECM	<b>Dependent Variable</b> RGDP <b>Independent Variables</b> GDP in Telecom, FDI in Telecom, Gross Capital Formation, Exchange rate, inflation rate, Trade openness, Credit facilities to private sector, Dummy for GSM	FDI has not effect
38	Adekanmbi, Adeleke & Obarafor, (2020)	Impact of FDI, inflation, exchange rate and interest rate on economic growth	Nigeria, 1986 to 2018	OLS	<b>Dependent Variable</b> RGDP <b>Independent Variables</b> FDI domestic investment, inflation, exchange rate and interest rate	FDI has positive and significant effect on RGDP
39	Nya'akunat & Ahmadu	Nexus Between FDI and	Nigeria 1986 to	ARDL	<b>Dependent Variable</b> GDP	FDI had positive and significant

	(2021)	Economic Growth	2918		<b>Independent Variables</b> FDI, exchange rate , openness, import	effect GDP at Maximum, average and minimum levels of exchange rate
40	Okwu, Oseni & Obiakor (2020)	Does FDI enhance Growth?	30 leading global economies , 1998 and 2017	Panel Least square regression	<b>Dependent Variable</b> GDP <b>Independent Variables</b> FDI, domestic credit to private sector, gross fixed capital formation, consumer prices index, trade openness and youth unemployment	FDI enhances growth
41	Osunkwo (2020)	Impact of foreign direct investment on the economic growth	Nigeria from 1980-2018	OLS Regression	<b>Dependent Variable</b> RGDP <b>Independent Variables</b> FDI, employment level	FDI has positive and significant effect on GDP
42	Abur (2020)	FDI inflow and the economic growth	Nigeria, 2007 to 2017	OLS Regression	<b>Dependent Variable</b> RGDP <b>Independent Variables</b>	FDI has positive and significant effect on GDP

### Gap in Literature

Despite the huge amount of studies in FDI and growth nexus, most of the studies did not consider sector contribution of FDI to growth. This becomes expedient as business decisions consider sector viability and risk factors in investment. More so, the proxy for real sector growth has often being measured with GDP which is rather a level figure that hardly connote growth. The most appropriate as adopted in this study is the growth rate of the GDP.

### METHODOLOGY

The study employed secondary data obtained from the CBN statistical bullion and World Development Indicator within the time period cover 34 years spanning 1987 to 2020. This period is justified by the expectation that the liberalisation era encouraged by the SAP introduction enhances flow of capital in and out of Nigeria, hence study of FDI should consider this this.

A single multiple regression model is employed to study to effect of Foreign Direct Investment (FDI) on the real sector. The FDI data was disaggregated into various sectors. Four sectors were selected to cover agricultural sector FDI, construction sector FDI, manufacturing sector FDI and oil and gas sector FDI. This various sectorial FDI is the independent variable while the dependent variable is the real Gross Domestic Product (rGDP).

The model for the study is anchored on the works of Susilo (2018). The study disaggregated FDI into sectors like Manufacturing sector, wholesale trade sector, retail trade sector, information sector, banking sector, finance sector, insurance sector, real estate, rental and leasing sector, professional, Scientific and technical service sector, and other industries sector.

The present study carved and restricted on only the essential sectors in Nigeria. The model is moderated by exchange rate. Exchange rate is the good determiner of external trade relationship in the world economy.

The functional relationship can be expressed as follows;

$$rGDP = f(FDI_a, FDI_c, FDI_m, \text{ and } FDI_{og})$$

Where:

FDI<sub>a</sub> = FDI inflow to the agricultural sector



FDI<sub>c</sub> = FDI inflow to the construction sector  
 FDI<sub>m</sub> = FDI inflow to the manufacturing sector  
 FDI<sub>og</sub> = FDI inflow to the oil and gas sector  
 rGDP = Real Gross Domestic Product

The model can be rewritten in equation form as follows:  
 $rGDP = \alpha_0 + \alpha_1 FDI_a + \alpha_2 FDI_c + \alpha_3 FDI_m + \alpha_4 FDI_{oa} +$

Where:

$\alpha_0$  = constant,  $\alpha_{1-4}$  are the coefficients for FDIs

The theoretical expectation of the relationship between FDI and real sector growth is a positive relationship. It is predicted that  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$ . This means that all the parameters of FDI sectoral variables in the model have a positive relationship with the economic growth. A unit change in either of the independent variables will bring about a proportionate change in the economic growth, *ceteris paribus*.

The multiple regression technique was used in the study. The estimated regression results are based on the Autoregressive Distributive Lag (ARDL) cointegration approach developed by Pesaran and Shin (1999) and Pesaran, Shin and Smith (2001). At first, the unit root status of the variables was checked to determine whether ARDL model is appropriate for the study. The ARDL model is preferred when the variables are integrated in both 1(0) and 1(1). Unit root normally occurs among time series data, thus, the study conducted unit root tests. The unit root analysis were done with the Augmented Dickey Fuller (Dickey & Fuller 1979). Basically, the idea is to ascertain the order of integration of the variables as to whether they are stationary I(0) or non-stationary; and, therefore, the number of times each variable has to be differenced to arrive at stationarity.

**DATA ANALYSIS AND INTERPRETATION**

The unit root test for the variables were performed using the ADF. This becomes expedient since time series data are susceptible to variations which will distort regression analysis. The result is shown on Table 1.

**Table: ADF test for stationarity of variables**

Variable	Level Coefficient (P.value)	First Diff Coefficient (P.value)	Remark
GDPR	1.224679 ( 0.9977)	-6.045502 0.0000)	1(1)
FDIagric	-2.886570 (0.0477)	-	1(0)
FDIcons	0.465977 (0.9828)	-4.959163 (0.0003)	1(1)
FDImanu	0.453988 (0.9823)	-5.297724 (0.0001)	1(1)
FDIog	0.703876 ( 0.9904)	-6.196250 (0.0000)	1(1)

The result showed that variables for GDPr, FDImanu, FDIcons and FDIog are not stationary at level. However, they become stationary at first difference 1(1). Only FDIagric become stationary at level 1(0). Thus the variables for the model has a combination of stationary at level 1(0) and first difference 1(1). This makes the Autoregressive Distributive Lag the most suitable tool for the regression analysis.

**Model Estimation**

The Bound Test was used for the long run test while the ARDL measured the short run dynamics. The Bound Test was used for the long run test while the ARDL measured the short run dynamics.

**Table 2: Cointegration Test: ARDL bound test for longrun estimation of the relationship between FDI and economic growth**

ARDL Bounds Test		
Sample: 1991 2020		
Test Statistic	Value	k
F-statistic	4.485469	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

The decision rule is that if F-Statistic < Lower bound values (I0), we fail to reject the null hypothesis (i.e. there is no long run relationship). Also, if the F-Statistic > Upper bound values (I1) we reject the null hypothesis. The

upper bound is used here to avoid the zone of indecision. In Table 2, the computed F-statistics is (4.485469), which is greater than the upper bound critical value at 5% confidence level. On the basis of this, the null hypothesis of no long run significance relationship between the independent variable(s) therefore rejected. And we infer that the variables are cointegrated. This means that there is a long run relationship between FDI to agriculture, construction, manufacturing and oil and gas sectors, and economic growth in Nigeria.

**Table 3: Short Run Relationship between FDI and Economic Growth**

Dependent Variable: GDP				
Method: ARDL				
Sample (adjusted): 1991 2020				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(-1)	0.715550	0.829277	0.862860	0.4133
GDP(-2)	-0.899691	0.390549	-2.303657	0.0502
GDP(-3)	-0.914499	0.443209	-2.063359	0.0730
GDP(-4)	-0.303809	0.123386	-2.462266	0.0392
FDIAGR	0.101300	0.129400	0.782845	0.4563
FDIAGR(-1)	0.380795	0.138082	2.757745	0.0248
FDIAGR(-2)	-0.543994	0.201451	-2.700385	0.0271
FDIAGR(-3)	0.229930	0.227873	1.009025	0.3425
FDIAGR(-4)	-0.395885	0.156745	-2.525660	0.0355
FDICONS	2.898873	0.430456	6.734425	0.0001
FDICONS(-1)	-0.646675	0.929615	-0.695637	0.5064
FDICONS(-2)	2.643312	0.976688	2.706403	0.0268
FDICONS(-3)	0.060963	0.151587	0.402168	0.6981
FDICONS(-4)	0.337723	0.115368	2.927356	0.0191
FDIMANU	-4.435761	0.681088	-6.512757	0.0002
FDIMANU(-1)	1.073473	1.401824	0.765769	0.4658
FDIMANU(-2)	-3.817359	1.512024	-2.524668	0.0355
FDIOG	2.558788	0.258443	9.900778	0.0000
FDIOG(-1)	-1.161135	1.204530	-0.963974	0.3633
FDIOG(-2)	2.110641	0.751386	2.808997	0.0229
FDIOG(-3)	0.802806	0.442523	1.814156	0.1072
C	-0.168513	0.981948	-0.171611	0.8680
R-squared	0.999958	Mean dependent var		131.4757
Adjusted R-squared	0.999849	S.D. dependent var		94.52803
S.E. of regression	1.162469	Akaike info criterion		3.283881
Sum squared resid	10.81068	Schwarz criterion		4.311426
Log likelihood	-27.25821	Hannan-Quinn criter.		3.612601
F-statistic	9131.007	Durbin-Watson stat		2.042942
Prob(F-statistic)	0.000000			

The result on Table 3 shows that short run effect of sectoral FDI on economic growth. The result can be interpreted on the following line of thought:

#### **GDPR as endogenous variable:**

The coefficient of regression for GDP<sub>t</sub> for lags 1 is positive (0.715550). This means that GDP<sub>t</sub> can have positive relationship with itself in the first year. However, for lags 2 to 4, the coefficients are negative which suggest that GDP<sub>t</sub> will have adverse effect on itself after 20 years to 4 years. All the lags have p-values greater than 0.05 level of significance. This means that GDP<sub>t</sub> do not have a significance endogenous effect on itself.

#### **Effect of FDI for Agriculture Sector**

The coefficient of regression for FDI to agriculture has five time series, from level to lag 4 periods. The coefficients are positive at level (0.101300), lag 1 (0.380795) and lag 3 (0.229930), respectively. This means that FDI to agriculture will improve economic growth in the first period, after one year and then in the third year. However, the periods of lag 2, and lag 4 showed negative effects on growth. The t-statistics revealed that p-values for lag 1, 2 and 4 are less than 0.05 level of significance. This means that DFI to agriculture have a significant effect on growth. Thus, it has positive effect in the lag 1 and then followed by negative effects in lags 2 and 4 successively.

### Effect of FDI for Construction Sector

The result of the effect of FDI to construction sector on economic growth shows positive coefficients at level (2.8988), lag 2 (2.6433), lag 3 (0.0609) and lag 4 (0.3377). The period covering lag 1 had negative effect. The t-statistics revealed that p.values for level and 4 are less than 0.05 level of significance. This means that DFI to construction have a significant effect on growth. Thus, it has positive effect on economic growth.

### Effect of FDI for Manufacturing Sector

The coefficients for level, and lag 2 showed negative effects, while those of lag 1 had positive effect. The t-statistics showed a p.value less than 0.05 level of significance in the level and lag 2 periods. This shows that FDI to manufacturing sector has negative effect on economic growth.

### Effect of FDI for Oil and Gas Sector

The coefficient of regression for lag 1 is negative (-1.161135). For other periods from level, lag 2 and lag 3 showed positive effects. The t-statistics showed a p.value less than 0.05 level of significance in the level and lag 2 periods. This shows that FDI to oil and gas sector has positive effect on economic growth.

### Summary of Findings

The study have examined the effect of sectorial FDI to agriculture, construction, manufacturing, and oil and gas to economic growth of Nigeria within 34 year period spanning 1987 to 2020. The study employed the ARDL regression technique. The results showed that:

1. FDI to various sector of the economy has significant long run effect on economic growth of Nigeria.
2. The short run dynamic results revealed that:
  - A. FDI to agriculture has interjecting effect with positive effect in the first lag 1 and successive negative effects in lags 2 and 4.
  - B. FDI to construction have a significant positive effect on economic growth.
  - C. FDI to manufacturing sector has negative effect on economic growth.
  - D. FDI to oil and gas sector has positive effect on economic growth.

### Conclusion and Recommendations

FDI inflows is a veritable driver to economic growth to developing economies like Nigeria. The inflows to construction and oil and gas have consistently supported economic growth in Nigeria. However, the agriculture sector has not benefits in the long run from FDI as the manufacturing sector. The transfer of technological know-hows via FDI is not beneficial to the manufacturing and agriculture sectors in Nigeria.

This study has added to the extant studies that have disaggregated FDI inflow to various sectors into Nigeria. The study have showed that effect of FDI inflow should be better measured by sector rather than cumulative sector. This supports that industry level business analytical technique as ideal for investment purposes.

More so, this study has been used as a test run for the model developed by Susilo (2018) for studying FDI into Manufacturing sector, wholesale trade sector, retail trade sector, information sector, banking sector, finance sector, insurance sector, real estate, rental and leasing sector, professional. The results validated that FDI to sectors showed varying effects on growth.

On the strength of these, the study recommended as follows:

1. The government should encourage local investment into the agriculture and manufacturing to cushion the adverse impact of FDI to Nigeria growth.
2. Nigeria should seek human development to the economy via the use of FDI to construction and oil and gas sectors.

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## Appendix 1: Data for the study

SN	Year	GDP (N'Billion)	GDPr (%)	FDIagr (N'Billion)	FDIcons (N'Billion)	FDImanu (N'Billion)	FDIog (N'Billion)	EXR
1	1987	244.68	0.17	3.65	3.70	3.92	3.91	4.02
2	1988	315.62	6.23	4.17	4.26	4.32	4.20	4.54
3	1989	414.86	6.66	7.04	7.38	7.59	7.58	7.39
4	1990	494.64	11.63	7.86	7.90	7.94	7.94	8.04
5	1991	590.06	-0.55	9.21	9.61	9.45	8.87	9.91
6	1992	906.03	2.19	9.56	10.23	17.61	18.51	17.30
7	1993	1,257.17	1.57	20.11	22.00	24.88	22.54	22.05
8	1994	1,768.79	0.26	21.89	21.89	21.89	21.89	21.89
9	1995	3,100.24	1.87	21.89	21.89	21.89	21.89	21.89
10	1996	4,086.07	4.05	21.89	21.89	21.89	21.89	21.89
11	1997	4,418.71	2.89	21.89	21.89	21.89	21.89	21.89
12	1998	4,805.16	2.5	21.89	21.89	21.89	21.89	21.89
13	1999	5,482.35	0.52	86.00	86.00	86.97	90.00	92.69
14	2000	7,062.75	5.52	98.78	99.91	100.93	100.38	102.11
15	2001	8,234.49	6.67	110.50	110.71	110.66	113.70	111.94
16	2002	11,501.45	14.6	113.96	114.28	116.04	116.13	120.97
17	2003	13,556.97	9.5	127.07	127.32	127.16	127.37	129.36
18	2004	18,124.06	10.44	136.08	135.16	134.43	133.51	133.50
19	2005	23,121.88	7.01	132.86	132.85	132.85	132.85	132.15
20	2006	30,375.18	6.73	130.29	129.59	128.70	128.47	128.65
21	2007	34,675.94	7.32	128.28	128.27	128.15	127.98	125.83
22	2008	39,954.21	7.2	117.98	118.21	117.92	117.87	118.57
23	2009	43,461.46	8.35	145.78	147.14	147.72	147.23	148.88
24	2010	55,469.35	9.54	149.78	150.22	149.83	149.89	150.30
25	2011	63,713.36	5.31	151.55	151.94	152.51	153.97	153.86
26	2012	72,599.63	4.21	158.39	157.87	157.59	157.33	157.50
27	2013	81,009.96	5.49	157.30	157.30	157.31	157.31	157.31
28	2014	90,136.98	6.22	157.29	157.31	157.30	157.29	158.55
29	2015	95,177.74	2.79	169.68	179.74	197.07	197.00	193.28
30	2016	102,575.42	-1.58	197.00	197.00	197.00	197.00	253.49
31	2017	114,899.25	0.82	305.20	305.31	306.40	306.05	305.79
32	2018	129,086.91	1.91	305.78	305.90	305.74	305.61	306.08
33	2019	145,639.14	2.27	306.85	306.77	306.92	306.96	306.92
34	2020	154,252.32	-1.92	306.96	306.96	326.63	361.00	358.81

Sources: Central Bank of Nigeria Statistical Bulletin, 2020 edition