EMPIRICAL ANALYSIS OF THE IMPACT OF SECTORAL AND TOTAL FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH

EVIDENCE FROM NIGERIA (1981-2018)

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Abstract

Foreign Direct Investment (FDI) is a vehicular mechanism for an economy to attain growth and development. It helps deliver important benefits such as the creation of employment, transfer of technology, economic boost, and spill-overs (horizontal or vertical) to other sectors of the economy. However, the Nigerian economy has a different experience. While there are numerous empirical studies on the impact of FDI and economic growth in Nigeria, there is a dearth of studies that measure the impacts of both sectoral and total FDI on the country's economic growth and unveil how the impact of the sectoral FDI compares with the total FDI. In view of this, this study was conducted to investigate the impacts of sectoral and total FDI on the economic growth of Nigeria, with specific reference to how the sectoral FDI compares with the total FDI from 1980 to 2018.

The study used the Autoregressive Distributive Lag (ARDL) model as a technique to estimate all relevant variables and modelled it on the primary, secondary and services sectors of the economy to show the sectoral FDI's impacts; and the overall FDI. These were carried out using the short and the long-run dynamics. Findings showed that in the short-run, FDI has an insignificant effect in the sectors and total on economic growth. Whereas in the long run, the FDI has a negative and significant impact in the primary sector, a positive and significant impact in the secondary sector, but had an insignificant impact in the service sector on economic growth. The impact in the total was found significant only in the long run.

The negative effect of FDI on the primary sector, in the long run, was adduced to the resource curse factor and possibly due to the limited linkages of the primary sector. While the secondary sector has positive and significant results, in the long run, are due to its ample forward and backward linkages to the economic activities, although the secondary sector is around 20% only of the FDI. Meanwhile, the FMOLS and DOLS showed significant results for the sectors

and total in the short run. In both the FMOLS and DOLS, the primary sector is negative, the secondary sector is positive, the service is positive in the FMOLS, and the DOLS negative. The total FDI is positive and significant in both the FMOLS and the DOLS.

Based on the study's findings, it is important that the government and other policymakers put in appropriate measures to ensure that foreign investment inflow effectively benefits the economy in the country. The adoption of the free float determination of exchange rate which the market would determine; and increasing focus on a more open economy and adopt policies like export promotion strategy which would aid the growth of infant industries.

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My profound appreciation also goes to all my family members for their support and contribution to my success in life. Special acknowledgement to my parents, who have stood by me and have been so supportive throughout my life, and even up to this stage. Finally, to my wife and daughter, my sole aim is always to make you proud, and this thesis would not be possible if not for your endless love and support.

Abbreviations

ADF	-	Augmented Dickey-Fuller
ARDL	-	Autoregressive Distributive Lag
ASEAN	-	Association of South-East Asian Nations
BRICS	-	Brazil, Russia, India, China, and South Africa
CBN	-	Central Bank of Nigeria
CBNSB	-	Central Bank of Nigeria Statistical Bulletin
CPI	-	Consumer Price Index
CUSUM	-	Cumulative Sum
CUSUMSQ	-	Cumulative Sum Squares
DOLS	-	Dynamic Ordinary Least Square
ECC	-	European Economic Community
ECM	-	Error Correction Model
FDI	-	Aggregate Foreign Direct Investment
FDI_P	-	Foreign Direct Investment inflows into the primary sector.
FDI_S	-	Foreign Direct Investment inflows into the secondary sector.
FDI_T	-	Foreign Direct Investment inflows into the service sector.
FDI_TOT	-	Total Foreign Direct Investment inflows.
FMOLS	-	Fully Modified Ordinary Least Square
GCF	-	Gross Capital Formation
GDDP	-	Gross Domestic Product Per capita Growth
GDP	-	Gross Domestic Product

LEND	-	Lending Interest Rate
M&A	-	Merger and Acquisition
MNC	-	Multinational Corporation
NEPAD	-	New Partnership for Africa's Development
NEPD	-	Nigerian Enterprises Promotion Decree
NIPC	-	Nigerian Investment Promotion Commission
OECD	-	Organization for Economic Cooperation and Development
OLS	-	Ordinary Least Square
OPEN	-	Trade Openness
POP	-	Population Growth
PP	-	Phillip Perron
SAP	-	Structural Adjustment Programme
TFP	-	Total Factor Productivity
UNCTAD	-	United Nations Conference on Trade and Development
VAR	-	Vector Auto Regression
VECM	-	Vector Error Correction

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Declaration of Originality

This research project results from my work, and that due acknowledgement has been given in the references to all sources of information be they printed, electronic, or personal.

No portion of this research project has been submitted to support an application for any other degree or qualification of this or any other university or other learning institutes.

CHAPTER ONE

Introduction

1.1 Background to the Study

Foreign Direct Investment (FDI) is often conceived as a vehicular mechanism for promoting economic growth for developed and developing nations (Sokang, 2018). It has drawn extensive attention from academic scholars and policymakers in recent times. This is because of its potential benefits to enhance technology transfer, improve productivity, close investment gaps for host nations, and promote research in economic development. Such inherent characterisation informed the fast-paced transition to market orthodoxy by the governments of developing nations. It also informed their adoption of liberalisation policies that offer incentives for foreign players to boost their confidence to invest in the host country (Akanegbu & Chizea, 2017).

In this globalisation era, FDI can enhance flows from external sources and attract capital investment to the host nations (Dinh et al., 2019). Consequently, the sub-Saharan African leadership hastened the formation of the New Partnership for Africa's Development (NEPAD) in 2001 to secure external resources that will help achieve a 7% annual growth (Adams, 2009); Olatunji & Shahid, 2014). FDI is crucial to addressing the saving-investment gap. This is because the spillover effect can produce capital and expertise to expand existing companies and new companies to supplement domestic investment and boost international sales (Buckley et al. 2002). Neo-classical scholars have argued in favour of the influence of FDI on economic growth with special consideration for the absorptive capacity of the recipient. This influence is exemplified by its capacity to improve and strengthen an economy's factor productivity, effectively aid the mobilisation and efficient utilisation of resources. In the long run, FDI can speed up economic growth (Blomstrom et al., 1994; Easterly & Levine, 2002).

More so, the role of FDI as a factor that enhances growth is encapsulated in the transfer of new technology that the developing nations can use to accelerate their production process, boost imports, and increase employment opportunity (Falki, 2009). Also, it exposes the host economy to the modern management techniques and marketing strategy, while also on a long term basis, helps to deepen the levels of integration among regions and countries across the world (Awolusi *et al.*, 2017). This position, however, has been refuted by the Marxian and Gramscian

hegemonic theorists who canvass for trade protectionism (Rodriguez and Rodrik, 1999). This school portrays the FDI as a product of international capitalism set up to oppress and consign the underdeveloped economies into a perpetual state of being dominated. The Marxists posit that the connection that FDI establishes between and among countries is to achieve a long-term goal of domination (Awolusi *et al*., 2017). FDI to them sponsors the asymmetrical nature of the relationship that continues to tie the developing nations (who are major producers of primary products in the global market) to the apron string of the developed economies (Awolusi, 2012).

These opposing arguments notwithstanding, western financial giants like the World Bank and International Monetary Fund (IMF) have emphasised the FDI stimulation of capital formation and laid it as a framework for developing underdeveloped economies. Thus, many African nations have been attracting FDI due to their endowment with natural resources –which are much needed by the multinational companies (MNCs) operating in sub-Saharan Africa (SSA). The attraction of FDI has resulted in the invigoration of macroeconomic policies and political and financial reforms. It has also been seen to bring more ease on trade restriction in different African states, as we can currently see in East Africa, particularly in Ethiopia (Umeora, 2013)

As a developing economy, Nigeria is a frontline state in the context of FDI recipients in Africa, hitting the top three position in 2018 after Egypt and Ethiopia (United Nations Conference on Trade and Development, 2018). This is signposted by creating the Nigeria Investment Promotion Commission (NIPC) in 2004 to coordinate and direct investment into the Nigerian economy. Such a move had been precipitated by the development of reforms, privatisation and commercialisation of state-owned enterprises (Umeora, 2016), and the modification of the Nigeria Investment Promotion Act in 1995 (amended in 2004) to pave the way for the inflows of investments from foreign players. Such investments may either assume the Greenfield investment typology or the Merger and Acquisition (M&A) form. From a negligible foreign inflow of investment of US$588 million worth in 1990 to $1.14 billion in 2000 and a total of US$ 3.3 billion in 2019 (Ceicdata, 2020; World Bank Group, 2020), the nation's market has been a major target for FDI, especially from the United Kingdom, United States, and China. This informed the dependence of the economy on FDI as a source of external finance (Ekwunife and Ikeora, 2017); Awe, 2013). Its monolithic nature and a strong reliance on oil and oil products have impinged on the flow, being overly channelled towards the extractive industry of the Nigerian economy.

Despite the much-acclaimed potential advantages of FDI to a nation's economic growth, there is rampant fear that the inflow will strangulate infant industries and abdicate the control of the economy into foreign hands. This is mainly due to the weakened structure of economic institutions in Nigeria. As argued by Ugwegbe (2019), the prevalence of corruption, political instability, inadequate infrastructural facilities, and the absence of significant connections between the policies of the government of different administration are the mitigating factors on the impacts that FDI should wield on the nation's economic growth. This is expressed in the World Bank *Doing Business Report* (2019) that ranked Nigeria 146th position on the global index of countries with the ease of doing business. This mirrors a downward shift by one place from the 145th position in 2018.

Furthermore, the Nigerian government has taken actions against foreign companies, which is perceived as antithetical to attracting much-needed foreign investment. In December 2018, the Nigerian government accused British multinational banking firm HSBC of laundering over $100m (Onuoha, 2018). This prompted the bank to close its local representative offices in Nigeria. This occurrence built suspicions on foreign players in Nigeria's investment landscape who conceived the environment as somewhat hostile. The implication of this was the reluctance of companies to invest more in the economy at the time, and it was one of these factors that had cascading effects on the FDI on the nation's economic growth.

In fact, given the resource base and the potential need of the nation, the extent to which FDI flows into the nation's economic landscape signals that Nigeria is still faced with intense struggle as far as the relationship between FDI and economic growth is concerned (Aseidu, 2013). Relevant literature on the study of FDI and economic growth in Nigeria has been anchored on how FDI has proven to have both negative (on a short term) and positive (on a long term) effects on the economic growth of the nation (Adelegan, 2000; Schoors and Van Der Tol (2002; Bosworth and Collins, 1999; Akinlo, 2004; Ayanwale, 2007; Adams, 2009; Awolusi *et al*., 2017; Olatunji & Shahid, 2014; Akanegbu & Chizea, 2017; Sokang, 2018). However, these previous studies have only sought to establish the causal relationship between FDI and economic growth at the aggregate level, while the attention on the sectoral FDI has been jettisoned. This absence of sector-wise analysis of FDI impacts on economic growth, it is in this realisation that this study seeks to deconstruct the consistencies and inconsistencies that characterise the discourse of FDI and economic growth in Nigeria, with specific reference to sector-wise analysis.

1.2 Statement of the Problem

The intrinsic characterisation of FDI, as advanced by the growth model, is its capacity to catalyse the economic growth of an economy (Awolusi, 2012; Olatunji & Shahid, 2014; Akanegbu & Chizea, 2017; Sokang, 2018). Such characterisation produces the much-touted argument on how FDI externalities can facilitate improved productivity, and enhance resource utilisation efficiency, to the end that the growth of the economy is attained (Umeora, 2016). The growth of the domestic economy can be improved amidst the efficient feature of the foreign firms, from which local firms in the domestic economy can receive competition and imitate the technological frameworks and management techniques from the latter, culminating in overall economic growth. Conversely, a vertical linkage to growth can be occasioned, in which firms in different industries can be spurred to venture into supplies for foreign customers (investors).

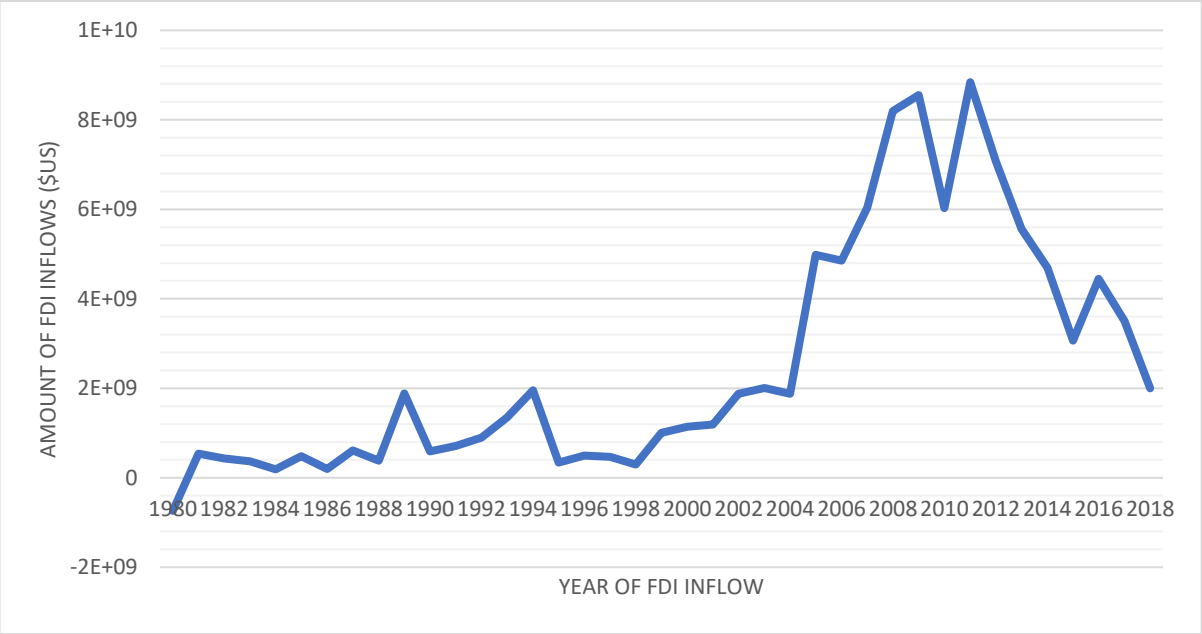
The empirical postulation can illustrate these assertions on the impacts of FDI on economic growth by Agrawal (2015) that the BRICS nations –Brazil, Russia, India, China and South Africa, could revive their ailing economies through the instrumentality of FDI. In this study, Nigeria has also derived some benefits from FDI since it institutionalised the National Investment Promotion Commission Act of 1995 and its subsequent modification in 2004. The country's FDI has not only expanded from $588 million in 1990 to an all-time high of $8.8billion in 2011 (see figure 1 below), but its primary, secondary and service sectors all moved from negligible $1.3 billion, $262.5million and $26.8million to $143.3 million, $43.3 million and $40.1 million respectively between 1990 and 2012 (author's compilation based on CBN, 2019).

In such case, the share between sectors was 81.5% for the primary sector, 16.7% secondary, and 1.70% for the services sector in 1990, became 63.31%, 19.06% and 17.64% in 2012, respectively (WorldBank Dataset, 2019).

As shown in figure 1, the growth rate for FDI inflow was negative between 1980 and 1982 before it hit the positive line in 1983. The growth rate of the FDI inflow is calculated by subtracting the previous value of FDI inflow from the present value (future in this context), and then the result divided by past value and multiplied by 100%. Thus in 1981, the growth rate was (-10%), while in 1984 stood at 0%, and it rose to 2% in 1989 and declined to -1.09%

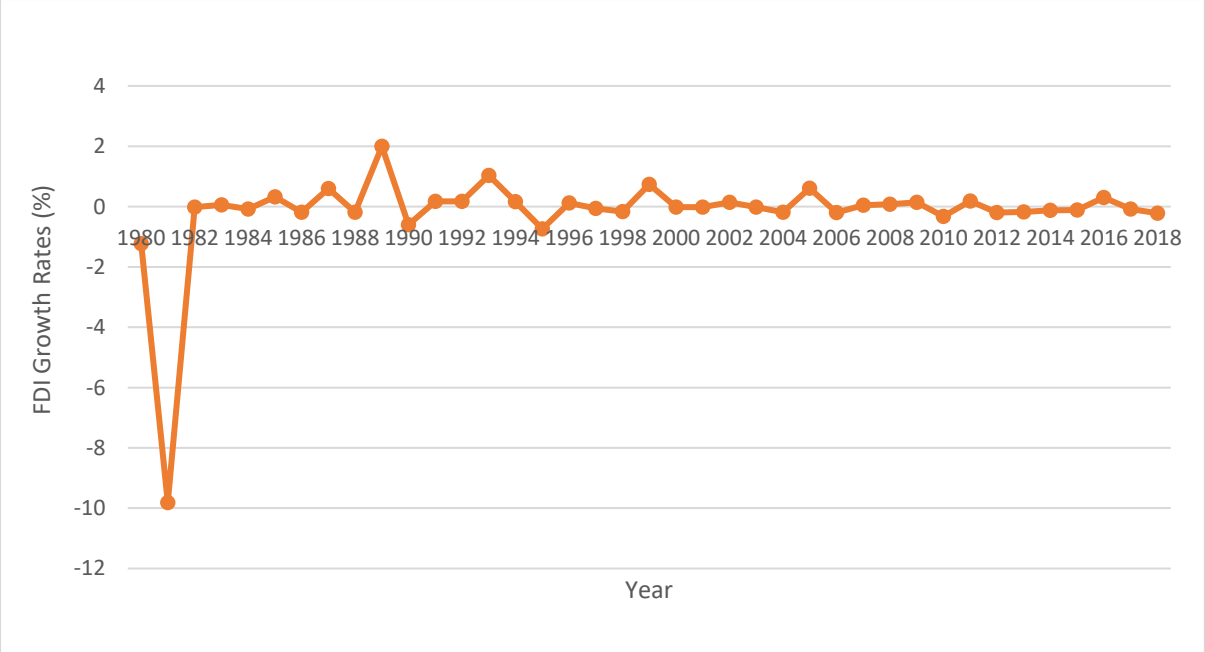
in 2000. The years 2010, 2015, and 2018 all had negative growth rates, declining to -1.7%, -1.9%, and -1.8%.

Figure 1: Total Inflow of Foreign Direct Investment in Nigeria (1980 -2018)



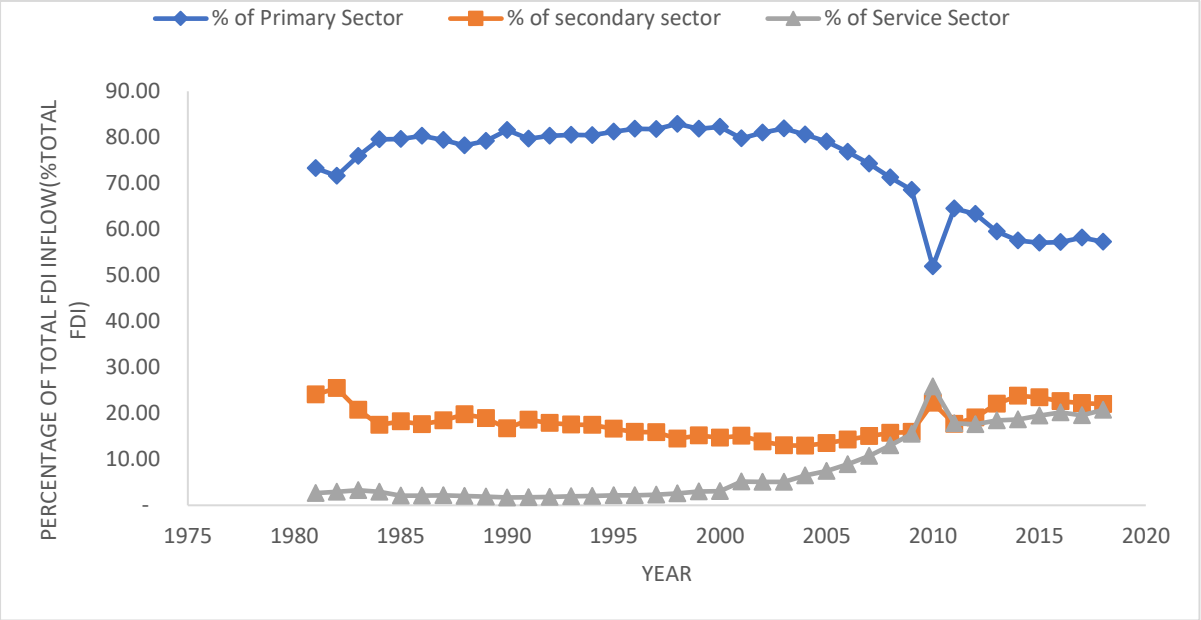
Source: World Bank (2021)

Figure 2: FDI Inflows Growth Rate in Nigeria (1980-2018)



Source: World Bank (2021)

Figure 3: Sectorial Distribution of FDI Inflows in Percentages in Nigeria (1981-2018)



Source: World Bank (2021)

This graph was derived by extracting the growth rate data calculated by the World Bank for the period 1990-2018. Specifically, the growth rates were determined by collating the data on exports of goods and services from the database. Secondly, using data from the World Table, the per capita exports values were and finally, growth rates of export per capita were then derived. The growth rate was calculated using the formula- $g_y = f(FDI, Z)$, where g_y is the growth rate, FDI is the foreign direct investment, and Z represents all variables that determine growth rate.

Table 1: Sectorial Distribution of FDI in Percentages in Nigeria (1981-2018)

Year	% of the Primary Sector	% of the Secondary Sector	% of Service Sector
1981	73.3	24.07	2.63
1985	79.64	18.25	2.11
1990	81.56	16.74	1.7
1995	81.21	16.66	2.13
2000	82.25	14.65	3.09
2005	79.05	13.53	7.42
2010	51.9	22.3	25.79
2015	57.09	23.43	19.49
2016	57.18	20.17	22.65
2017	58.19	19.57	22.24
2018	57.28	20.75	21.96
Average	**68.97**	**19.10**	**11.93**

Source: The World Bank (2021)

As shown in Table 1, the trends on the sectoral distribution of FDI in Nigeria show that FDI sector shares are steadily shifting from the primary to service sectors with a slight change in the share of the secondary sector. Meanwhile, the share of the primary sector in the total FDI increased in the eighties and nineties from approx. 70% to 80% then dropped steadily after 2003 again to approximately 60% to allow for the growing share of the services sector. The services sector share grew up steadily after 2000 to reach approx. 20%, whereas the secondary sector share changes were within 10% over the 30 years.

Despite these huge figures of FDI inflows in Nigeria compared to other sub-Saharan Africa countries, and the much-acclaimed potential positive connection with economic growth, it is important to argue that the effects of FDI can be diverse based on the essential features of sectors and their linkages to the overall economy. This fact has been acknowledged by the World Investment Report (2011) that "the linkage potential differs across primary, manufacturing and services sectors". The propensity of the primary sector to link foreign investments with the entire economy is often limited, given that it is highly capital intensive. (Aykut and Sayek, 2005). However, a substantial portion of the returns is expected to be re-

invested in the Nigerian economy to cause economic growth and stimulate development. The impact of FDI inflow into the manufacturing sector is larger, given its intensive activities that aid linkages. Also, the potential for the FDI inflow to the services sector to propel forward linkage is very strong because FDIs provides capital through the inflow of foreign exchange resources, removal of the constraint of the balance of payment, and promotes healthy competition between markets. However, the impact of services sector FDI on the economy is dependent on the strength of the regulatory systems. In Nigeria, most of the investments are being received into the oil, telecommunications, manufacturing, construction and agriculture sectors (Ayanwale, 2017).

The level of inflow in the oil sector was motivated by the discovery of crude oil and the economic prosperity accrued from it since the 1970s (Shittu *et al*., 2015) even till date. In addition, investments inflow for the massive construction and rehabilitation of infrastructure destroyed in the Nigerian civil war between 1967 and 1970 (Makola, 2003). According to Akoh (1999), FDI is still dominant in exploiting natural resources in the Nigerian economy. However, a move towards the services sector has been experienced in Nigeria since 1998, as can be deduced from figure 3, when the primary sector accounted for about 80 per cent of Nigeria FDI stock (World Bank, 2021). The licensing of a giant telecommunications company, MTN, and other external telecommunications actors in the early 2000s in Nigeria, brought the sector into the limelight.

The agricultural sector holds a distinct character as FDI inflow has culminated in the increase in crop production, importing treated seedlings, and training relevant actors in the sector. The Lekki Free Trade Zone in Lagos that was jointly started by the Lagos States and the Chinese government in October 2007 is one of the benefits of FDI to the economic growth of the nation, as it opened the hitherto remote area to the possibility of development with the creation of more jobs (Izuchuckwu and Ofori, 2014).

The above-mentioned empirical studies portray that FDI has opened up new vistas of economic opportunities in the country by creating job opportunities, transfer knowledge and technology, and improving the quality of the production of goods and services.

Chidozie et al. (2015) also argued that the increased competition from Chinese manufacturers that churned out mass-produced cheaper goods has led to the near erosion of Nigerian goods, further exacerbating the economy's growth. As a corollary to the above, foreign investment may be disguised as a debt trap, which in the long run puts the control of the local economy in

foreign hands. While such a case is not yet apparent in Nigeria, the hand-over of the Hambantota, Sri-Lanka's strategic port, to the control of China after incurring the debt of over $8 billion to state-owned Chinese firms; thereby undermining the sovereignty of the economy (Moramudali, 2020).

The scenario above depicts the ripple effects Foreign Direct Investment has on the economic growth of the recipient countries, but this is often done as a monolithic study. Thus, explored literature showed that previous studies on the impacts of FDI on the economic growth of Nigeria had been driven towards the aggregate. There is a dearth of systematic studies on how sectorial FDI has impacted the nation's economic growth and how the impacts compare with that of the aggregates. Upon this gap, it becomes essential to drill down findings to sectoral level; hence the study.

1.3 Research Questions

The scenario depicted in the previous section has highlighted the need to drill down findings to the sectorial level. Thus, the thesis aims to investigate the impact of aggregate and disaggregate FDI on the economic growth of Nigeria. Also, investigate how the sectorial level impacts, compared with the impacts of aggregate FDI on economic growth in Nigeria. This thesis investigates the FDI impact of the primary, secondary, service sectors and total on the Nigerian economy from 1981 to 2018.

1.4 Significance of the Study

This research becomes a necessity, given that there is no study with a piecemeal approach, in which sector by sector analysis was considered, to the study of FDI and economic growth in Nigeria. The building of different models and comparison with total FDI will be an eye-opener to future studies. Such perspective on sectorial specific analysis at the country's level will help establish the benefit that the economy can accrue from FDI investment in Nigeria, thereby contributing to perspectives on the study of FDI and economic growth in Nigeria. This study will go a long way to fill the critical gap in the existing body of knowledge on studies in the field. While previously related studies such as Awolusi (2012), Izuchukwu & Ofori (2014), Umeora (2016), Akanegbu & Chizea (2017) and Ugwegbe et al. (2019), among others, concentrated on investigating the empirical relationship between aggregate FDI and economic growth in Nigeria, this study seeks to fill the fundamental gap by being the first to investigate the implication of both aggregate FDI and disaggregated FDI by sectors on

Nigeria's economic growth. When incorporated into the existing body of literature, the findings of this study will serve as a valuable guide, particularly for economic policymakers, and will serve as a good source of reference for future scholarly research. Policymakers and development partners will benefit from the study because it will allow them to initiate, develop, and manage long-term economic strategies based on empirical evidence.

1.5 Contribution

This study adds to the literature in two ways. First, we will look at the relationship between FDI inflows and Nigerian economic growth, addressing the country's specific dimension to the FDI growth debate while also covering various sectors. The majority of previous research concentrated on the aggregate impact of FDI inflows on the country's economic growth. Traditional economic theory, especially the endogenous growth theory and several empirical studies (Izuchuckwu and Ofori, 2014; Olatuni & Shahid, 2014; Akanegbu & Chizea, 2017), also corroborated the support the view that a causal relationship exist between Foreign Direct Investments and economic growth and that Foreign Direct Investment inflows increase growth in host countries. Unlike the past literature, this study investigates the sectoral FDI effects on the Nigerian economy. To the best of my knowledge, this empirical study is the first attempt to test the impact of FDI inflows in various sectors in Nigeria on growth.

Secondly, there is a contribution to the natural resource curse literature by investigating the impacts of FDI inflows on the primary sector through resource usage and non-natural resource in the secondary and service sectors on economic growth. This study is related to the literature on the natural resources curse hypothesis and economic growth studies. Our work is close to Alfaro (2003), Vu and Noy (2009), Aykut and S. (2005) and Doytch and Uctum (2012), but the current study applies a different methodology (time series analysis) and focuses on the oil-rich economy in Nigeria.

CHAPTER TWO

Literature Review

This Chapter is a review of relevant literature on the interaction between foreign direct investment and economic growth. The Chapter is sub-divided into two sections. Section 2.1. is a review of empirical studies of the aggregate FDI (macro-level) impacts on economic growth. Section 2.2 is a review of scholarly works which explain sectorial-level and firm-level influences on economic growth.

2.1. FDI - Economic Growth nexus: Macro-Level studies

The relationship between FDI and economic growth is a long-term debate that has surfaced in literature while the debate for the essence of FDI emerged. This would be much appreciated with a backdrop to the Structural Adjustment Programme (SAP), proposed by the Western world to the global south, especially the developing African countries (Giwa et al., 2020). FDI was presented as an essential instrument for developing economies, which had hitherto maintained closed economies, to boost capital flow and finance for the ailing economies. This made the 1980s the period of ideological triumph for the neo-classical school (Kida, 2014). The SAP set the tone for works on FDI and economic growth in developing countries.

However, this triumph of SAP in relation to FDI does not bring a total erasure to foundational works on the study of FDI and economic growth. Scaperlanda (1967) had attempted a study using statistical regression technique to analyse the US FDI to the European Economy Community (EEC) (now the EU) and the non-EEC countries. His goal was to determine the proportion of FDI attracted and how it helped stimulate economic growth, especially in a historical trend from, first, 1951 to 1958, and second, 1951 to 1964. As Scaperlanda's (1967) empirical data from these countries failed to support the analysis, he eventually refuted the assumption that the creation of EEC would automatically bring about a reallocation of international investment. This became a leeway for Wallis (1968 to fault Scaperlanda's (1967) methodology by arguing that his regression technique had some errors, thereby concluding that the increase in the level of the US FDI into the European states caused significant growth in their economies. In 1976, Hymer joined the trail of argument when he wanted to substantiate

his position on FDI and economic growth through the industrial organisation perspective. This lens made Hymer (1976) posit that a host FDI can act like two sides of a coin, as it can act as a force for economic growth and on the other side may become a force that can hinder it. In his argument, while FDI can accelerate the economic growth of a host nation, it can also be made to suffer from the negative consequences of international production. This is major because of its propensity to curtail the government from exercising control over the national economy, raise market barriers, and increase over-concentration on FDI at the expense of other economic activities. These can pose a threat to national and innovative products in the face of global demand. Hymer (1976) explains the vitality of existing market structure and the competitive condition to the flow of foreign direct investment; and that the movement of capital in relation to FDI can be adduced to the financing of the international operations without connection to high rates of interest.

These preceding works are crucial to the discourse of FDI and economic growth in contemporary time and have caused great attention to the subject. These have prompted different scholars to dive into the study for further investigation. Evidence from literature abounds that numerous empirical studies on FDI largely rely on either a long time-series data of a single country or panel data with shorter periods for several countries (Koojaroenprasit, 2012; Dinh et al. 2019). Overall, there seems to be a level of consensus that there is a relationship between these two variables. The extent of the impact of foreign direct investment on economic growth is contingent upon essential economic characteristics that a nation projects, especially in terms of labour, capital, technological intensity, income level, infrastructure, openness, financial status, and the rate of the human dimension of development amongst others (Cipollina, 2012; Elheddad, 2019).

Bornschier and Dunn (1985) conceived the inflow of FDI as a source of trade and what can only bring a positive impact in the short term. In their words, "the inflows of foreign investment as a source of trade will only positively impinge on the economic growth of the receiver (most likely the developing nation) on a short-term basis". In contradistinction, Hein (1992) made an empirical approach to the study of FDI in the East and Southeast Asian countries and how it affected the growth of the economies of those nations during the late 1970s and early 1980s. According to Hein (1992), the domestic economies received upward push from the flow of FDI into them, and this was predominantly because of some policies and mechanisms set up by these states to benefit from the inflow.

The dawn of the 1990s saw the work of Wang & Blomstrom (1992) came to the spotlight, whose arguments were on the LDCs countries. They argued on the interaction between FDI and domestic economic growth and asserted that horizontal spillovers, especially the diffusion and transfer of technology, were the outcome of FDI for economic growth. Balasubramanyam et al. (1992) undertook a study on developing countries to judge the influence of FDI on their economic growth. The study was conducted for forty-six (46) countries and revealed that the effects of FDI tend to be weak with a low level of attraction of foreign capital for countries that are import-substitution orientated. On the contrary, the growth rate was high in export-substituted economies, with a high level of attraction for foreign capital.

Akinlo (2004) empirically measured the effect of FDI on Nigeria's economic growth between 1970 and 2001. He deployed the Error Correction Model (ECM) as his analysis technique and came up with an eye-opening result. Akinlo (2004) concludes that while foreign and private capitals are mildly impacting economic growth, such impact is not statistically significant. He substantiated further that because of the increased level of capital flight, the effect of FDI on economic growth is significantly negative for Nigeria.

Asiedu (2005) concentrated on the determinants of FDI to Africa by looking at the role of natural resources, market size, government policy, institutions' quality, and political instability on FDI. She examined the constraints on FDI to Africa based on four surveys by the World Bank, UNCTAD and the Centre for Research into Economic and Finance of Southern Africa (*CREFSA*). The surveys covered a large number of multi-national companies working in many Sub-Saharan and South African community. She concluded from the surveys that curbing corruption, improving regulatory framework, infrastructures, macroeconomic stability, inflation and exchange rate risks, and political stability would encourage FDI inflows. In addition, she used panel data for 22 countries for the period 1984 to 2000, she concluded, using the Autoregressive Distributive Lag Model (ARDL), that natural resources and large markets promote FDI, and a similar effect can be gained from political stability, reliable legal system, openness to FDI, lower inflation, less corruption, good infrastructure, and good education.

We can draw another reference from Noormamode (2008), who combined the Vector Auto-regression (VAR) statistical model with the GMM analysis to establish connection between FDI and economic growth. Like Alfaro (2003), Noormamode (2008) gathered panel data from 1980 to 2004 from fifty-eight (58) countries and subjected them to a panel Vector Auto-regression (VAR) test. His findings yielded a similar outcome with Alfaro (2003), as they both

agreed that FDI does not produce an effect that is defined and concrete for the economic growth of the nations under study. Thus, he concluded that conditions such as income level and availability might be attributed to the diverse nature of the causative factors for gross domestic product and foreign direct investment.

Koojaroenprasit (2012) conducted a systematic study by investigating whether an association holds between foreign direct investment and economic growth, using South Korea as a case study from 1980 to 2009. Koojaroenprasit (2012) resorted to multiple regression to measure the relationship between FDI and economic growth. He found that between the 29 years, the growth of the South Korean economy was intensely and positively affected by the inflow of FDI into the nation. Oyatoye et al. (2011) tried to forge a link between FDI, export and economic growth in Nigeria. His study looked at the period of 1987 to 2006, using the OLS technique. His findings revealed that FDI had a positive relationship with GDP, having demonstrated that a unit increase in the value for the FDI brought about a N104.749 increase in the gross domestic product.

Zang (2013) studied the consequences of FDI on economic growth and focused on the determinants of inward and outward foreign direct investment by giving special attention to the developed member countries of the Organization for Economic Cooperation and Development (OECD). He believed that they were the major sources cum recipients of the largest portions of the world's FDI, but the dearth of adequate data showing the aggregate impacts of FDI in those countries existed. This informed his study on 20 developed OECD countries related to what constitutes the determinants of FDI inflows and outflows and their relationship with economic growth. As an empirical analysis, Zang (2013) adopted 'Two-Stage Least Square' simultaneous equations to model available data for the countries between 1981 and 2008. In his findings, he argued that while economic growth has positive effects on the inflow of FDI into the selected countries, it cannot be said otherwise that the inflow of FDI into these countries has acted as an impetus for their economic growth.

More so, he opines that trade openness and the flexibility of employment protection legislation in the FDI recipient nations can draw more investment into the economy. On the other hand, his view of the outward movement of investments is the one with a reductionist impact on the domestic growth of the country's economy, even as economic growth powers more outflow of FDI. Again, he argues that a high level of low labour cost, trade openness, outward FDI stock, in the host country, and currency depreciation in the home country provide incentives for

domestic firms to invest in foreign markets (Zang, 2013). Deriving from these findings, Zang (2013) disregarded the basis for offering initiatives that will serve as incentives and induce foreign players to engage more vigorously with investment in order to accelerate the inflow, or the necessity to develop promotional policies that will encourage local firms to spur the outward flow of investment. However, he argues in favour of domestic investments, which could be increased through friendly policies as an incentive to boost the economy.

Another study was also carried out on Turkey by Dürnel (2012). It interrogated ten different sectors of the state's economy in relations to how FDI has influenced them between the years 2000 and 2009. Durnel (2012) chose to use the panel Cointegration and Granger-Causality test as the methodology for answering his research question. He concludes that five sectors, namely, the manufacturing, electricity, gas and water, wholesale and retail trade sectors, have witnessed an increase in their rates of growth; and such can be adduced to the positive effects of the inflow of FDI into the Turkish economy. This influenced his argument to say that FDI has contributed immensely to the aggregate growth rate of the state and increased the labour productivity that has enhanced sectoral growth in various forms and at different levels, even though FDI inflow only works to the advantage of some at the expense of the remaining few.

Onu (2012) came up with a study that built on several empirical findings. His study concentrated on the effects of FDI on the economy of the Nigerian state from the days of the structural adjustment programme (SAP), 1986 to 2007. Onu (2012) conducted a multiple regression analysis to confirm the nature of the relationship. According to him, even though FDI did not make a substantial contribution to Nigeria's GDP at the time, its effect on the growth of the nation's economy was still on the positive side.

In 2014, Olatunji and Shadid were in pursuit of establishing a systematic thought on FDI and economic growth. Their research voyage was on Nigeria's economic growth between 1970 and 2010. For Olatunji and Shahid (2014), the Co-integration method was deemed perfect for helping evaluate and estimate the direction of the relationship between Nigeria's economic growth and FDI. Deriving from this method, they resorted to the Engle-Granger of the co-integration tests and concluded that on a long-term basis, no relationship exists between growth of economy and inflow of foreign investment on the shores of Nigeria's economy, while the short run-basis of the relationship was submitted to be in existence. These results prompted their recommendation that only when the Nigerian government stimulates a friendly environment for businesses, deals with issues of political upheavals and corruption, and

develops social infrastructure, can there be a long-run effect on Nigeria's economic growth the FDI that flows into it.

Abbes et al., (2014) also used 56 countries as the case study, even as he analysed how FDI was related to the growth of their economies. Abbes et al., (2014) ran the Granger Causality test with panel data from these countries and concluded that there was an inherent non-disparity in the causality of FDI and Green Gross Domestic Product (GGDP) which they termed unidirectionally. They also indicated that the panel co-integration analysis turned out to have a result disparity. Adeleke et al., (2014) took the ordinary least square (OLS) regression techniques to understand the aggregate effects that economic growth accumulated from FDI between 1999 and 2013. Their findings revealed a positive effect that FDI had on economic growth, with a statistically significant one.

Mallick (2015) investigated the effect of structural changes and globalisation on the labour productivity growth in the BRICs (Brazil, Russia, India, China and South Africa) nations. Such changes and effects were seen under the prisms of the inflow of FDI and economic integration. Mallick (2015) used the shift-share analysis, dynamic panel data method and input-output tables to cover the period of 1990-91 to 2011-12, being the years under review. He claimed that the influx of FDI brought about a two-way causality; that is, FDI inflows affect labour productivity, while labour productivity in turn yields an increase in sectoral growth, culminating in the reallocation of labour towards more productive sectors. He concludes that there is high labour productivity growth in BRICS due to globalisation and economic integration policies. He also concludes that in China and India, FDI inflows helped shift labour to the non-agricultural sectors of the economies, while in Brazil, Russia, and South Africa, it has succeeded in moving labour towards the services sector.

Mallick's (2015) study bears corollary with Alam's (2008), who conducted his empirical analysis on the countries in Eastern Europe and the defunct Soviet Union. Mallick (2015) must have drawn inspiration from Alam (2008), who averred that there was high economic growth in the nations under study due to the continuous increase in the level of investment. Agriculture, manufacturing, and services sectors were his focus in this study. In his view, high productivity is key to increasing the economic growth of a nation, sector, or firm; so an increase in productivity leads to increased profits and consequent investment. This would consequently affect wages to move in an upward trend while accelerating the standard of living and the productivity of labour in the long run.

Consequently, Alam (2008) argues that any sectors with a high rate of investment tend to have a productive labour force. According to him, the allocation of resources to a certain sector leads to a corresponding effect on the sector productivity and the associated labour force. Thus, an investment boost experienced in a particular sector can lead to the transfer of labour from a less productive sector (agriculture) towards the sectors with high productivity (manufacturing and services). Moreover, labour movement to sectors with high productivity also signals an increase in the products relevant to that sector. This is why Alam (2008) concludes that labour productivity and sectoral productivity are not mutually exclusive but mutually reinforcing, which means that one cannot determine labour productivity in isolation of sectoral productivity, but that one should conceive them as very much related and dependent on each other.

Egbo (2010) undertook a doctoral study to establish the extent and level of influence of FDI on Nigeria's economic growth for about twenty-seven years, being between 1981 and 2007. She conducted the study as part of her efforts to address the controversy surrounding the determination of the direction of causality between FDI and economic growth amidst the much-established evidence of the link between them. To answer such a fundamental question, Egbo (2010) modified the TY Granger no-causality test of Seabra and Flach (2005) and worked on both the bivariate and multivariate dimensions of FDI. The first (bivariate) looked directly at the relationship between FDI and economic growth. The second, multivariate examined the effects that inflation rates and exchange rates, all being control variables, combined with the FDI's impacts on the growth of Nigeria's economy under the period of study. She adopted the Ordinary least Square (OLS) method to estimate annual time series of secondary data gathered on variables like the gross domestic product (GDP), the net inflow of FDI, rate of inflation, and exchange rates. It was confirmed using the Johansen Co-integration test that there was a stable long-run relationship among all the four variables, that there was a causality relationship that spanned from FDIs to GDP, and not the other way round (from GDP to FDIs).

Deriving from her empirical analysis, Egbo (2010) concluded that there was a positive relationship that FDI had with GDP in Nigeria during the focus years, which can be inferred that FDI drove the nation's economic growth. This outcome informed her recommendation that Nigeria should encourage more FDI for her to continue to see increasing growth in the economy. Leaning on the results of her model, she concluded that policymakers in Nigeria should take advantage of the global economic realities as a means of advancing the home economy through the development and execution of proactive and novel macroeconomic

policies, proper reduction in the risks of policy reversals, boosting the provision of infrastructure to attract more investors, and adhering to the application of the rule of law.

Adegboyega and Odusanya (2014) research represents another developed models on the discourse of foreign investment and growth. The study focuses on Nigeria and the dwindling inflow of FDI relative to other developing economies across the globe. Covering the period between 1993 and 2011, he concentrates on the impacts of FDI vis-à-vis investment in the domestic sector of Nigeria and its economic growth. Such impacts were considered concerning nations characterised by low income per capita as Nigeria, including low inflow of foreign funds, low rate of return of investment to the flow of FDI, and the closing investment and foreign exchange gaps. To analyse the subject matter, Adegboyega and Odusanya (2014) employed the fixed effect least-square dummy variable model as an estimation technique to unveil the impact of FDI on Nigeria's economic growth.

In addition, they used the non-parametric approach of Locally Weighted Scatterplot Smoothing (a tool used to generate smooth lines, to understand variables connection and make a future prediction) to show how gaps for foreign exchange and investments can be bridged through foreign direct investment. Their study reveals that the economic growth of Nigeria, being a country with the lower inflow of foreign funds, cannot be separated from the activities of FDI. Based on their findings, Adegboye and Odusanya concluded that there is a statistically significant relationship between foreign investment and economic growth.

Upon this result, Adegboyega and Odusanya (2014) make their claim that the lower inflow probably accounts for the reduction in the level of dependence on foreign capital that has, in turn, fuelled a deliberate growth of the domestic sector investment, with a resultant effect of increased economic activities, and by extension, advancement in economic growth. The high rate of return on investment had not positively influenced the FDI in African countries, and the inflow of FDI did not fill the gaps between investment and foreign exchange in Africa. In this realisation, he suggests that African governments should take a considerable look at specific sectors that would encourage more inflow of FDI, domestic investment, and reduction in the level of dependence on FDI flows as income increases.

Anekwe et al. (2018) carried out an empirical study on the impacts of FDI on the economic growth of Nigeria. Their study examined the period 1990 to 2012. They relied on secondary data that were extracted from the Central Bank of Nigeria statistical bulletin (CBN), Annual reports and Statement of accounts and employed the OLS technique to estimate the data. Their

study's findings showed a positive and significant relationship between FDI, export, and economic growth. This result informed their conclusion that FDI propelled the increase in the level of export in Nigeria.

John (2016) was interested in Nigeria between 1981 and 2015 in how the inflow of FDI affected Nigeria's economic growth nationally. John (2016) used the multiple regression analysis and concluded that there was a positive effect between these two variables, using the GDP growth as the dependant variable to indicate economic growth. He argued that the exchange rate had a positive effect on the GDP, but not significantly. Ali and Hussain (2017) researched the Pakistani economy between 1991 and 2015, and they employed multiple regression and correlation for the analysis of FDI and economic growth data. Their result showed that the Pakistani economic growth had been based on the inflow of FDI that positively influenced it.

In 2017, the worth of FDI inflows to the Nigerian economy dropped to the level of US$3.5 billion, which amounted to about a 21% decline. This occurrence, among others, prompted Alabi (2019) to take a retrospective study on FDI and economic growth in Nigeria for 31 years. This was specifically between 1986 and 2017. It established the relationship between these two variables (FDI being the independent variable, while economic growth was considered the dependent variable), holding other variables constant. Alabi (2019) built an econometric model around these variables and adopted descriptive and regression analyses to evaluate his study. His research revealed that at a 5% level of significance, the inflow on FDI impacted the economic growth of Nigeria positively and significantly during this period. Drawing from the positive influence of these variables, Alabi (2019) drove home his point with the recommendation that called for the Nigerian government to develop an enabling environment that will act as a pull factor for more investors, to the point that employment opportunities will be created and the transfer of technology will become easy. He concluded that attention should also be paid to the area of domestic investment, given that foreign investors can be further drawn with active and friendly domestic investors.

Olabode et al. (2019) studied the overall economic growth in Nigeria in relation to FDI. His focus was mainly to examine the controversial issue that the territorial or geographical location of a country goes a long way to determine the extent of FDI influx into it. This study used the Fully Modified Ordinary Least Square (FMOLS) to examine the determinants of FDI and economic growth. His findings revealed that for Nigeria, the flow of FDI is not determined by its location, making the result statistically insignificant. It was seen that in explaining economic

growth in Nigeria, FDI, manufacturing sector, tax revenue, financial development, health expenditure, net trade, and human capital are in the positive direction of relationship with income growth. It was also seen that despite the positive relationship of these factors, not all of them were statistically significant. Tax revenue, human capital and net trade were all found to be statistically insignificant. Further to this, their analysis revealed that the relationship between FDI, import, income growth and capital formation was negative, though statistically significant. They adduced the negativity of capital formation to the factor of political corruption in Nigeria.

2.2 FDI -Economic Growth nexus: Micro-level studies

Koizumi and Kopeck (1980) were among the first scholars to connect FDI and domestic economic growth. Their study was based on the utilisation of firm-level data, using the variable of technological transfer as the determinant. They used a partial equilibrium paradigm to investigate how innovation and technology transfer from a parent firm to its local firm leads to the firm's growth. Technology transfer is thought to expand the nation's capital stock owned by multinational occupants. The transmission of innovation is thought to be seamless, and innovation and technology are dealt with as a public commodity. This absorptive capacity enables firms to stir economic growth. Rodrik (1999) observes that literature in recent times have overly focused on the positive relationship of FDI and economic growth, and argues that such concentration is just an extravagant claim that is overemphasised. This prompted Moran (2011) to categorise literature that supports this assumption based on three standpoints. First is the existence of specific studies on FDI in the context of a particular country. Such findings, according to him, are usually descriptive without quantitative analysis and evidence that could help justify its generalisation to different conditions in other countries. Second, there are numerous studies on FDI at the level of industry, majority of which their results posit that the relationship between FDI and sectoral growth has a positive correlation. However, these studies fail to establish the direction of the causality, as it is a possibility that such correlation that is judged to be positive is not a reflection of FDI-led growth, but such that is predicated upon the fact that MNCs often position themselves in industries that already enjoy high tendency to attain growth (Winston, 2009). Thirdly, there is research that looks at how the domestic productivity matches with the degree of foreign presence, based on firm-level panel data at the sectorial and regional level. Moreover, careful consideration of similar studies (Haddad &

Harrison, 1993; Aitke and Harrison, 1999; Djankov and Hoekman, 2000) will produce different thinking regarding the effects that FDI has had on developing economies.

2.2.1 FDI and Economic Growth: A Sectoral-Level Review

Doctoral studies also abound in Asia, Eastern Europe and Soviet economies, and other emerging markets regarding the role of FDI on sectoral growth. Such studies Alam (2008), Maathai and Sahoo (2008), Bang *et al*. (2007), Dürnel (2012), and Mullick (2015), among others. Alfaro (2003) embarked on an empirical study of FDI and economic growth at the sector level. He collected data of forty-seven (47) countries (some of which were OECD countries, Africa, Caribbean, Asia, and Latin America nations) and compared the impacts of FDI on the economic growth of three sectors, namely, primary, manufacturing, and the service sectors.

Alfaro (2003) acknowledges the existence of variations across sectors, thus arguing that the effects of FDI would vary based on the type of FDI and sector. This informed her assertion that the total FDI would not produce an apparent effect on the growth of an economy; but an understanding of the extent of the influence can only be achieved through a sectoral approach. Alfaro (2003) used cross-country data with cross-section regressions to model and explain the distinct effects of FDI on each sector in the period 1981 to 1991. These techniques turned out with different results. First, there is a negative, yet significant relationship between FDI and economic growth in the primary sector; also, the relationship in the manufacturing sector is said to be positive and very significant, while that of the service sector is unascertainable. According to her, the existence of a positive and significant relationship in the manufacturing sector can be attributed to some substantial benefits like the empowerment of employees through training, manufacturing knowledge and processes, and technological transfer, which are easily present in the manufacturing sector than the counterpart of the service (Alfaro, 2003).

According to Bang et al. (2007), FDI has a significant and direct effect on the economic growth of a nation. This assertion emerged from his study on China and Vietnam on the impacts of FDI on the two countries' economic growth. Using empirical sectoral data of China and Vietnam between 1997 and 2004, and 1995 and 2003 respectively, Bang et al. (2007) argues that such significant and positive effects were also obtained from the interaction of the two variables with labour productivity, but with an asymmetry form of distribution across sectors

in these countries. He concludes that in China and Vietnam, FDI has majorly been to the benefit of their industrial sector in relation to other sectors.

Thuy (2007) carried out a study on Vietnam's industrial and FDI inflows between 1995 and 1999 and 2000 and 2002. It was to capture the effect of foreign investment by using industry-level panel data for twenty-nine industrial sectors. Thuy's (2007) study reveals that FDI inflows have a way of affecting salient economic activities such as bringing about an increase in the surplus budget of the government, exports and employment opportunities, and the growth of industries in the country. The growth-led FDI was also revealed in the findings as to how labour productivity of the industrial sector was being given a significant boost with FDI.

Gachino (2007) conducted a critical review of economic growth in Kenya's manufacturing industry. Using firm-level survey data from the Kenyan manufacturing sector, this study explored the role of FDI and firm-level skills in human resource growth. The study presents a comprehensive descriptive composition of human capital and other firm-level capabilities created by foreign and locally owned firms. The results then showed that international companies benefit more than domestic firms from strong human resource growth and firm-level skills.

Maathai and Sahoo (2008) doled out a different empirical perspective on their study of FDI and the nine major sectors in India. Their research was predicated upon using a panel cointegration approach to analyse the subject for annual data for a period from 1991-92 and another period in 2004-05, respectively. Such a study yields empirical findings that confirm that FDI inflows have had a positive impact on sectoral growth in India, especially in terms of output, labour productivity, and exports in the drugs and pharmaceuticals sectors. Moving on to the transportation and metallurgical markets, their results suggest a positive co-integration of FDI inflow and labour productivity. Due to labour backwardness, FDI inflows did not show a positive effect on labor-intensive sectors such as transportation and chemicals. Thus, their core point is that an increase in FDI into India does not always imply an increase in production and labour productivity in the country's sectors.

Vu and Noy (2009) conducted an empirical study to ascertain the impacts of FDI on the economic growth of developed economies at the sectoral level. They selected six different nations and used the sector-wise data, with the cross-country regression as an estimation technique. Their approach yields a result that posits that the influence of the influx of FDI can either take on a positive or negative dimension, as it depends on the direct impact it has on the

economy based on labour productivity increase. They realised that results differ from country to country and sector to sector. For example, in the real estate and financial sector, a significant effect was noticed. Thus, they concluded that variations exist in the growth of FDI, from sector to sector.

Sen (2011) made a remarkable contribution in the area of FDI, both at the aggregate level and sectoral level. His study captured the growth of the Indian service sector between 1970 and 2008 vis-à-vis FDI. Sen (2011) employed the OLS method and argued that the positive effect could be driven largely by important factors like transport, communication, trade, storage, and hotels

Ilboudo (2014) examined the correlation between foreign direct investment and the total labour productivity of the mining sector in Chile. The study was predicated upon the fact that liberalisation in Chile brought the state into an economic miracle in the post-Pinochet era. He deployed the Cobb-Douglas production function to conduct his empirical analysis and tested that portion of output that does not reflect in the calculation of labour and capital on its ability to increase sectoral growth for the mining sector of Chile. Ilbuodo (2014) asserts that the Chilean mining sector is the mainstay of the nation's economy and that the export of copper represents about two/third of the government's revenue. His results show that FDI influx has a long-term relationship with the labour productivity of Chile's mining sector.

Kaliappan et al., (2015), carried out a study on FDI and the growth of the services sector in the Association of South-East Asian Nations (ASEAN). The study was set out for understanding the accrued benefits by the services sectors in these countries, due to the FDI inflow, from 2000 to 2010. Kaliappan's et al., (2015), the expectation was answered in the empirical results, which stated that the FDI in the services sector had a positive and significant impact on the sectoral growth, while the level of inflation was discovered to negatively impinge on the growth, though in an insignificant manner. The positive impact of FDI within this period was concluded to be dictated by market size, trade openness level, infrastructural development, and human capital.

Fillat and Woerz (2011) investigated firms in the industrial sector of thirty-five Asian. OECD and Eastern European countries to ascertain the effect FDI has had on the sector. They resorted to industrial level data for a panel of the countries and argued that the influx of FDI would birth labour productivity that is high in the industrial sector of developing nations. However, their findings showed the existence of variations across industries. They suggested that policies

should be tailor-made to encourage foreign investment in industries with more labour productivity for higher outputs generation.

Also, Bijsterbosch and Kolasa (2010) had conducted a similar study to show the effect of FDI inflows on productivity by using the same technique as Fillat and Woerz (2011). They relied on the Central European nations for industrial level data and discovered that FDI leads to productivity increase for both sectoral and country analysis. However, they left a caveat that such increase largely is contingent upon the area and the absorptive capacity; thus, efficient labour has the propensity to produce an absorptive capacity that will deliver better benefits from the flow of FDI.

Thangavelu et al., (2015) selected five countries among the Association of Southeast Asian Nations to study how the labour productivity of the services sector is influenced by trade. Using the fixed effects and Generalised Method of Moments, they estimated the variables concerning the Philippines, Thailand, Indonesia, Singapore, and Malaysia between1990 and 2005. They used four subsectors for their analysis, namely: (1) the wholesale, retail, and hotel; (2) communication, transportation and storage (3) insurance, finance, and real estate; and (iv) social, community, and personal sectors (Thangavelu et al., 2015). The findings reveal that labour productivity will correspondingly increase the more a nation is export-oriented in all these five countries. Furthermore, increased openness in the form of FDI inflows results in an increase in the services sector's growth and output, which then provides inputs for the manufacturing sector in the region. As a result, they conclude that policies that encourage sufficient openness to foreign investment should be implemented in order to boost the growth of the Indonesian services sector.

Another study has been conducted into the effect of FDI inflow from two countries: France and Spain, on the total factor productivity of the manufacturing sector of Morocco (Azeroual, 2016). He took an empirical approach that was ground-breaking for the region. His study covered the period between 1985 and 2012, while he used the Generalised Method of Moments (GMM) system in dynamic panels for a subset of twenty-two branches of this sector. His finding reveals that there are variations regarding the impacts based on the origin of the FDI. Azeroual (2016) argues that the French's share of FDI into Morocco has negatively and significantly affected the TFP in technologies industries with a small and high level of structure, and in contradistinction to that, he argued that FDI from Spain was seen to be positive with a significant effect on the TFP of technologies industries. Such negative impact of

French's FDI was attributed to factors such as the gap in productivity of Moroccan and French companies, the rate of investment, and the control on technological transfer in the hands of French investors. Although with a weak positive impact, investment from Spain into Morocco was still significantly positive.

Looking at the key factors that aid the growth of the Palestinian's services sector, Morrar and Gallouj (2016) examinedstudied the effect of FDI on labour productivity using the panel data analysis. According to them, "there is a positive significant effect of FDI on the productivity of labour while that of the capital intensive service sectors exhibited a greater influence on labour productivity growth. Other public services like retail trade, sale, motor vehicles repair and land transport are on a weaker growth trajectory". Morrar and Gallouj (2016) add that political instability worsens the situation, as it can hamper growth in the productivity of the services sector. They recommend that the Palestinian national authority should adopt policies that can create new job opportunities for those who have lost their jobs in Israel, and at the same time, help in training the unskilled labour force to scale up economic growth.

Another study was done by Kirti and Prasad (2016), who researched the Indian economy and how FDI has impacted it and some sectors; that is, they carried out both country and sectoral analyses of the inflow of FDI into India. Using the popular Ordinary Least Squares (OLS) technique, these researchers calculated that FDI has both positive and negative effects on sectors and the economy. It was discovered that FDI causes unemployment when capital-intensive machinery is used to replace labour. In terms of sectoral study, Kirti and Prasad (2016) contend that if capital-intensive technology is used in the agricultural sector, which they identify as the most backward sector of the Indian economy, production would increase due to the spillover effects of technology transfer. However, the manufacturing and service industries are drawing more FDI due to their high labour productivity.

To simplify the relationship between FDI and economic growth, Saleh et al. (2017) undertook a study on Vietnam from 1986 to 2016. As a flip to the dominant perspective in the literature, Saleh and Colleagues examined the contribution of the Vietnamese services sector to the inflow of FDI into the nation; and found that the relationship is positive and significant. They argued that the level of contribution of the Vietnamese services sector to the FDI is being propelled by the existence of the government market driven policies and the culture. This argument was taken further the following year when Nguyen et al., (2018) used the service sector of Vietnam as a case study of how the Asian nations are engaged in intense competition to attract FDI,

resulting in higher government incentives. Nguyen et al., (2018) used the econometrics structural modelling techniques to analyse the data collected from two hundred and eighty-eight MNCs that were in the service sector in Vietnam. Their findings revealed that tax incentives, infrastructural development, and FDI policies are major determinants that brought about the high inflow of FDI following the economic reform of Vietnam in the service sector.

Studying the impacts of FDI on the growth of the manufacturing sector in Nigeria, Oladimeji (2013) used foreign technology in local manufacturing firms as an intervening variable. He argued that FDI has negatively impacted the growth of the manufacturing sector in Nigeria. This was within the context of the Chinese investment in Nigeria's manufacturing sector. Oladimeji (2013) observed that because of the reluctance of the Chinese to transfer their technical expertise and the lack of competition of firms in Nigeria's manufacturing sector, especially in the textile industry, there is less foreign exchange and, by implication, the undermining of sectoral growth. He concluded that the collapse of the infant textile industry due to the influx of Chinese counterfeit, adulterated, and sub-standard products (CAS), means that the sectoral growth is stifled.

Several scholars including Asiedu (2006); Njoku (2013) ; and Danmola et al (2017), built on the same premise and concluded that FDI impacted negatively the growth Nigerian manufacturing sector. It has not only made Nigeria more technologically dependent on foreigners to meet the manufacturing needs but has also created an appetite for foreign goods and services to the detriment of local ones. Can there be growth in a sector with such characterisation? These scholars' position was an outright no.

Ajibola et al. (2018) examined the impact of FDI on sectoral growth in Nigeria. Their study, which covered 1986 to 2009, provided an insight into this aspect that has been largely ignored in the literature. They chose the telecommunications, oil, mining and manufacturing industries as variables to study. They employed descriptive analysis, the unit-roots test, the Johansen co-integration test, an error correction mechanism, and the fully modified least-squares technique. Only the oil sector's sectoral GDP had a positive correlation with overall FDI in their correlation technique.

Their sectorial analysis revealed that only foreign direct investment inflows into the telecommunications sector had a positive relationship with Nigeria's economic growth, whereas FDI inflows into the manufacturing sector had a negative relationship with economic growth. In establishing the influence of FDI on sectoral growth in Nigeria, Ezeanyeji and Ifebi

(2018) conducted an empirical study in which they concentrated on the telecommunications sector. They employed an econometrics approach with the Ordinary Least Square (OLS) technique to explain the growth of Nigeria's telecommunication sector vis-à-vis the contribution of inflow of investment. The analysis of the regression model revealed that there had been an immense contribution of FDI to the smooth existence of Nigeria's telecommunications sector, especially in terms of its inputs to the nations GDP. They further recommended that the government should stimulate the long-term growth of the telecommunications sector through transformational policies, build formidable infrastructure in the form of power supply, and help to provide a stable political environment that can attract more investors into the nation.

Recently Wahab (2020) undertook a study on foreign direct investment and economic growth in Nigeria's service sector. His study encompassed thirty-seven years, focusing on 1981 to 2018, and it was essentially designed to test the role played by liberalisation policy in the discourse of FDI and sectoral growth in Nigeria, using the service sector of the nation a situation with or without a structural break. It was a time-series analysis that employed the Vector Error Correction (VECM) and the unit-roots test. Wahab (2020) argued that 'time-series properties were examined using both conventional and unit root tests with structural breaks to account for shift dummy in the series. Such analysis showed the series became stationary at the first difference, and it was the result that informed the use of VECM, which revealed that the services-led FDI had a long-run relationship with the growth of the economy's sector. Although it was seen that services led FDI propelled growth in the face of non-inclusion in a shift in policy, while the growth was redundant where the shift in policy was not included. However, the model short-run dynamics show significant and positive relationship between the services FDI and economic growth, where there was a break. While a negative and insignificant relationship between them was established, where we had a situation without a break. Thus, Wahab (2020) concluded that where there is no change in the government policy, service-FDI will continuously play a critical role in the growth of Nigeria's economy.

2.2.2 FDI and Economic Growth: A Firm-Level Review

Sasidharan (2006) examines firm-level data from India's manufacturing industries from 1994 to 2002. He investigated whether Foreign Direct Investment had a positive effect on the growth of local firms in India using the pooled ordinary least squares technique. He found significant

positive vertical spillovers but not horizontal spillovers. This was consistent with Aitken and Harrison's work (1999).The study, however, used a log of output for sales income to calculate Total Factor Productivity (TFP), which differs from calculating TFP from output. Furthermore, using pooled OLS for estimation yields inefficient results, raising concerns about the robustness of the findings (Subash, 2006).In the same year, Jorn et al. (2006) analysed the effects of the presence of foreign firms in local Hungarian markets on Hungarian firm's growth. The study investigated growth in the context of horizontal spill-overs from multinationals that were customers of Hungarian firms and forward spill-overs from multinationals that were input suppliers. The findings of the study were that growth occasioned by horizontal spill-overs, were significant, but there was no evidence that backward spill-overs made way for economic growth. Due to the great heterogeneity of Hungarian firms with respect to their productivity and size, the firms were divided into groups, smaller and larger firms. They used quantile regression to examine group-specific effects with growth groups. The study's findings showed substantial differences between the categories, with more profitable firms receiving more horizontal and backward spill-overs from international multinationals, leading to expansion, but receiving fewer forward spill-overs. This meant that the ability of locally owned firms to acquire expertise and reach higher levels of economic development was affected by growth heterogeneity.

In the same direction, economic growth powered by FDI at the firm level was studied by Blalock & Gertler (2009), who both explored how Indonesian firm capabilities affect the diffusion of technology, and in turn, portray consequences for economic growth. They used a panel data set on Indonesian manufacturers from 1988 to 1996. Their finding suggests that economic growth is greater for firms with more room to "catch up" than it is for already competitive firms. They assessed how much growth various domestic companies experienced and how they reacted to the arrival of foreign rivals. As a result of their observational study, Blalock and Gertler (2009) discovered that companies that invest in R&D and have highly trained workers embrace more technologies from international multinationals, which boosts economic growth.

Poole (2007) examined labour turnover mechanism to transmit growth from multinational to domestic firms using worker data from Brazil. The study looked at where growth occurred and how it was absorbed by local businesses. The study's findings suggested that the magnitude of wage growth from multinational corporations varied according to the sector and workers under consideration. The findings supported the hypothesis that higher-skilled workers are better able

to absorb information from multinational corporations. As a result, the study discovered strong evidence of positive growth via the worker mobility channel. However, since the report did not account for industry and time impacts, the findings could be skewed.

Pavel (2007) discovered signs of backward linkage growth in Czech manufacturing companies. He studied whether Foreign Direct Investment improved the efficiency of manufacturing firms. Using panel data collected from various firms in the region, he tested the hypothesis that local firms gained from supplying to multinationals and purchasing inputs from multinationals, thereby propelling growth.

The work of Msuya (2007) in the Eastern region of Africa has also been important in the context of FDI and growth on domestic firms. He looked at the agricultural sector of Tanzania in relation to the effects of the FDI on it, using a qualitative approach for his study. His findings became helpful, particularly within the context of his argument that FDI in the country is largely attracted by small crop production or a system of farming by an organized group of smallholders compared to others. It is Msuya's (2007) view that "labour productivity depends on many macroeconomic variables including investment regulatory frameworks, policies that promote macroeconomic stability, and improved physical infrastructure". More so, he recommends that further integration between foreign players and the small business owners would not only engender strong bonds but will also help to boost the influx of investments into the agricultural sector of the economy, and in the long run, contribute to sectoral growth, and alleviate poverty.

Meyer & Sinani (2009) studied FDI and economic growth in Central and Eastern Europe's (CEE) economies. These were transitional economies. Their study examined the different FDI can make under two different systems of capitalism and communism, using the labour effect. It was more of a comparative study in which economic growth was x-rayed under the two systems. According to them, state-owned firms as defined by either socialism or communism had substantial over employment, FDI with its characteristic enterprise restructuring involved substantial reductions in employment, which can slow economic growth. However, after a period of rising FDI in the region, the unemployment rate began to drop, though it has not reached the level experienced in the pre-transitional period. They claimed that FDI had also brought about institutional changes in transitional economies to accommodate the necessary technological, economic and managerial changes which accompany foreign investment. Besides, as evidenced from Meyer & Sinani (2009) findings, foreign investors favour

economies with stronger institutional arrangements because their investments would be better protected from expropriation or corrupt practices that invariably enhance their profitability.

The review of empirical studies on the relationship between FDI and economic growth shows that emphasis has been placed on the aggregate FDI in relation to economic growth. This can be affirmed in the following works (Scaperlanda, 1967; Wallis, 1968; Hymer, 1976; Basu et al., 2003; Elheddad, 2019; Cipollina, 2012; Koojaroenprasit, 2012; Vo *et al*. 2019; Dinh et al. 2019), among others. Msuyi (2007), Alam (2008), Maathai and Sahoo (2008), Bang *et al*. (2007), Dürnel (2012), and Mullick (2015), among others. Alfaro (2003), Morrar and Gallouj (2016) are very important as literature covering explanation on FDI and sectoral growth. Moreover, to Nigeria specifically, Oladimeji (2013), Danmola et al. (2017), Njoku (2013), Ajibola et al. (2018), Ezeanyeji and Ifebi (2018), and Wahab (2020) are some of the literature on a sectoral and firm-level analysis of FDI and economic growth. Thus, there is a dearth of systematic studies of comparative analysis of how aggregate FDI, compared to sectoral level FDI, have impacted Nigeria's economic growth. This is the reason why the contribution of the study in this area becomes very critical.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter captures the research methodology, which shows the dependent and independent variables of the study and how they are measured. This is to show the logic and protocol of inquiry used in the study of the effect of foreign direct investment on the economic growth of Nigeria from 1980 to 2018. It shows the variables for the total FDI and sectorial FDI impact on economic growth measured by the change in GDP per Capita. Secondary data are obtained from data sources like the World Bank, Central Bank of Nigeria, and the National Bureau of Statistics (NBS). The Chapter also shows how the Autoregressive Distributive Lag (ARDL) model is used to estimate the coefficients for the variables for the sectorial FDI and aggregate FDI. Appropriate tests are conducted, including unit roots test for stationarity and cointegration analysis to estimate the existence of long-run relationship among variables.

3.1. Data

3.1.1. Dependent Variable

Gross Domestic Products Per Capita (GDPPC in equation one below) as an indicator of Economic Growth. Economic Growth is one of the main targets of development economics (Todaro, 2020), which defines development to include expanding the range of economic and social choices, raising the levels of living and increasing the availability of life-sustaining goods. The stability of growth is affected in general by the institutional strength and systemic capacity that influence political leaders' policies and choices (Balcerowicz and Rzonca, 2015).

The World Bank (2019) defines GDP at purchaser's prices as "the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products." Similarly, gross domestic product (GDP) is defined as "the total final output of goods and services produced by the country's economy within the country's territory." by residents and non-residents, regardless of its allocation between domestic and foreign claims" (Todaro, 2020).

GDP per capita is considered one measure of a country's economic level. Gross Domestic Product (GDP) per capita represents an average of GDP for the country. GDP per capita is obtained by dividing GDP at current market prices by the country's population (Bureau of

Labour Statistics, 2012). The change in the level of GDP/Capita is therefore used as an indicator for growth.

Researchers and statistical agencies have widely employed the annual growth in GDP (i.e., the annual rate of change in GDP) and the annual growth in GDP per Capita as indicators for calculating the economic growth and hence the output of an economy at any given time (Khamis et al., 2015). Callen (2008) states that GDP is critical, as it gives information on the size of the economy in each country and how such an economy is performing. According to Callen (2008), the relationship between increased GDP per capita and increased FDI inflow is that improvements in the production of goods and services per person (GDP per capita income) are commonly used as an indicator or an indication of whether a country's average citizen is better or worse off. This is important for investors because it could be interpreted as a measure of citizens' buying power, which would allow investors to favour one country over another.

3.1.2. Independent variable

Foreign Direct Investment (FDI)

This study uniquely concentrates on a comparative analysis of how aggregate (total) FDI has influenced Nigeria's economic growth and how sectorial FDI has done the same in the period between 1980 and 2018. Primary sector FDI includes the oil and gas and agricultural sectors' FDIs, while Secondary sector FDI includes construction and manufacturing sectors' FDIs. Service Sector FDI, as used in this study, takes the communication services as the single indicator. The sectorial datasets were extracted from the Central Bank of Nigeria Statistical Bulletin (CBNSB) and converted into dollars based on the currency's exchange rate for each of the years they represent (1980 to 2018). For the aggregate FDI, the study relies on the dataset extracted from the World Bank

3.1.3. Control Variables

Exchange Rates

Exchange rates represent one of the essential macroeconomic instruments that determine the stability of an economy, buttressed as it is by the credence and full attention given to its fluctuation by monetary policies actors as a decider of prices of both domestic and foreign goods. It explains the amount or how a unit of a domestic currency can be exchanged for another unit of currency in other nations (Javed and Farooq, 2009). To capture appropriately,

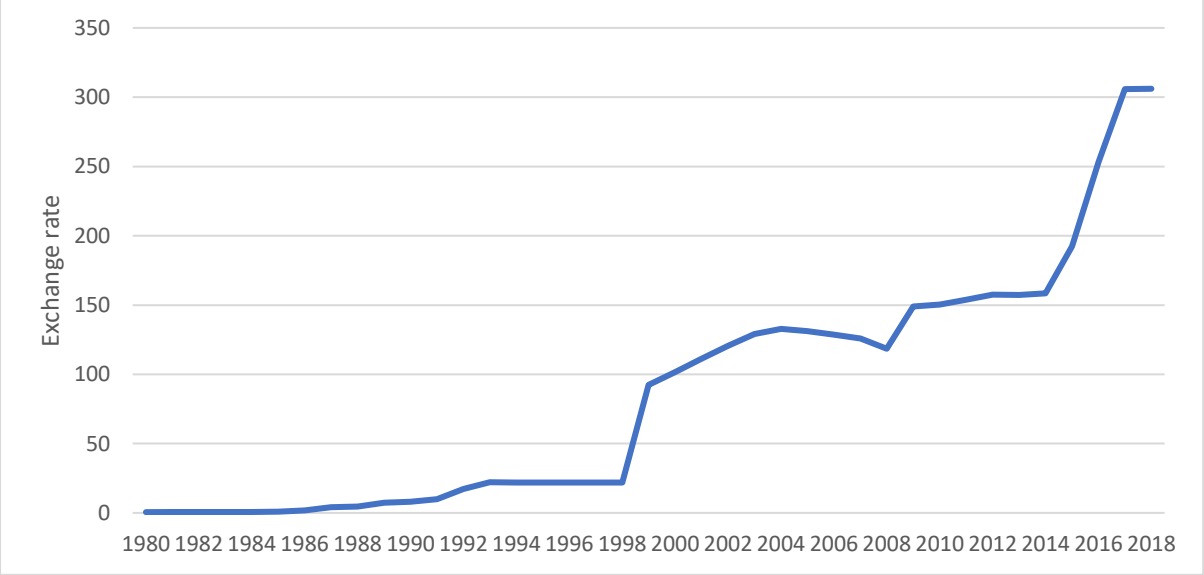
Odili (2014) presents it in a simple version by arguing that "exchange rates is the domestic currency price of a foreign currency". Such price is largely influenced and determined by demand and supply of currency, which is often regarded as critical elements that are central to exchange rates instability. This is revelatory of the credence that leaders of nations focus on investing their money to align with favourable exchange rates.

Table 2: Exchange Rates for Nigeria from 1980 to 2018

Year	Exch Rate	Year	Exch Rate	Year	Exch Rate	Year	Exch Rate
1980	0.55	1990	8.04	2000	101.70	2010	150.30
1981	0.62	1991	9.91	2001	111.23	2011	153.86
1982	0.67	1992	17.30	2002	120.58	2012	157.50
1983	0.72	1993	22.07	2003	129.22	2013	157.31
1984	0.77	1994	22.00	2004	132.89	2014	158.55
1985	0.89	1995	21.90	2005	131.27	2015	192.44
1986	1.75	1996	21.88	2006	128.65	2016	253.49
1987	4.02	1997	21.89	2007	125.81	2017	305.79
1988	4.54	1998	21.89	2008	118.55	2018	306.08
1989	7.36	1999	92.34	2009	148.90		

Source: World Bank Data, 2021

Figure 4: Exchange Rates for Nigeria from 1980 to 2018"



Source: Data Extracted from the World Bank Data, 2021

Policymakers are driven to predicate their decisions of how much import and export are favourable for exchange rates' stability (Zakari, 2017). It is the determinant for what amount of goods to be manufactured, services to be rendered, and impacts on the price status of import and export of a nation and its balance of payments and money taken for reserves (Javed and Farooq, 2009). In relating the concept of exchange rates to Foreign Direct Investment, Mansoor and Bibi (2019) argued that exchange rate plays a principal role in the macroeconomics of a nation in general and specifically determines the direction of FDI to a nation. Froot and Stein (1991) averred that this relationship could be captured within the ambience of an imperfect and non-competitive market, where there is an astronomical wealth increase for foreign players due to the real depreciation in the currency of a domestic economy.

This increase in wealth of foreign firms, in comparison to domestic ones subsequently; and in the long run encourages and emboldens them to invest more businesses in the economy of the host country; thus, contributing to the level and growth of Foreign Direct Investment of a nation (Froot and Stein, 1991). According to Goldberg and Charles (2005), the exchange rate is one major factor in a Foreign Direct Investment decision, as a devaluation of a country currency can lower foreign production costs, enhance foreign acquisition or give foreigners an edge in buying the country's asset, and stimulate FDI. Javed and Farooq (2009) aver that the depreciation in exchange rates and their levels often impinge on the performance of Foreign Direct Investment. Since there are higher profits from domestic and international sales, a weakening of the domestic currency will possibly increase the marginal benefit of spending an additional capital unit. A host country's current account balance can be viewed as a barometer of its currency's dominance.

A deteriorating current account balance is likely to cause the host country's currency to depreciate. The exchange rate is critical in making spending decisions and deciding on Foreign Direct Investment because it is a relative price. It has an effect on the relative prices of domestic and imported products, as well as international demand for domestic goods; thus, a devaluation of currency causes domestic goods to be cheaper, while foreign goods are made more expensive, which will, in turn, increase the level of demand for local products, thus improving the country's trade balance and promotes domestic products (Bilawal *et al.,* 2014). Extant literature is replete with arguments on the relationship between exchange rate and FDI (Cambazhoglu and Gunes, 2016; Melku, 2012; Husted and Melvin, 2010; Joseph et al., 2009).

While Cambazhoglu and Gunes (2016); Odili (2014); Osinubi et al. (2009); and Jeanneret (2005) argue that there is a positive effect of exchange rate volatility on FDI, and others show that there is a negative effect Küçüksoy and Çiftçi, (2014). A positive effect can be justified by the notion that FDI substitutes for exports. Increases in currency volatility between the headquarters and host countries cause currency depreciation (Bilawal et al., 2014). When the value of the local currency and goods falls, exports become cheaper and imports become more expensive. The literature pioneered by Dixit and Pindyck provides justification for a negative impact of exchange rate volatility on FDI (1994). Direct investment in a country with high exchange rate volatility will produce a riskier stream of profits. As long as this investment is partially irreversible, there is some benefit to deferring it in order to gather more information. Countries with high currency risk would lose FDI to countries with more competitive currencies due to the small amount of possible direct investments (Foad, 2005).

When the price of crude oil changes in the market, the country's exchange rate changes in its direction, and it, in turn, affects the amount at which both foreign and domestic commodities are bought and sold on the market. The suboptimal investment ratio in Nigeria is caused by a variety of factors, the most prominent of which is exchange rate instability, particularly since the end of the exchange rate control policy (Osinubi, 2017). High inflation, high lending rates, and a low and unpredictable domestic currency exchange rate resulted in negative returns on investment in some situations, discouraging investment, particularly when financed with loans. The exchange rate of Nigeria's currency (Naira) has continued to fall in all sectors of the foreign exchange market since the late 1980s, when the country implemented the Structural Adjustment Programme (SAP) (see figure 4). This downslide is one reason why Nigeria has not fully actualised its potentials in attracting foreign investors fully hence, the connection between exchange rates and Foreign Direct Investment. Therefore, to answer the questions that inform this study, the World Bank data for the official exchange rate in Dollar (USD) from 1980 to 2019 is used.

Inflation

The increase or decrease in the level of price is very significant in the effective performance of an economy. The price increase refers to inflation; Inflation is the continuous increase in the price level (Okafor, 2016). It produces, either positive or negative, consequences for an economy; and determines the future direction of investment in the nation. This could be exemplified in this popular illustration that an increase in capital inflows increases the local currencies and as a result, the effectiveness of export industrials will be reduced, potentially

leading to an increase in inflation (Adaramola and Dada, 2020). Scholars have identified some economic benefits of inflation. According to Omankhanlen (2011), there is an exchange between inflation, tariffs, and other indirect taxes which can result in the government imposing positive inflationary pressures. Another advantage of inflation, according to Krugman (1998), is that policymakers' commitment to keeping the inflation rate down restricts the central bank's ability to mitigate adverse supply shocks. According to the author, this weakness may have contributed to the Japanese economy's depression during the 1990 deflation. Third, inflation acts as a mechanism to make nominal wage incomes more flexible (Lucas, 1990). The old structuralist and Philips curve views (Fischer and Mayer, 1980; Karanassou and Sala, 2009) that inflation is good for growth up to a certain point have been replaced by the belief that higher inflation slows economic growth, and some recent studies have found empirical evidence for this opinion (Balcerowicz and Rzonca, 2015). For example, in an economy dominated by fixed nominal prices as a result of policies of the government, the relationship between these policies and inflation may result in poor economic performance. A nominal interest rate cap combined with a high inflation rate often results in a negative actual interest rate. Overvaluation may result in capital flight and a slowing of inflows of investment (Ahn et al., 1998). Inflation, it is widely assumed, is a monetary phenomenon mainly dictated in the long run by monetary policy (McCcandles and Weber 1995). Ball (2006) suggests that structural reform, which would allow for stronger monetary policy mechanisms, may be the primary explanation for the global overall decline in inflation levels in the last ten years. In a study of developed and emerging economies, Vega and Winkerlried (2005) found that implementing inflation-targeting strategies significantly reduced the mean inflation rate.

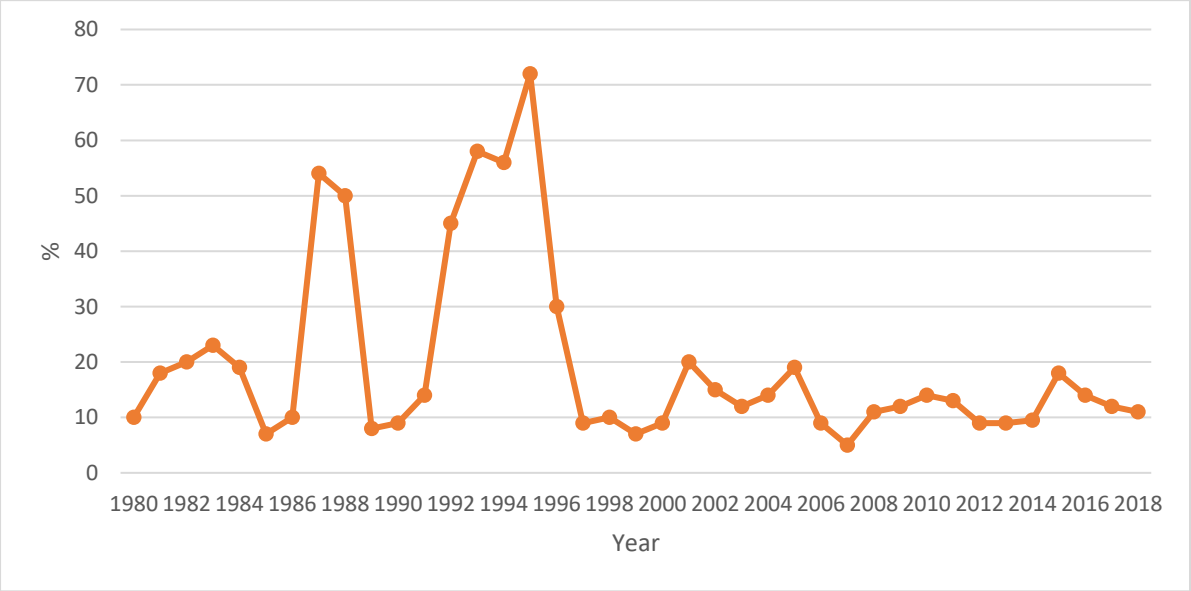
According to a number of reports, inflation has a negative impact on foreign direct investment. Xaypanya et al., 2015; Nnadi and Soobaroyen, 2015; Sayek, 2009; Andinuur, 2013). Inflation is a predictor of macroeconomic instability, according to Nnadi and Soobaroyen (2015) and Andinuur (2013), and higher inflation rates tend to discourage prospective and future foreign investors. In contrast to the preceding viewpoint, Obiamaka et al. (2011) contend that inflation in the host country will also have a favourable effect on FDI inflows if a certain threshold amount is not crossed. Popkin's (1965) separate rate of return theory describes the association between inflation and FDI in an indirect way. It holds that FDI is caused by international variations in actual rates of return (inflation-adjusted). According to the hypothesis, FDI transfers from countries with low investment real rates of return to countries with higher investment real rates of return. Few scholars conducted studies that backed the separate rate of

return hypothesis (Asiedu, 2002; Ali & Guo, 2005; Fedderke & Romm, 2006;). In conclusion, the theoretical framework states that a rise in the marginal real rate of return on foreign assets (due to low inflation) raises the stock of foreign to domestic capital holdings. Romer (1993), Kim et al., (2008), and Nazir et al., (2012), among others, performed empirical studies to determine the correlation between inflation and Foreign Direct Investment. According to the study undertaken by Romer (1993), 'higher inflation is often experienced in closed economies. He claims that central banks in more open economies find currency fluctuations caused by money shocks more painful than their counterparts in closed economies, and therefore exercise greater caution. Various researches have examined Romer's claim in various methods and found a negative association between inflation and trade openness. Hence, Kim and Beladi's (2004), Aaron and Mvellbaver's (2007), and Badinger's (2007) observations both corroborate Romer's results. Rower concluded that there was no major transparency, that is, inflation relationship, among the selected OECD economies. Using variables such as export, FDI, remittances, and inflation, Nazir et al. (2012) examined the impact of capital inflows on domestic inflation in Pakistan. The author discovered a connection between remittances from foreign direct investment, exports, and inflation. The impact of capital inflows on domestic inflation, monetary expansion, and exchange rate volatility was studied by Rashid et al. (2010). Variables like real GDP growth, inflation, national saving, fiscal deficit, credit to the private sector, weighted average lending rate, public debt, and current balance were used to calculate these effects. Using linear and non-linear co-integration and Granger causality analyses, the authors discovered that capital inflows had a substantial inflationary effect between 2000 and 2007. Kim et al. (2008) used the VAR model to examine the complex relationship between foreign direct investment and economic growth from 1985 to 1999, and whether an increase in capital flow would balance an increase in asset price by using price level, demand, capital inflow or portfolio inflows (as a ratio of GDP), land price and stock price, as variables. Capital inflows have contributed to asset price gains, according to the findings, but capital inflow shocks only account for a small portion of asset price uncertainty. Similarly, Balderas et al. (2005) used vector autoregression to investigate how remittances influence the relative market price adjustment spread and aggregate inflation in Singapore between 1990 and 2000. (VAR). The authors discovered an optimistic but not statistically meaningful effect of remittances after 1994. Similarly, Ercakar (2011) investigated the long-run relationship between GDP rise, FDI, inflation, foreign trade and the long-run relationship between GDP and microeconomic variables. His findings revealed that inflation, FDI, and trade surplus all have a positive and statistically relevant impact on GDP growth. According to the study, import coverage of export

also has a positive impact on productivity. The long-run correlation was examined using the ARDC and VECM.

Any form of continued instability instigates distortion towards the perception of the future profitability of FDI in the host country. Low inflation in the history of a nation will likely promote FDI as a primary driver of capital inflow; thus, given the backdrop of inflation in the Nigerian economy, this thesis expects a negative relationship between FDI and inflation. In relation to this study, inflation is defined by annual consumer price ($); and the following figure showing inflation is based on the data extracted from the World Bank database.

Figure 5: Inflation, Consumer Prices (annual %)- Nigeria



Source: World Bank database, 2021

Interests Rates

Interest rates are the sums paid on borrowing money and are generally calculated as a proportion of the total amount borrowed, but they differ in percentages (Pettinger, 2017). According to the source, interest rates often reflect the return on money deposited in a deposit or on an asset, such as a government bond. In business, all actors seek to minimize cost and increase returns on the savings made. This bears corollary with the concept of interest rate. It is the cost of borrowing and returns on savings (Fornah and Yuehua, 2017).

Interest rate is an important constituent for a foreign investor to choose its business model in a host country. Investors will channel their investments from a low return on investment to a higher return on investment. This is due to the incentives for foreign investors that aim at higher returns (Chingarande, *et al*., 2012). Emmanuel *et al.*, (2019) provide the interrelationship embedded in interest rates, exchange rates, and Foreign Direct Investment. In their opinion, interest rate volatility and exchange rate volatility are critical to FDI inflows to a developing country like Nigeria, which is currently transitioning to an emerging market. A spike in interest rates would allow the actual real exchange rate to rise (Emmanuel, et al., 2019). As a result, fluctuations in the exchange rate and interest rate have a consistent impact on Foreign Direct Investment inflows, resulting in increased economic growth. Higher interest rates boost a country's currency's worth. Higher interest rates encourage international investment, rising demand for and the value of the host country's currency. The relationship that persists between higher interest rates and inflation is one of the key complicating factors. A poor exchange rate in the host country will draw more FDI by making it easier for foreign corporations to buy properties.

The interest rate adjusted for inflation, according to Singhania (2011), is a decent indicator and a significant variable of FDI inflows. Investors will seek low-cost investment or lower interest rates before investing in higher returns or higher interest rates. It implies that money would flow from a low-interest-rate country to a high-interest-rate region. The relationship between interest rates and FDI has been studied empirically. In this sense, Chakrabarti's (2001) work can be appreciated. He discovered a favourable association between interest rates and FDI in India, while Chingarande et al. (2012) contend that interest rates had no meaningful effect on Zimbabwean FDI.

A relatively high interest rate in a host country, according to Gross and Trevino (1996), has a favourable impact on inward FDI. However, if foreign investors depend on the host country's stock market to collect FDI funds, the effect may be in the opposite direction. According to the findings of this report, interest rate is concerned with what is compensated or paid for with income, or, more generally, the cost of borrowing. It is understood that investors are both lenders and creditors, and the data gathered from the World Bank database reflects prime lending rates in dollar value.

Trade Openness

Trade openness is the ratio of import and export of goods and services to the GDP of a nation. Because of globalisation and the adoption of market orthodoxy and trade liberalisation, openness to trading has geometrically increased among nations. This has brought substantial benefits to the economy such as transfer of skills, increased technology transfer, higher labour and TFP as well as economic growth and development to several nations. How much of a state's trade policies liberalised impacts the output level and economic activity (Zaman *et al.,* (2018); thus, foreign investors' ability to spend their capital is often directed toward favourable policy markets and adequate infrastructure. The host country's environment purely induces foreign Direct Investment (FDI) inflows. If host countries succeed in having vast customer markets, favourable regulations, and adequate infrastructure, they can achieve significant economies of scale, as well as cost efficiency and increased trade (Su et al., 2019)

On the methodological front, Liargovas et al. (2012) investigate the importance of trade transparency in drawing Foreign Direct Investment inflows by observing 36 developing-world countries from 1990 to 2008. In 2001, Wacziarg discovered that trade openness is more important for long-run economic development. Kakar and Khilji (2011) presented a unique study on the correlation between foreign direct investment and trade transparency and economic development in Malaysia and Pakistan from 1980 to 2010. They discovered that trade openness has a long-term positive impact on Malaysian and Pakistani economic development. In 2006, Barlow discovered that trade liberalisation has a positive effect on productivity. Jenkins and Sen investigate the effect of foreign direct investment and trade transparency on work and development in developed countries in 2006. Neumayer and Soysa (2004) investigate the relationship between trade transparency, Foreign direct investment, and child labour. They discovered that countries that are more open to trade have a higher stock of FDI inflows, which lowers the incidence of child labour, implying increased work prospects for adults and development.

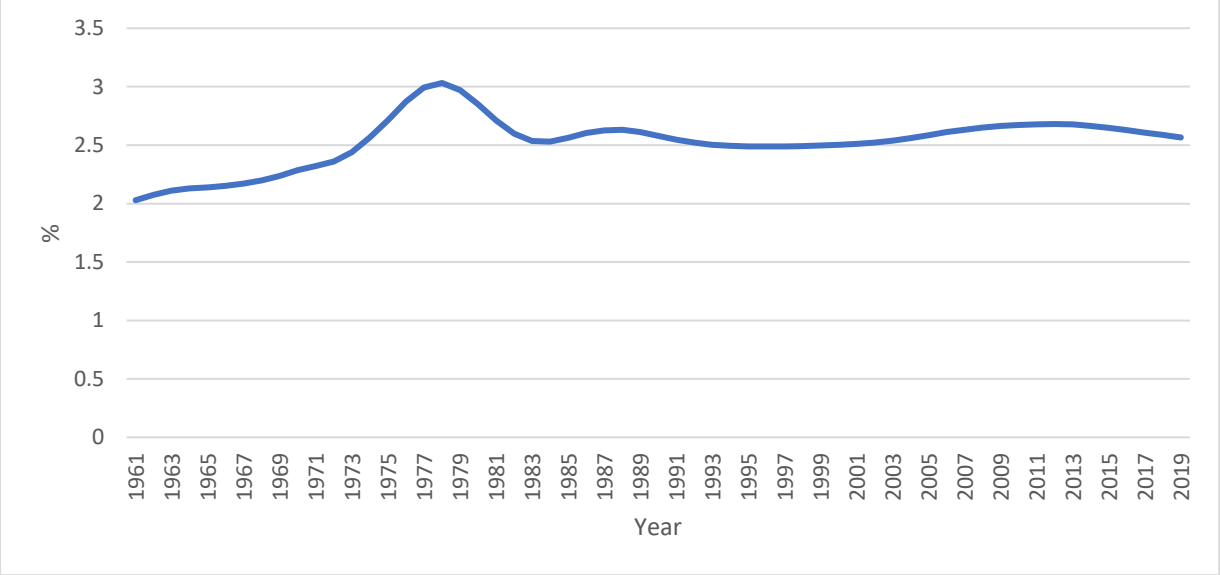
Trevino and Mixon investigate the relationship between strategic factors such as space, time, and FDI in seven Latin American countries in 2004. They discovered that Multi-National Enterprises (MNEs) invest in nations where the gap between the home and host countries is short. Abrego investigated the correlation between trade liberalisation and foreign direct investment in 1999 while researching the economies of OECD countries and Costa Rica in 1990-91. He argued that full trade liberalisation reduces welfare by causing capital outflows

and tax revenue reduction. As a result, trade openness data was used and derived from the World Bank database in the framework of this thesis.

Population

It is the total number of people residing in a particular geographical location at a particular time, irrespective of the nature of their citizenship. The World Bank (2019) agrees with this perspective when it argues that the population speaks to those inhabiting a territory, whether they are legal citizens of such location or immigrants. How many working-class populations in a nation explains the behaviour of FDI in the state.

Figure 6: Population Growth (Annual %)



Source: World Bank, 2021

Capital Formation

This was initially called the gross domestic investment, and it refers to the net capital or additions of capital goods (Boorman et al., 2006). World Bank (2019) captures capital formation through its vital elements, such as "land improvements (which can include but not limited to drains, fences etc.); machinery, plant and equipment purchases; and the building of railways, roads, and the like, including industrial and commercial buildings, schools, offices, hospitals and private residential dwellings". Krkoska (2001) showed that an increase in capital formation boosts the FDI of a nation. Thus, based on his conclusion, gross capital formation has a positive relationship with FDI. Therefore, to estimate FDI inflow and its effects on growth, capital formation is used as one of the control variables.

3.2 Descriptive Statistics

Tables 3.1 and 3.2 below present a visual report of the descriptive statistical analysis performed on all the controlled variables in this study. From table 3.1, it can be seen that the economy of Nigeria is easily prone to high-level inflation, as it had maximum inflation of about 73 per cent, with about 19 per cent on the average in the period 1980 and 2018. Also, trade openness has a 53% maximum, with an average of 32% in the same period and a standard deviation of 13%. The lending interest rate was 32% maximum, 18% average, with just about 5% away from its average; whereas the country population growth stood at about 3% maximum, and an average of 3%, and 0.06% was far from its average. The exchange rate had an average of 89% and a standard deviation of 87 per cent.

The table shows the primary sector maximum to be 23500000 at an average of 142000000000 percent. We observe that the Capital formation variable was about 2 percent GDP maximum and 5 percent GDP on average, with a standard deviation of 3 per cent. Firstly, one must first establish that correlation shows the strength of the relationship between two or more variables. A correlation coefficient of 0.5 and above shows a strong correlation. In contrast, less than 0.5 shows a weak correlation. The table below shows that capital formation and inflation both have a negative and weak correlation with economic growth, being at -0.396 and -0.217 respectively between 1980 and 2018. Other variables like primary sector, secondary sector, services sector, population growth, trade openness, exchange rates and lending rates positively correlate with economic growth.

Table 3.1: descriptive statistics for variables used (1980 to 2018)

Variable	Obs	Mean	Std.Dev.	Min	Max
DGP Growth	38	.545	5.394	-15.45	12.457
Primary	38	1.42e+07	5880000	6460000	2.35e+07
Secondary	38	3760000	2550000	1510000	9270000
Serivce	38	2340000	2910000	202000	8530000
Capitalfor~n	38	4.76e+10	3.08e+10	1.23e+10	1.47e+11
Population~h	38	2.582	.068	2.489	2.71
Inflationr~e	38	19.35	17.244	5.388	72.836
Tradegdp	38	32.255	12.567	9.136	53.278
Exchange Rate	38	88.544	87.137	.618	306.084
Lendingint~e	38	17.758	4.843	8.917	31.65

Source: Author's work based on data from World Bank and CBN

Table 3.2 Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) GDP Growth	1.000									
(2) Primary	0.383	1.000								
(3) Secondary	0.103	0.851	1.000							
(4) Serivce	0.150	0.858	0.980	1.000						
(5) Capital Formation	-0.396	0.323	0.497	0.490	1.000					
(6) Population Growth	0.027	0.458	0.576	0.615	0.711	1.000				
(7) Inflation Rate	-0.217	-0.353	-0.290	-0.322	-0.385	-0.316	1.000			
(8) Trade GDP	0.502	0.379	0.067	0.115	-0.258	-0.147	-0.055	1.000		
(9) Exchange Rate	0.278	0.905	0.861	0.883	0.320	0.380	-0.350	0.279	1.000	
(10) Lending Intere~e	0.454	0.118	-0.069	-0.092	-0.588	-0.426	0.371	0.595	0.092	1.000

3.3. Model Specification and Methodology

3.3.1. The Model

This study attempts to estimate two main models. The first is the disaggregated form, taking the sectoral FDI and its impacts on the economic growth of Nigeria, while the second model is the aggregated FDI modelling the effect on economic growth.

The first model is formulated as follows.

$$GDPPC_t = a_0 + a_1 FDI\_P_t + a_2 FDI\_S_t + a_3 FDI\_T_t + a_4 X + e_t \quad \text{equation (1)}$$

While the second model is formulated as

$$GDPPC_t = b_0 + b_1 FDI\_TOT_t + b_4 X + e_t \quad \text{equation (2)}$$

Where:

GDPPC = Gross domestic product per capita.

FDI P = Foreign Direct Investment inflows into the primary sector.

FDI S = Foreign Direct Investment inflows into the secondary sector.

FDI_T = Foreign Direct Investment inflows into the service sector.

FDI_TOT = Total Foreign Direct Investment inflows.

X = represents any control variable.

e_t = represents the error term;

t = represents the time period of the associated variable.

3.3.2. Methodology

This section is about different techniques that are adopted to test for the model to use. This begins with the unit root test, followed by the cointegration test, and then the specifications of the ARDL models.

***Unit Root**:*

Gujarati (2005) put forward that the main reason for the unit root test is to test for stationarity at the level and first difference to escape the risk of spurious regression. The unit root test is a test of the stationarity to ascertain the constancy of the mean and variance in any given dataset (time-series data set). Regression is sensitive to the consistency of mean and variance, without which the regression will yield spurious results and will therefore become not useful (Gujarati 2009 & Murshed 2020). Several unit roots tests differ in the level of significance (size) and the probability of rejecting the null hypothesis (power).

A critique of the unit root tests, which explains the usefulness and limitation of different unit root tests, including Augmented Dickey-Fuller (ADF) and the Phillip–Perron (PP) Unit Root Tests, is given by Gujarati (2009). However, Faisal *et al.* (2016) argued that selecting the most suitable unit root test is very challenging in practice. There are about five different tests for this, and most scholars (Enders, 1995; Ezeanyeji and Ifebi, 2016, among others) use both the Augmented Dickey-Fuller (ADF) and Phillip Perron (PP) to obtain better results. The different tests will help to enhance the robustness of selected variables.

This study, therefore, adopted both the ADF and PP tests to confirm whether all variables are either stationary at level or at first differencing. The tests were done one after the other for all variables, and they were done against null hypotheses (H_0) that all variables had unit root. Unit root analysis revealed that the variables were either stationary at level or after first differencing; all the null hypotheses were rejected (in table 4.1). Also, the lagged difference terms of the

regress were added to control all possible serial correlation in error terms to eliminate any random walk in the series (as shown in table 4.2 in chapter four). Testing for unit roots was judged by the disparity between the ADF results and that of critical value that is 5% at a significant level. This means that when the ADF test statistic produces a greater value than that of the one-sided MacKinnon P-value, the hypothesis is rejected.

The ARDL model was used to investigate the short-run and long-run relationships between independent and dependent variables. In particular, the ARDL was used in this analysis to evaluate the long-run relationship between series with different order of integration since the re-parameterized result produces short and long-run dynamics and relationships. Pesaran and Shin (1999), as well as Pesaran et al. (2001), In addition, the ARDL bounds test developed by Pesaran et al. (2001) is used in conjunction with the F-statistics or Wald test to assess the value of the lagged coefficient of variables. The ARDL bounds test is divided into three steps: 1. Stationarity, 2. Cointegration, and 3. Causality.

Co-Integration Analysis*:*

The cointegration analysis occurs when two or more nonstationary time series:

- Have a long-run equilibrium.
- Move together in such a way that their linear combination results in a stationary time series.
- Share an underlying common stochastic trend.

The first step is to focus on the variables in the study's long-run cointegration. The F-test is useful for determining the long-run cointegration of the predicted variables in the given model. The Wald test, with the lagged coefficients set to zero, can be used to perform a joint significance test (kailTang, 2003). If there is more than one lagged coefficient, the Wald measure, also known as the joint test of relevance, is used. The F-test or Wald test is used to determine the long-run relationship by applying it to Pesaran et alcritical .'s values (2001). The Wald measure of joint significance is used, and the measured F-statistics value is compared to both the upper and lower bounds critical values proposed by Pesaran et al. (2001) at (1 percent, 5%, 10%) significance levels. Pesaran et al. (2001) present values in a tabular format, depending on whether the model includes an intercept and a pattern or a restricted intercept.

The tabulated critical value includes all upper and lower bounds limits values, as well as all conceivable categorizations of the variables as I(0), I(1), or mutually cointegrated. If a situation where the estimated F-statistics value is greater than both the upper and lower bounds critical values, then the null hypothesis will be rejected that there is no cointegration, implying that the calculated variables in the specified models are said to be co-integrated. If the estimated F-statistics value is in the lower and upper limits of the critical value, the decision is inconclusive. If the F-statistics value is less than the lower bound, the variables in the predicted model are not co-integrated. The Johansen co-integration will be adopted to confirm the existence of first-order auto-correlation and co-integration of variables. The R^2 and adjusted R^2 will be used to estimate the degree to which the explanatory variables influence the variable of measure. Various diagnostics and model reliability checks are run to assess the optimal fit of the ARDL model. The diagnostic studies look at serial correlation, heteroscedasticity, Jarque-Bera normality, and the residual correlogram to see if there is autocorrelation at both lags. The Ramsey RESET and CUSUM tests suggested by Brown et al (1975) are used to assess the structural integrity of the ARDL model. The ARDL test's robustness is evaluated using Johansen and Juselius' (1990) maximum likelihood cointegration approach.

Autoregressive Distributive Lag (ARDL) Model:

The Autoregressive Distributive Lag model (ARDL) is a methodology used for estimating the effect of FDI on Nigeria's economic growth. It is used to measure both short and long-run elasticity (Gujarati 2009 & Mushed 2020). The ARDL model includes lagged values of both the dependent variable and explanatory variables, besides the current variables, among its explanatory variables in the regression model. It is a method of examining co-integration relationships between variables Pesaran et al. (2001). ARDL tolerates variables whose integration order is mixed without running the risk of bias as other techniques. ARDL follows two steps: captured under the short and long run (Mushed, 2020).

Short and Long-Run Dynamics

When there is no cointegration amongst variables, then the short-run relationship is specified (Asiedu, 2004), and this means that the generalized model of ARDL is used. It is also important to note that whether or not there is cointegration, it is still essential to test for short-run causality (Egbo, 2010). These short-run terms go with the difference operator. The causal impact is estimated by the t-stats of the coefficients of the short-run terms. Then the optimal lag, which must have been earlier determined, is used, and where there are several lags for each regressor,

we can form a joint F test of the coefficients using the Wald test. The generalized model is specified as:

$$\Delta lnGDPPC_t = \gamma_1 + \sum_{i=1}^{p} \gamma_{1i}\ \Delta lnGDPPC_{t-i} + \sum_{j=0}^{q} \gamma_{2j}\ \Delta lnFDI_{t-j} + \sum_{k=0}^{r} \gamma_{3k}\ \Delta lnINF_{t-k} + \sum_{l=0}^{s} \gamma_{4l}\ \Delta lnEXR_{t-l} + \sum_{m=0}^{r} \gamma_{5m}\ \Delta lnINR_{t-m} + \sum_{n=0}^{s} \gamma_{6n}\ \Delta lnTO_{t-n} + \sum_{o=0}^{u} \gamma_{7o}\ \Delta lnCFM_{t-o} + \sum_{z=0}^{v} \gamma_{8z}\ \Delta lnGFDI_{t-z} + e_t$$

equation (3)

Where

Δ means the first difference of the original variables

ln = represents the logged value of the original variables

When there is cointegration, a long-run relationship exists amongst variables, and in such a case, the error correction model (ECM) will be specified. The ECM outputs include the short-run component of the ARDL specification (the differenced terms); then the t-statistics test is performed in order to find the significance of each short-run regressor, and the joint F statistics of the short-run coefficients of all lagged values of each regressor is performed to determine their statistical significance.

The ECM is specified below:

$$\Delta lnGDPPC_t = \gamma_1 + \sum_{i=1}^{p} \gamma_{1i}\ \Delta lnGDPPC_{t-i} + \sum_{j=0}^{q} \gamma_{2j}\ \Delta lnFDI_{t-j} + \sum_{k=0}^{r} \gamma_{3k}\ \Delta lnINF_{t-k} + \sum_{l=0}^{s} \gamma_{4l}\ \Delta lnEXR_{t-l} + \sum_{m=0}^{r} \gamma_{5m}\ \Delta lnINR_{t-m} + \sum_{n=0}^{s} \gamma_{6n}\ \Delta lnTO_{t-n} + \sum_{o=0}^{u} \gamma_{7o}\ \Delta lnCFM_{t-o} + \sum_{z=0}^{v} \gamma_{8z}\ \Delta lnGFDI_{t-z} + \pi ECT_{t-i} + e_t$$

equation (4)

Where

ECT_{t-i} is the error correction that is lagged (differenced) by one period

π = represents the speed of adjustment parameter with a negative sign.

3.3.3 Statistical Techniques used for this study

The Fully-Modified Ordinary Least Squares (FMOLS)

The Fully Modified Ordinary Least Squares (FMOLS) is an important technique that will be used to calculate the long-term elasticity. Phillips and Hansen (1990) developed the FMOLS as a non-parametric tool for determining the existence of endogeneity and serial association in a given dataset. This technique will be best fitted for the calculation of integrated data at the

first level of differences. Also, according to the proponents of this technique, The Fully Modified Least Squares (FMOLS) method was designed to perform optimal co-integrating regression estimation since it corrects endogeneity bias and serial correlation (Phillips, 1998).Thus, the cointegration test supports the long-run equilibrium relationship among the model variables, and the elasticity can be tested using the FMOLS method.

Secondly, the study employed the correlation co-efficient technique to measure the relationship between two or more after an initial relationship was established at the initial level of analysis. Nevertheless, it is not necessary to obtain an initial relationship between variable. The correlation coefficient can be performed distinctively. For this study, the correlation matrix was calculated using E-views software.

3.3.4 Measurement and definitions of variables

The table below consist of variables used to determine the relationship between FDI and Inflation. However, these variables were based on the data extracted from the World Bank database.

Table 4: Definition of Variables

S/N	VARIABLES	DEFINITION OF VARIABLES
1	Aggregate foreign direct investment	This investment is made by an individual or firm in one country into businesses located in another country.
2	The Manufacturing Sector (Proxy for Secondary Sector)	This sector is defined as a sector comprising establishments or parastatals engaged in a mechanical, chemical or physical transformation of materials, substances, or components into new products and engaging in assembling parts.
3	Construction sector (Proxy for Secondary Sector)	This sector is mainly based on the building, maintaining, and repairing of structures. The activities of the sector include drilling and solid mineral exploration.
4	Telecommunications Sector (Proxy for Service Sector)	This consists of three basic sub-sectors, including telecom equipment being the largest, followed by telecom services and wireless communication.
5	Agricultural Sector (Proxy for Primary Sector)	Its sector consists of the production of crops and livestock for economical purpose.
6	Oil and Gas Sector (Proxy for Primary Sector)	This sector includes companies or organisations involved in the exploration and development of oil or gas reserves, oil and gas drilling, and refining.
7	GDP Per Capita	This stands for Gross Domestic Product (GDP) and is derived from a division of total GDP
8	Capital Formation	Capital Formation is defined as that part of output and imports of a country that is not consumed during the stipulated accounting period but set aside as an added stock of capital goods
9	Population	Regardless of legal status or citizenship, the population is the total number of people considered part of the population of their country of origin.
10	Inflation	The consumer price index measures inflation as the annual percentage rise in the cost to the average consumer of purchasing a package of goods and

		services that may be set or adjusted at prescribed intervals, such as annually.
11	Exchange rate	The exchange rate is calculated by dividing the nominal effective exchange rate (a calculation of a currency's value against a weighted average of many foreign currencies) by a price deflator or cost index. The nominal exchange rate compares the value of one country's currency to a weighted average of currencies from other countries.
12	Trade Openness (Logged)	This tests a country's participation in the global trade system and is generally expressed as a ratio of aggregate exports and imports to gross domestic product (GDP).
13	Lending Interest Rate	This is the rate that usually meets the short and medium-term financing needs mainly of the private sector. This rate is normally differentiated according to the creditworthy of a borrower and the objectives or aim of financing

Source: World Bank, 2021.

CHAPTER FOUR

Empirical Results

Before conducting any empirical estimation, it is essential to check the properties of the used variables to avoid spurious regressions in our models and prove that there is a long-run relationship between the dependent and independent variables. Therefore, this chapter starts with testing the stationarity of our used variables and perform a co-integration test to confirm whether there is a long-run relationship in our models. Then, we estimate the models and perform the necessary checks on serial correlation, Heteroskedasticity, and stability. Moreover, the coefficients were estimated, and all variables are in the logarithmic form.

4.1 Stationarity check: Unit root tests

Table (4.1) below shows the results for the unit root analysis and their corresponding decisions. The unit root test was conducted under the Augmented Dickey-Fuller (ADF) and was further subjected to the Phillip Perron (PP) test to determine the robustness. Although the PP test and the ADF generally suffer limitations, however, the PP test was employed to cater to some of the ADF's inadequacies in this study. The PP came in because the ADF suffers from an auto-correlation problem (Murshed, 2020); thus, the PP caters for such inadequacies where necessary. At a 5% level of significance, it can be seen that the gross domestic product per capita (lngdppc) is non-stationary at the level and becomes stationary at the first difference, deciding to be integrated at the first difference I(1). This is the same for total Foreign Direct Investment (ln(Total FDI)), population (lnpop), trade openness (ln(open)), lending interest rates (lnlend), FDI for primary sector (ln(FDI_P)), FDI for secondary sector (ln(FDI_S)), and FDI for services sector (ln(FDI_T)) that are all significant at 5% level.

On the other hand, the capital formation (ln(GCF)) shows that it is stationary at level. The stationarity, therefore, means that it is integrated of order I (0). Also, the inflation rate is stationary at the level and integrated of order I (0). Overall, ARDL can be used because all variables are stationary at the level and first difference and not the second difference. Then, there is a mixed order of integration, and that allows to use of the Auto-Regressive Distributive Lag (ARDL) model, which can carry out a regression analysis at the level and first difference stationarity of variables (Pesaran et al. (2001).

Table 4.1: Stationarity check: Unit root tests

Test	ADF		PP		
Variable	Level	Δ	Level	Δ	Decision
Ln(GDPPC)	-1.539	-3.961**	-3.198	-3.854**	I (1)
Ln(FDI_Total)	-3.432*	-7.615***	-3.397*	-7.774***	I (1)
Ln(GCF)	-4.018**	-4.029**	-4.141**	-3.947**	I(0)
Ln(POP)	-1.712	4.758***	-2.911	-3.929**	I(1)
Ln(Open)	-1.985	-7.259***	-1.904	-7.510***	I(1)
Ln(CPI)	-4.393***	-6.673***	-3.173	-9.774***	I(0)
Ln(Lend)	-2.040	-6.163***	-2.038	-6.165***	I(1)
Ln(FDI_P)	-4.723***	-8.919***	-4.719***	-14.883***	I(1)
Ln(FDI_S)	-2.948	-4.341***	-2.350	-4.351***	I(1)
Ln(FDI_T)	-2.726	-3.636*	-2.221	-3.821**	I(1)

*Note: Δ denotes first difference; the reported test statistics are calculated considering both constant and trends under the null hypothesis of non-stationarity against the alternative hypothesis of stationarity; optimal lags are based on SIC; ***, ** and * denote statistical significance at 1%, 5% and 10% levels respectively*

4.1.1. Long run existence test: Co-integration test (Bounds test)

Following the unit-roots test is the Bounds test of the co-integration to estimate the long-run relationship among variables in the two separate models (Sectoral FDI and total FDI). This is termed the levels relationship (Murshed, 2020). Since there is a combination of stationary variables at the level and the first difference, the bounds test becomes essential. This is done by carrying out the test for joint significance of coefficients against the F-statistic. The null hypothesis guiding this is that no level relationship existed among the variables, which indicates that the hypothesis should be rejected when the calculated F-statistic is higher than the upper bound of the critical value at 5% level significance (Pesaran et al. 2001; Narayan, 2005). Thus, with FDI Sectors as the dependent variable, it can easily be seen in table 4.2 that the estimated F-statistic (9.07) is greater than both of the critical values of 2.17 and 3.21 at 5% (both at level and first difference) (Narayan, 2005). As a result, the null hypothesis for the FDI sector that there is no level relationship is rejected, and a level relationship exists. Moreover, when the total FDI is the dependent variable, table 4.3 shows that the calculated F-statistic,

which is 4.57, is greater than both 2.39 and 3.38 of level and first difference at 5%. This means that a level relationship exists, and we also reject the null hypothesis that there is no level relationship.

Table 4.2: Bounds test for sectoral FDI model

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	9.072205	10%	1.92	2.89
K	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9

Table 4.3: Bounds test for total FDI model

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.573880	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

4.2. Empirical Results

This section reports and discusses the empirical results of the impacts of the sectoral FDI and the aggregate FDI on the economic growth of Nigeria.

4.2.1 Impact of Sectoral FDI Inflows on Economic Growth in Nigeria

ARDL model results

The performance of analysis on the sectoral FDI provides us with evidence favouring long-run dynamics, as shown by the majority of signs and values of the coefficients. It is noticed from table (4.4) that primary sector FDI inflows have a significant impact in the long run but has an insignificant impact in the short run. The negative coefficient of the FDI inflows in the primary sector shows that a one percent increase in FDI of the primary sector decreases the economic growth of Nigeria by 0.09 percent at the time of the study.

However, FDI for the secondary sector has a positive but no significant effect on economic growth of Nigeria in the short term. However, the long term shows that economic growth responds positively to the changes in secondary FDI inflows. The results display that a one percent increase in the FDI for the secondary sector leads to a 0.247 percent increase in the economic growth of Nigeria. The impact of secondary sector FDI on economic growth appears after a period of time in the form of spillover through vertical and horizontal linkage and human resources development through training and experience, all of which are expected to take years to take place. It is worth mentioning that the positive effect of an increase of 1% in secondary sector FDI inflow is high but not as high as the FDI impact of at least 3% in the private sector. Also, the value for the coefficient for the FDI service sector provides an insignificant negative value of -0.0887 in the short run and a positive value but also insignificant in the long run. These insignificant values may be due to the very low FDI share of the service sector in Nigeria's economy. As shown in figure (3) and table (1), the service sector share was less than 10% up to approx. 2010

Capital formation estimated coefficient indicates that its effect is insignificant on growth in the short-run; however, it is positive and significant in the long–run. An increase of 1% in capital formation in Nigeria leads to 0.25 % growth in the long run. This is expected as improvement in the capital formation leads to attracting investments and eventually growth in the long run. The value of the estimated coefficient for the population variable shows that it is statistically significant at a 5% level in the short run only. One percent increase in population will produce a 3.25 % increase in the economic growth of Nigeria. For trade openness, the result is insignificant in both the short and long-run at 5% and 10% levels. This result suggests that further research is required to identify the determinant and components of trade in Nigeria and

the means of improving exports. The inflation rate at -0.00228 shows that the result is insignificant in the short and long run. Finally, the estimated coefficient of lending interest rates variable shows that it is statistically significant at a 5% level in the long run. It means that in the long run, the lending interest rate had a positive and significant effect on the economic growth of Nigeria. Thus, a one percent increase in the value of the lending interest rate leads to an increase in the economic growth of Nigeria by 0.36 percent in the long run. This could be explained by an associated increase in the interest rate on deposits leading to attracting foreign capital due to the increase in returns on the savings, as explained in Chapter 3 item 3.1.3.

Table 4.4: Impact of Sectoral FDI Inflows on Economic Growth in Nigeria in the Short and Long Run.

Model	(1)		(2)
Estimator Dep.Var: GDP Per capita Growth	SR-ARDL		LR-ARDL
Variables			
Δln(FDI_P)	0.0127	ln(FDI_P)	-0.091***
	(0.0395)		(0.031)
Δln(FDI_S)	0.0617	ln(FDI_S)	0.247**
	(0.0835)		(0.109)
Δln(FDI_T)	-0.0887	ln(FDI_T)	0.0116
	(0.0544)		(0.0507)
Δln(GCF)	0.00789	ln(GCF)	0.245**
	(0.0397)		(0.0875)
Δln(pop)	3.246**	ln(pop)	0.673
	(1.477)		(0.762)
Δln(open)	-0.0244	ln(open)	-0.000711
	(0.0177)		(0.0382)
Δln(CPI)	-0.00228	ln(CPI)	0.0144
	(0.00794)		(0.0160)
Δln(Lending)	-0.0453	ln(Lending)	0.361**
	(0.0437)		(0.135)
ECT_{t-1}	-0.563***		
	(0.167)		

Constant	-1.451		
	(1.194)		
Observations	37		37
R-squared	0.899		

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

It is important to check the stability of the ARDL results. The ARDL model's stability is investigated using the Cumulative Sum (CUSUM) and Cumulative Sum Squares (CUSUMSQ). The judgement criterion in this case is that the model is stable if the plots of the CUSUM and CUSUMSQ statistics remain within the critical bounds of a 5% significance level. The Breusch-Pagan-Godfrey test is performed to estimate the test for heteroscedasticity, which is to test for sameness of error term across all values of the independent variables (Murshed, 2020). At the same time, the Breusch-Godfrey Serial Correlation LM Test is employed to identify the nature of serial correlation of the ARDL model used in this study. As shown in table 4.5, the probability value of 0.58 is greater than 5%, which reveals that we accept the null hypothesis that there is homoscedasticity. In table 4.6, the probability value (0.08) is also greater than 5%; this means that we accept the null hypothesis that the model has no serial correlation. Thus, the estimated model passed all diagnostic tests.

Table 4.5: Diagnostics Test: Heteroscedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey the null hypothesis is of homoskedasticity			
F-statistic	1.025692	Prob. F(31,3)	0.5829

Table 4.6: Diagnostics Test: Serial correlation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	554.3582	Prob. F(2,1)	0.0800
Normality test (Jarque-Bera)	0.7603		0.68354

4.7 Robustness check: DOLS and FMOLS estimates

Model	(1)	(2)
Estimator Dep.Var: GDP Per capita Growth	FMOLS	DOLS
Variables		
ln(FDI_P)	-0.0508***	-0.0559***
	(0.0154)	(0.0188)
ln(FDI_S)	0.189***	0.485***
	(0.0116)	(0.0569)
ln(FDI_T)	0.0407***	-0.0452*
	(0.00639)	(0.0251)
ln(GCF)	0.0795***	-0.0172
	(0.00805)	(0.0692)
ln(pop)	1.255***	2.599***
	(0.118)	(1.073)
ln(open)	-0.0222***	-0.0210*
	(0.00713)	(0.0109)
ln(CPI)	0.00613*	0.0762***
	(0.00338)	(0.0212)
ln(Lending)	0.104***	0.470***
	(0.0154)	(0.0540)
Constant	-0.140	-7.403***
	(0.300)	(0.633)
Observations	37	37
R-squared	0.928	0.900

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The table for FMOLS shows that variables such as FDI primary sector and trade openness are significant but with a negative effect on the economic growth of Nigeria. A one percent increase in the FDI to the primary sector and openness to trade will decrease economic growth at the rate of 0.05 percent and 0.02 percent, respectively. On the other hand, FDI for the secondary sector, service sector, capital formation, population, and lending interest rate are significant at 1 %, with positive effects on economic growth. At one percent increase in the FDI secondary sector, service sector, capital formation, population, and lending rates, the economic growth increases at 0.19, 0.041, 0.08, 1.26, and 0.10. The inflation is also positive and significant but at 10%.

For DOLS, the table also shows that the values for FDI primary sector, FDI service sector, and trade openness are all negative and significant. So, FDI primary sector, FDI service sector, and trade openness increase by one percent, there is a corresponding decrease of 0.06, 0.05, and 0.02 respectively on the economic growth of Nigeria. On the other hand, the FDI secondary sector, population, inflation, and lending interest rate all have a positive and significant impact at a 1 % level on the economic growth of Nigeria. So, a one percent increase in FDI secondary sector, population, inflation, and lending interest rate brings about 0.50, 2.6, 0.08, and 0.5 percent increase in the economic growth of Nigeria.

4.2.2 Impact of Total FDI inflows on economic growth in Nigeria

4.2.2.1 The impact of Total FDI on economic growth in Nigeria in the short run and long-run:

Table 4.8: Impact of Total FDI inflows in the Short and Long-run (ARDL Model)

Model	(1)	(2)	
Estimator Dep. Var: GDP Per Capita Growth	SR-ARDL	LR-ARDL	
Δln(Total FDI)	-0.00506	ln(Total FDI)	0.288***
	(0.0678)		(0.0704)
Δln(GCF)	0.00178	ln(GCF)	0.145*
	(0.0424)		(0.0814)
Δln(pop)	1.056	ln(pop)	2.741***
	(0.996)		(0.787)
Δln(open)	-0.00141	ln(open)	-0.0499
	(0.0194)		(0.0493)
Δln(CPI)	-0.00896	ln(CPI)	0.00901
	(0.00892)		(0.0230)
Δln(Lending)	-0.0402	ln(Lending)	0.293
	(0.0446)		(0.195)
ECT_{t-1}	-0.442**		
	(0.190)		
Constant	-1.839***		
	(0.494)		
Observations	37		
R-squared	0.822		

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The analysis on the total FDI provides us with evidence that in the short run, the coefficient of capital formation at the first difference is on a short run statistically significant at 5% level. The coefficient of capital formation means that it has a positive and significant effect on the economic growth of Nigeria in the short run. Thus, a one percent rise in the capital formation will produce a 0.002 % increase in the economic growth of Nigeria between 1980 and 2018. On the other hand, the probability value of the overall FDI is statistically significant at a 5% level, with a negative effect on the economic growth of Nigeria. This means that with a 1% increase in capital formation, economic growth decreases by 0.01%. The negative and significant effect can also be seen with trade openness, inflation, and lending interest rates, affecting economic growth. Thus, a one percent increase in trade openness, inflation, and lending interest rates cause a decrease in economic growth at the rate of 0.001 percent, 0.008 percent, and 0.04 percent, respectively.

More so, in the long run, only trade openness and inflation rates are statistically significant, with trade openness having a negative effect on the economic growth, while inflation has a positive effect on the economic growth in the long run. Therefore, as trade openness increases at one percent, economic growth fluctuates downward at the rate of 0.05. Moreover, as inflation increases by one percent in the long run, economic growth also increases at the rate of 0.009. Moreover, other variables like capital formation, population, and lending interest rates are not statistically significant for the economic growth of Nigeria at a 5% level.

With regard to the stability check of this ARDL model, the results of Figures 4.3 and 4.4 (*See Appendix)* show that the Cumulative Sum (CUSUM) and Cumulative Sum Squares (CUSUMSQ) statistics stay within the critical bounds of 5 % significance level, which is in line with the stability model. In line with this condition, the figures show that the ARDL Model is stable because the CUSUM and CUSUMSQ statistics fall within the 5% bounds.

On the Breusch-Pagan-Godfrey test for heteroscedasticity, table 4.9 shows that the probability value 0.66 is greater than 5 per cent, which reveals that we accept the null hypothesis that there is no heteroscedasticity. The Breusch-Godfrey Serial Correlation LM Test is also shown in table 4.10. The probability value (0.38) is also greater than 5%, and this means that we accept the null hypothesis that the model has no serial correlation. As a result, there is no serial correlation. Thus, the estimated model passed all diagnostic tests.

Table 4.9: Diagnostic Test: Heteroscedasticity for Total FDI

Heteroskedasticity Test: Breusch-Pagan-Godfrey the null hypothesis is no Heteroskeasticity			
F-statistic	0.834142	Prob. F(29,4)	0.6676

Table 4.10: Diagnostic Test: serial correlation for Total FDI

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.581591	Prob. F(2,2)	0.3874
Normality test (Jarque-Bera)	1.4646		0.5637

4.2.3 DOLS and FOLS: Total FDI

Table 4.11: FMOLS and DOLS estimates.

Dep.Var: GDP Per capita Growth	FMOLS	DOLS
ln(Total FDI)	0.339***	0.512***
	(0.0125)	(0.0266)
ln(GCF)	0.115***	-0.118***
	(0.0127)	(0.0305)
ln(pop)	1.575***	5.258***
	(0.201)	(0.405)
ln(open)	-0.0538***	-0.0564***
	(0.0116)	(0.0100)
ln(CPI)	0.0199***	0.0537***
	(0.00565)	(0.0150)
ln(Lending)	0.113***	0.124***
	(0.0263)	(0.0213)
Constant	-2.696***	-3.534***
	(0.216)	(0.356)
Observations	37	37
R-squared	0.915	0.917

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4.1.1 shows the results for FMOLS and DOLS. The FMOLS and DOLS show that Foreign Direct Investment, capital formation, population, lending interest rates and inflation rate variables are significant, with a positive effect at a 1% level on the economic growth of Nigeria. Thus, for example, a one percent increase in total FDI explains a 0.339 percent and 0.512 increase in economic growth for the estimates of FMOLS and DOLS, respectively. Similar results can be drawn for the other four mentioned positive and significant variables.

Trade openness under both methods is statistically significant at a 1% level, with a negative effect on economic growth. So, when trade openness increases by one percent, economic growth decreases by 0.05 and 0.06, respectively. Differently, capital formation has a significant effect at 1% level, yet it is positive in the FMOLS and negative in the DOLS analyses, as shown in the table.

4.3 Summary and discussion

The results show that primary FDI has a negative effect on economic growth. These results are in line with Elheddad (2020), Alfaro (2003) and others (Egbo, 2010; Ajibola et al., 2018). The main reason behind this relationship may be tied to the resource curse, the poor linkage of the primary sector has with the economy that may delay the spillover, the conditions of the investments which the successive government made in the primary economic activities and the effectiveness of the governments in perusing growth. The importance of the resource curse was caught in the analysis of Geda and Yimar (2018), who discovered that among all FDI determinants, only government effectiveness in the long run and natural resource abundance in the short run were significant determinants of FDI to all African countries.This is also buttressed by the study of Bekere and Bersisa (2018).

The secondary sector, including construction and manufacturing, also positively influences Nigeria's economic growth, which mirrors the study of Saleh et al. (2017) when they undertook the same for Vietnam FDI. However, the results for the service sector, which speaks to the fact that its impacts it is insignificant to economic growth in Nigeria, especially when the study is pitched against the study of Ezeanyeji and Ifebi (2018), Wahab (2020), and Oladimeji (2013), who conducted an empirical assessment into the nature of sectoral FDI in Nigeria’s telecommunications. Although their studies came up with a different conclusion, the influence of telecommunication was weak, which could be a factor that accounts for their difference.

The total impact of FDI inflows on economic growth is positive. This means that more FDI inflows lead to more economic growth. This is because the positive effect of secondary and service FDI is larger than the negative effect of primary FDI. This is in agreement with a number of studies like Egbo (2010), Adegboyega and Odusanya (2014), Anekwe et al. (2018), and John (2016), amongst others, who despite the fact that they adopted different econometrics techniques for their FDI studies, came to conclude that FDI has tremendously impacted on the economic growth of Nigeria.

This study, therefore, contributes immensely to the comparative impacts of sectoral FDI with total FDI.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This Chapter summarises the impacts of FDI on the economic growth of Nigeria, for the period between 1980 and 2018. The Chapter also discusses the results and conclusions, provides recommendations, and offers suggestions for further studies.

The study compares how sectoral FDI and total FDI influenced the growth of the economy in the period of study. Three sectors were considered in the study: primary, secondary and services sectors. The primary sector reflects the oil extraction and agricultural sectors, while the secondary sector is epitomised by the manufacturing and construction sector, and for this study, the services sector is represented by the telecommunications services as the single proxy. The reason for this is the non-availability of accurate and adequate data on other services of the sector. The telecommunications services have also been the largest recipient of FDI in the services sector. The empirical reviews revealed the dearth of studies on the combination of sectoral FDI and total FDI in relations to their impacts on the Nigeria's economic growth. The data for this study are collected from secondary sources like the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS) and the World Bank.

As detailed in Chapters 3 and 4 of this thesis, the study analysed the role of Foreign Direct Investment in impacting on the economic growth of Nigeria, with specific reference to the primary, secondary, and tertiary sectors as well as the total FDI. The models are specified in Chapter 3, and the empirical analysis in Chapter 4 employed the Autoregressive Distributed Lag Model (ARDL) as the estimation technique for all the variables in the short and long- runs, of the specified models for the sectoral and total FDI. Dynamic OLS (DOLS) and Fully Modified OLS (FMOLS) test models robustness and the elasticity of variables. Other empirical time series econometric tests and methodologies were adopted, such as unit root stationarity tests, variables co-integration and Wald test for variables significance, Breusch-Godfrey Serial Correlation LM Test for serial correlation, stability test, the Cumulative Sum Control Chart CUSUM) and CUSUM Squared tests for structural breaks and model coefficients constancy.

As shown below in 5.2, Results and Conclusions, and Chapter 4, the empirical result showed that FDI and other variables have different impacts on the dependant variable – economic

growth. The estimated equation further demonstrated good fit based on the value of the coefficient of determination and the f-statistic.

5.2 Results and Conclusion

Overall, he ARDL results (both in a short run and the long run error correction model) showed the dynamic ways in which both sectoral and total FDI have become either a positive or negative driver of each of the examined sectors. The empirical result revealed that both the sectoral and total FDI have over the years affected the level of economic growth of the Nigerian state. Other variables such as inflation rate, exchange rate, lending interest rate, capital formation and trade openness that were used as control variables also showed some significant and sometimes positive or negative relationship with a given dependent variable- Gross Domestic Products Per Capita, at each analytical stage of the research work. The analysis results are shown in chapter 4, and, the following findings are based on the analysis:

1. At the sectoral level,

Primary Sector linkage with the reminder of the economy the negative and significant effect, in the long run, cannot be ignored. The said weak linkage might be one of the reasons for the insignificant effect in the short run. Nigeria needs to resolve the reasons for the insignificant results in the short run and the significant negative results in the long run, to benefit from the additional investments and the other technical, management and market benefits that FDIs present.This is largely due to resource curse, and lack of good government policies that help local companies to compete

Furthermore, the limited and linkages of the Primary Sector activities and the economy may cause a delay in the spill over. In addition, the effectiveness of the governments in perusing growth, and the terms and conditions of the Primary Sector FDI which the successive government made, are expected to be important factors that contribute to this insignificant impact in the short-run and negative significant impact in the long-run.

a. The FDI for Secondary Sector has a positive but insignificant effect on the economic growth of Nigeria in the short term; however, the sector has a positive and significant effect on the economy in the long run. This is a very important result as the Secondary Sector has been receiving a relatively small portion of around 20% of the total FDI.

The insignificant effect on economic growth in the short-run may be attributed to the same reasoning which affect the Primary Sector i.e. resource curse, limited linkages, Governments' effectiveness, agreements conditions, and other factors. The positive and significant result, in the long run, is an encouraging sign to build on. The Secondary Sector, mainly industrial and construction FDI, requires time for building human capital and linkages with the economy, which would lead to economic growth. Nevertheless, with the significant and positive result, Nigeria should direct foreign investments towards this sector and work on the spillover, improved linkages, and human capital development, to benefit from this sector in both the short and long-runs.

It is important to note here that the total FDI produces positive and significant impact on growth, while the primary sector which is taking60-80% share of FDI have either an insignificant or negative impact on growth. The Secondary Sector must be driving the total FDI positive impact on growth despite its smaller share in the aggregate FDI of approximately 20%.

b. There is an insignificant and negative effect of service sector on the economic growth of Nigeria in the short and long run in the ARDL estimate. In addition to the reasons given above for the Primary and Secondary sectors, these insignificant values may be attributed to the Service Sector's very low share in FDI in Nigeria. As shown in figure (3) and table (1), the Service Sector share was less than 10% up to approx. 2010.
c. It is also important to note that Nigeria Service Sector FDI data was available for the growing Communication Services, and therefore it is considered as an indicator for Service Sector, whereas the sector provides diverse number of services including banking, transportation and tourism that may be contributing to economic growth. Further data and analysis in the future will be necessary to understand the developments in impact of FDI to the Services Sector on growth. The effect of the other variables in the model includes:
    - Capital formation impact on growth is positive and significant in the long-run but insignificant in the shot-run.

      The impact of stimulating improvements like capital formation and any other improvements is expected to be related to the country preparedness, including human capital and degree of progress. Therefore, the insignificant impact in the short run may eventually be changed when these factors are improved.

- Trade openness is insignificant in both the short and long-run at 5% and 10% levels.

  This result suggests that a further research is required to identify the determinant and trade components in Nigeria and means of improving exports.
- The inflation rate is insignificant in the short and long-run.

2. The lending interest rates variable shows that it is statistically significant at a 5% level in the long run. This could be explained by an associated increase in the interest rate on deposits leading to attracting foreign capital due to the increase in returns on the savings, as explained in Chapter 3 item 3.1.3.At the aggregate level of FDI,
   a. There is a positive and significant long-run relationship between total FDI and the economic growth of Nigeria in the period of study. The relation is insignificant in the short run.

Based on this result, we can conclude that Nigeria should seek means and ways to increase its share of the FDI and investigate the reasons and remedies for the insignificant impact of FDI in the short run.

- The coefficient of capital formation shows that it has an insignificant effect on Nigeria's economic growth of in the short-run, and a positive and significant effect at 10% in the long run.

This is similar to the preceding result for the ARDL model for the FDI for the economy sectors

- Trade openness shows a negative and significant association with economic growth in both the short and long run. This result suggests that a further research is required to identify the determinants and components of trade in Nigeria and means of improving exports, like the suggested above for sectoral analysis.

Population growth, inflation, and lending interest rates have positive effects on the economic growth of Nigeria both in the short-run, and long run.

From the foregoing, it is argued that Nigeria with its abundant resources, is affected by the resource curse and the crowding out effects of FDI on domestic investment, among other factors, which means that the economic growth of the country will continue to be retarded until these negative effects are warded off. This can be achieved through adequate financing of

development and investment policies and other measures to be are implemented by the Government. This means that the two aspects, sectoral and total FDI, can be addressed and improved.

FDI might still fail to have meaningful and powerful effects if there are no strong links to local businesses.

5.3 Recommendations

5.3.1. General Recommendations on FDI-Growth in Nigeria

a. There is a need for a stable investment environment through more proactive actions from the Nation's policy makers. Adherence to the principles of the rule of law, maintenance of political stability, and the protection of property rights are some of these actions that must be implemented. This signals an improvement on the policy architecture and FDI environment in Nigeria.
b. The government should adopt policy measures that will increase savings and help to pilot strong domestic investors and privatisation become sacrosanct.

   As the style of many developing economies, these measures will help to deepen Nigeria's domestic capital market and promote the inflow of FDI. A little and gradual withdrawal of Government from the market and some economic activities like telecommunications, airlines, and some state-controlled enterprises will stimulate more activities of foreign investors. Such withdrawal from the market, will cause meaningful boosts in different sectors of the economy. Private businesses are more dynamic, and they have strong impetus to improve productivity; as profit making is what defines their motive, their orientation on productivity will cascade on sectoral performance of the nation.
c. Amidst the growing realities of the globalised world, there is an increasing level of competition for FDI in developing countries to be a significant recipient of FDI. This is because they largely possess raw materials and resources that are huge enough to attract foreign investors. Thus, it is needful for the government to improve the quality of FDI by improving the conditions and terms of the agreements for example in training and transferring technical know-how, or environment protection.
d. Currently, the Nigerian primary sector, specifically the oil and gas sector, is the highest recipient of FDI, and it has proven by recent fall in the international price of oil, that

there is a danger in the overconcentration of an extractive activity that does not really have strong backward and forward linkages with other sectors of the economy; thus, there is a need for the government to redirect the flow of investment into other sectors of the economy to reduce the dependence on oil extraction.

e. Nigerian leadership should investigate the development of a strong legal system for the local financial market, a central authority in the form of having investment agencies that will play an independent role in implementing transparent macroeconomic policies, which in the long run have potentials for boosting the nation's FDI.
f. The Government needs to improve on the infrastructural facilities on the country to reduce the transaction cost of businesses. For example, erratic power supply is a serious discouragement to investors, while bad road networks can bring about an untimely delivery of goods and services. So, the government should invest more in infrastructure development and maintain the good ones from deterioration due to mismanagement. Also, the Government of Nigeria should invest more in information technology to be competitive and enhance the productivity of its economy.
g. In addition to the outlined general recommendations above, policy regulators should undertake sustainability impact assessment regularly with the aim to regulate the condition of the country to maintain sustainability.
h. Finally, on this, Nigeria policies to increase the spillover and transfer of technology and improve competitiveness. This may be achieved for example by improving technical education and encouraging innovations, and research. Also, encouraging investments and joint investments in higher technology industries and services. Encouraging spillover through vertical and horizontal linkages. These policies will lead to development and export promotion which is essential for economic growth. Exchange rate free float is necessary for economic equilibrium and can provide part of the solution for FDI inflow. (I also am sure you are conversant with the past 5 years and ongoing debates in Nigeria on the exchange rate issue).

5.3.2 Recommendations based on the study analysis

From this study, the researcher draws the following recommendations to enhance FDI and its effects on growth in Nigeria.

a. There should be an encouragement of the adoption and design of macroeconomic and other policies that will help foster FDI spillover to the economic activities to strengthen the relationship between the total and sectoral FDIs, and the economic growth of the Nigerian state.
b. Since it has been proven that Foreign Direct Investment is a potent driver of output growth in Nigeria as shown in the thesis analyses, as well as in several developing countries, Government and policy makers should put in appropriate measures to ensure the increase in Foreign Direct Investments inflow in the country.

   Such policies shall include the stabilising the all-time fluctuating economic and market conditions in Nigeria. Without stability, investors are dissuaded from making inroads.
c. The idea of integrating with other sectors is not clear. If you wish, clarify it to a level that would be acceptable to your examiners. Consider the proposed. Therefore, to eliminate this problem, the government needs to embark on huge diversification of the economy to brace the shocks and reduce the risk of doing business. A reduction in the country's risk, will undoubtedly eliminate anxiety among investors and encourage them to boost FDI.Although the ARDL estimates for both the total and the sector-wise model showed that the inflation effect on growth was insignificant, whereas it had very little effect in the FMOLS and DOLS estimates, Government should adopt the free float determination of exchange rate and let the exchange rate be determined by the invincible invisible hand of the market.
d. As the ARDL model estimates show the 'openness to trade' to be insignificant in both of the total and sectoral estimates, and negative in the FMOLS and DOLS, government attention and policies should be changed to concentrate on means of reaping the benefits from trade.

   Attention should be moved away from import substitution strategy, to strategies that would focus on a more open economy and rather adopt policies like export promotion strategy that helps in the development of infant industries.
e. Furthermore, government should not only create an enabling environment for investors, domestic and foreign alike, but should also put in place policies which would protect local firms and enable them to compete favourably with foreign companies, and participate as part of one economic system in forward and backward business activities to reap the benefits of spillover of experience, productivity and technology.

5.4 Suggestions for Further Studies

While there is a well-established body of theoretical knowledge, as well as some unsure results in this study on the impact of Foreign Direct Investment on economic growth, the following are suggested for future research on the impact of Foreign Direct Investment on domestic output especially in developing nations like Nigeria:

1. The impact of corruption on FDI, local investments and public expenditure in impeding economic growth.
2. Impact of Foreign Direct Investment in renewable energy on growth in Nigeria and West African Countries
3. Foreign Direct Investment and the impact on the environment in Nigeria and west Africa
4. Impact of openness to trade on growth in Nigeria, determinants and means of improvement.
5. Impact of FDI investment in the Service Sector on growth.

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APPENDIX

Figure 4.1: Stability Check for ARDL Model: The Cumulative Sum (CUSUM)

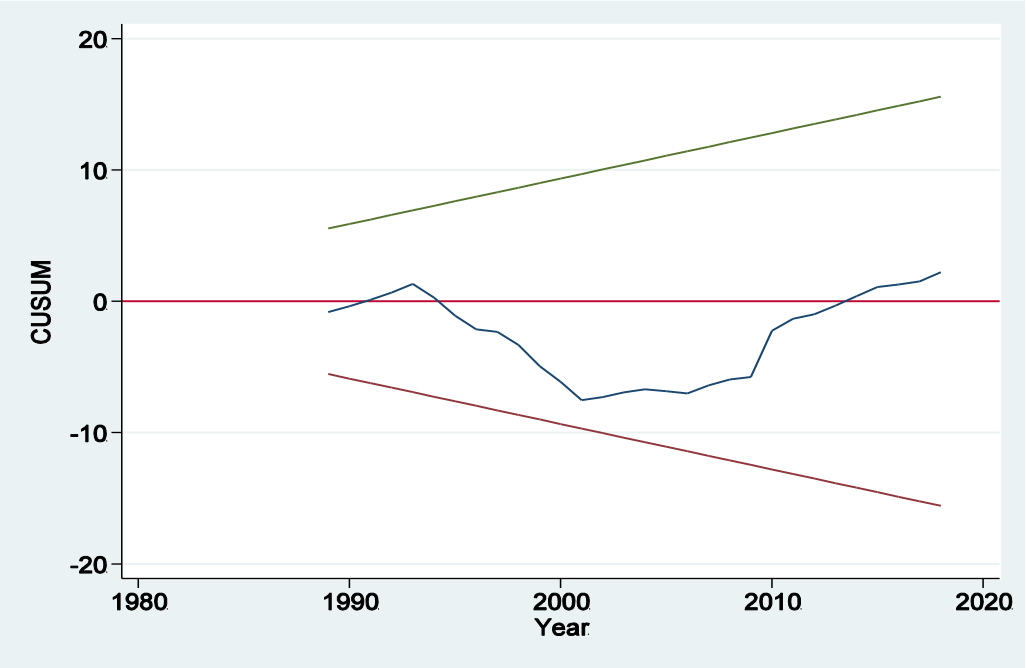


Figure 4.2: Stability Check for ARDL Model: The Cumulative Sum (CUSUM)

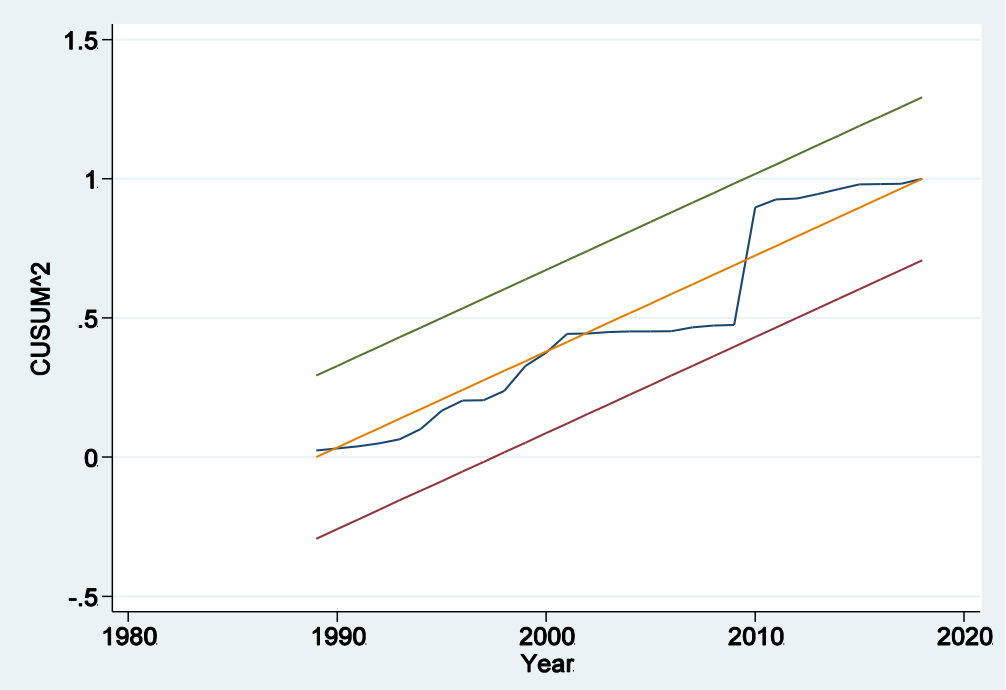


Figure 4.3: The Check for Stability for Total FDI: The CUSUM Test

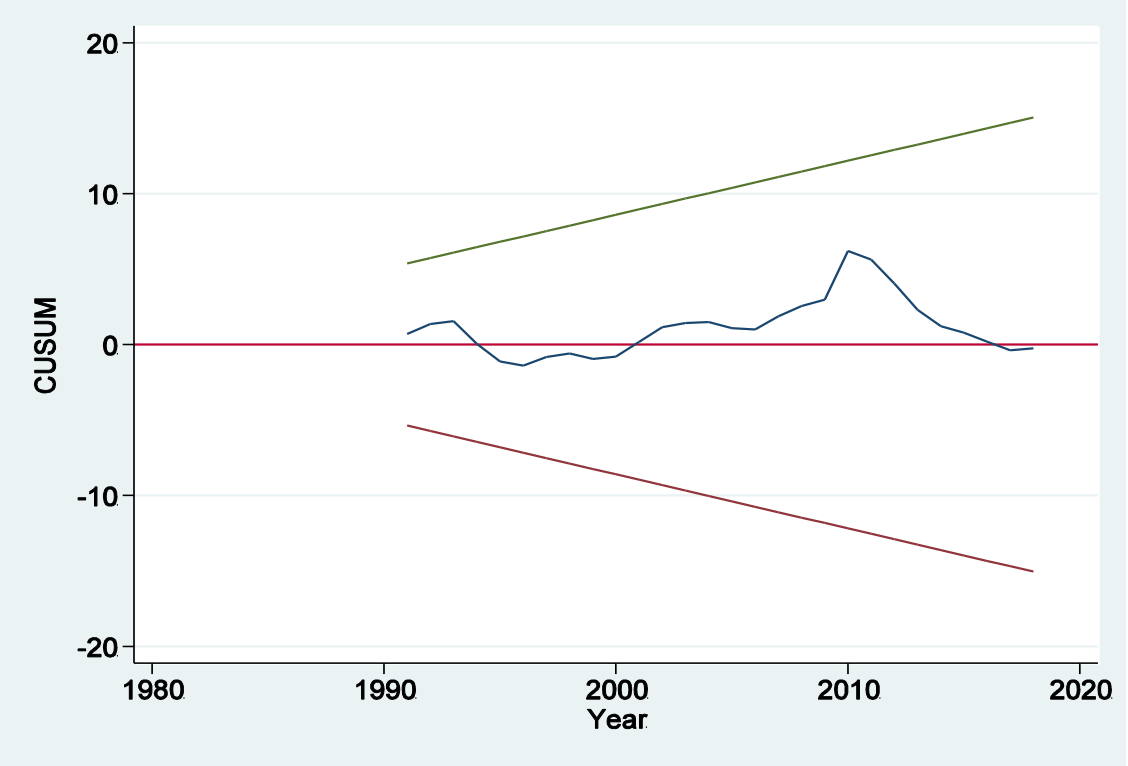
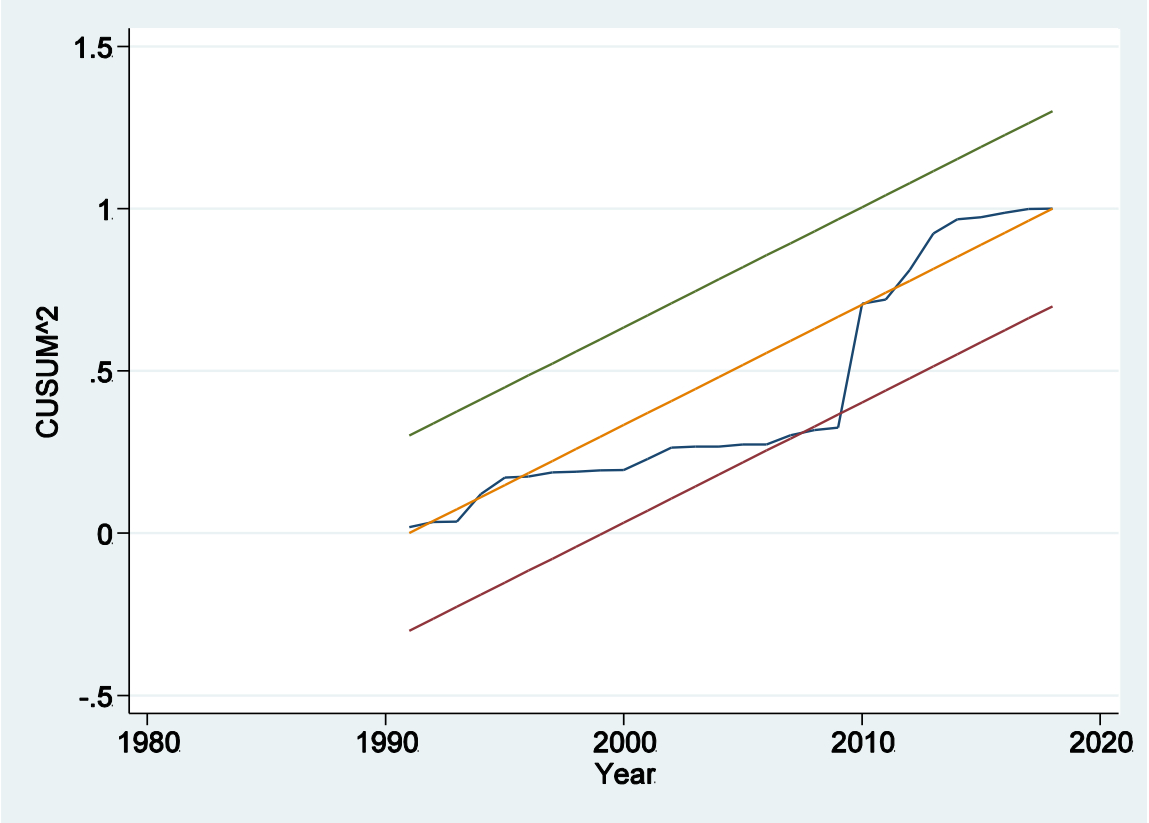


Figure 4.4: The Check for Stability for Total FDI: The CUSUM2 Test



SUMMARY OF LITERATURE ON EMPIRICAL REVIEW

Sources	Data Span	FDI effects on Economic Growth	Variables Used	Empirical Approach	Remarks
Superlanda (1967)	US FDI on EEC and non-EEC, 1951-1964	Empirical analysis failed to support economic growth emanating from FDI	FDI, economic growth	Regression technique	FDI does not bring about economic growth though facilitates the reallocation of international investment
Wallis (1968)	Same as Superlanda (1967)	Significant and positive	FDI and economic growth, Exchange rates, Interest rates		FDI brings economic growth

Balasupramanyam et al (1996)	46 developing countries	Weak	FDI, economic growth, foreign capital, import-substitution, and export substitution	Ordinary Least Square Method	FDI in import substituted countries is weak, level of capital on the lowest side. FDI in export substituted countries is high, with high foreign capital.
Bornschier and Dunn (1985)	FDI as a source of trade, 1960-1984	Positive=short term Negative=long term	FDI, foreign capital stock, income, and economic growth.	OLS	FDI promotes growth on the short term, but hinders growth von long term, with a consequence for income inequality.
Hein (1992)	Southeast Asia 1970 to 1980	Upward push in economies	FDI, economic growth, inflation, exchange rates		Policy mechanisms of state helped bring benefits of FDI
Wang and Blomstrom (1992)	LDCs countries, 1978-1990	Positive	FDI, economic growth,		FDI brings positive spill-overs to domestic economic growth,

		Horizontal spill over	technology transfer		especially the diffusion of technology
Akinlo (2004)	Nigeria, 1970-2001	Negative and significant	Foreign and private capital, finance, FDI and economic growth	Error Correction Model (ECM)	Economic growth mildly impacted by foreign and private capital. Increase level in capital flight brought negative effect of FDI on economic growth
Asiedu (2004)	FDI into Africa, 1990 to 2000	Conditional (can be negative and positive)	Natural resources, market size, government policy, institution and political instability	Modelled SADC's report, 1999/2002 World Business Environment, and the 1996/1997 World	FDI is driven by larger market, low inflation, natural resources abundance, developed infrastructure. But inflow has experienced setback due to corruption and instability

				Development Reports	
Noormamode (2008)	55 countries, panel data (1980-2004)	No defined effect of FDI on economic growth	GDP, Income, FDI, and economic growth	Vector Autoregressive (VAR) and the GMM analysis	Indefinite effects among the countries, based on the diverse nature of GDP and income levels of nations
Koojaroenprasit (2012)	South Korea, 1980 to 2009	Positive	FDI and economic growth	Multiple regression	FDI positively promotes economic growth
Oyatoye et al. (2011)	Nigeria, 1987-2006	Positive	GDP, Inflation, Exchange rate, interest rate	OLS	FDI has a positive effect GDP

Zang ((2012)	20 developed OECD countries, 1981 and 2008.	Economic growth has positive effects on FDI	Trade openness, FDI, economic growth, labour, exchange rate, and domestic investment	Two-Stage Least Square	FDI does not necessarily impact economic growth, even though economic growth powers FDI
Louizi and Abadi (2012)	Jordan economy, 1990 - 2009	No independent impact		ECM	FDI does not carry an independent impact on economic growth, other factors combine to determine it
Dumel (2012)	Turkey, 2000-2009 Sectors in relations to FDI	Positive in five sectors	Sectoral GDP, FDI, labour productivity	Panel Cointegration and Granger – Causality test	FDI brings about aggregate economic growth, with sectoral influence at a different level

Onu (2012)	Nigeria, 1986 to 2007	Positive	GDP, FDI, and economic growth	Multiple regression	No substantial contribution on GDP, though economic growth turned out positive
Olatunji and Shadid (2014)	Nigeria, 1970-2010	No relationship	FDI and economic growth	Engle-Granger of the co-integration tests	The short-run analysis shows the relationship between FDI and economic growth, while long-run shows the absence of relationship, this could be due to corruption, and volatility of Nigeria's business environment
Adeleke et al (2014)	Nigeria, 1999 and 2013.	Positive	GDP, FDI, interest rate, GDP per capita	OLS	FDI has a positive and significant relationship with economic growth
Mallick (2015)	BRICS, 1990-91 to 2011-12; structural changes and effects of globalization on	Two-way causality	Labour productivity, capital	Shift-share analysis, dynamic panel data analysis.	FDI inflows affect labour productivity, while labour productivity in turn yields an increase in sectoral growth, which culminated in the

	labour productivity growth		formation, structural changes, FDI and economic growth		reallocation of labour towards more productive sectors.
Alam (2008)	Eastern Europe and the Soviet Union, 1980-1999	Increase in levels of investment brought economic growth	Agriculture, manufacturing, and services sectors, FDI, labour		Labour productivity and sectoral productivity are not mutually exclusive, but mutually reinforcing
Egbo (2010)	Nigeria, 1981 to 2007	Positive relationship	GDP, exchange rates, inflation	Modified TY Granger no-causality test to OLS	Bivariate concludes that a positive relationship exists between FDI and economic growth. The stable relationship between four variables.

Adegboye (2014)	39 African countries, 1993 - 2012	Positive and significant	The income per capita, foreign fund, rate of return of investment, foreign exchange, domestic investment, income	Fixed effect least square, locally weighted scatterplot smoothing	His study reveals that the economic growth of African states, especially those with the lower inflow of foreign funds, cannot be separated from the activities of FDI
Anekwe et al. (2018)	Nigeria, 1990 to 2012; FDI, export and economic growth	A positive and significant relationship	FDI, export, GDP	OLS	FDI brought an increase in export, and by implication economic growth
John (2016)	Nigeria, 1981 to 2015	Positive	GDP, exchange rate, FDI		FDI has a strong effect on GDP, while exchange rate had a positive effect on the GDP, but not on a significant level.

				Multiple regression analysis	
Ali and Hussain (2017)	Pakistan, 1991 to 2015	Positive		Regression and correlation	FDI significantly improved economic growth
Alabi (2019)	Nigeria, 1981 - 2017	Positive	FDI, GDP, interest rate, real exchange rate and domestic investment	Descriptive and regression analysis	Increase in FDI and exchange rate led to increasing in economic growth. But interest rate and domestic investment, though positively influence GDP, did not do so in a significant way
Olabode et al (2019)	Nigeria, determinant of FDI and economic growth	Positive, but not all factors are significant	Taxation, human capital, FDI, trade openness, capital formation,	Fully modified Ordinary Least Square	All factors have positive effects but some were significant while others were insignificant.

			import, income growth		
Koizumi and Kopeck (1977)	Firm-level data	Positive	Technology transfer, absorptive capacity, FDI, capital stock	Partial equilibrium framework	FDI helps multinationals to transfer technology to local firms
Alfaro (2003)	Cross country data for sectoral FDI, 1981 to 1991	Different directions. The direction depends on the sector		Cross-sectional regression	First, that there is a negative, yet the significant relationship between FDI and economic growth in the primary sector; also, that the relationship in the manufacturing sector is said to be positive and very significant; while that of the service sector is unascertainable.

Bang et al (2007)	China 1997 to 2004 and Vietnam 1995 to 2003	Positive and significant	Labour productivity and sectoral FDI		China and Vietnam FDI have majorly been to the benefit of their industrial sector about other sectors.
Thuy (2007).	Vietnam 29 industrial sectors, 1995-1999, and 2000-2002	Positive		Industry-level panel data analysis	FDI inflows have a way of affecting salient economic activities such as bringing about increase in the surplus budget of the government, exports and employment opportunities, and with the growth of industries in the country
Gochino (2007)	Kenya manufacturing industry		Human capital, sectoral FDI	A firm-level survey analysis	The results of the study showed that foreign firms gain more from high human capital development and firm-level capabilities than local firms do

Maathai and Sahoo (2008),	Indian 9 major sectors, 1991-1992, and 2004 to 2005; FDI and sectoral growth	Positive	Export, labour productivity	Co-integration approach	FDI had a positive effect on metallurgical and transport sectors, Chemicals
Vu and Noy (2009)	Six sectors from different nations, sector-wise data	Positive or negative based on the direction of labour productivity	Sectoral FDI, labour productivity	Cross country regression	Variations exist in the growth of FDI, from sector to sector
Sen (2011)	The Indian service sector, 1970 to 2008, sectoral FDI and economic growth	Positive		OLS	Positive effect largely is driven by important factors like transport, communication, trade, storage, and hotels
Cheah (2013)	The service sector, 2002 to 2011	Positive	Per Capita FDI, export	OLS	Per capita, FDI had a relationship, and a significant one to be specific, with on the

					service export sophistication. This significant effect was based on a long-run dynamic with a non-linear pattern
Ilboudo (2014)	The Chilean mining sector, post-Pinochet era FDI and labour productivity	Long term		Cobb-Douglas production function	His results show that FDI influx has a long-term relationship with the labour productivity of Chile's mining sector
Kaliappan et al., (2015)	The service sector of ASEAN countries, 2000 to 2010	Positive	FDI, inflation, trade openness, human capital, market size	OLS	The positive impact of FDI within this period was concluded to be dictated by the size of the market, level of trade openness, infrastructural development, and human capital.
Fillat and Woerz (2011)	50 OEC, Asian, and European countries	Varies	Labour productivity, FDI	Industrial level panel analysis	Their findings showed the existence of variations across industries.

Bijsterbosch and Kolasa (2010)	Central European nations for industrial level data	Positive	Labour, absorptive capacity, FDI	OLS	FDI leads to productivity increase for both sectoral and country analysis
Thangavelu et al (2015)	The service sector of five countries in the Association of Southeast Asian Philippines, Thailand, Indonesia, Singapore, and Malaysia between1990 and 2005 Nations;	Conditional	Trade openness, FDI, productivity, GDP	Using the fixed effects and Generalized Method of Moments	The findings reveal that productivity of labour will correspondingly increase the more a nation is export-oriented in all these five countries
Azeroual (2016)	The inflow of FDI into the total factor productivity of the manufacturing sector of Morocco	Variations in direction	TFP, FDI	Generalized Method of Moments (GMM) system in	Negative impacts for French, while Spain's own is positive and significant to the sectoral productivity of Morocco.

	from two countries: France and Spain, 1985 to 2012			dynamic panels	
Morrar and Gallouj (2016)	Palestinian service sector	Positive	Labour productivity growth	Panel data analysis	There is a positive and significant effect of FDI on the labour productivity growth while capital intensive service sectors exercised a greater influence on labour productivity growth
Oladimeji (2013)	Nigeria's Manufacturing sector	Negative	Technology, labour productivity, FDI	OLS	Negative effect, especially in the context of Chinese competition that kills the operations of local firms in Nigeria (textile)

Ajibola et al. (2018	Nigeria's manufacturing, mining, oil and the telecommunications sectors, 1986 to 2009	Variation	Labour productivity, technology, FDI	ECM	only the influx of FDI into the telecommunication sector had a positive relationship with the economic growth of Nigeria, while the manufacturing sector turned out to have negative relationship with economic growth
Ezeanyeji and Ifebi (2018)	Nigeria's telecommunications sector	Positive	GDP, labour, FDI	OLS	The analysis of the regression model revealed that there has been an immense contribution of FDI to the smooth existence of the Nigeria's telecommunications sector, especially in terms of its inputs to the nations GDP
Wahab (2020)	Nigeria service sector, 1981 to 2018	Long run relationship= positive		Vector Error Correction Model	On the short-run dynamic of the model, a significant and positive relationship was seen to exist between the services

		Short term= positive			FDI and economic growth where there was a break, while a negative and insignificant relationship was established between them where we had a situation without a break
Subash (2006)	Firm level data, India's manufacturing industry, 1994 to 2002	Positive	TFP, FDI	Pooled OLS	Significant positive vertical spill-overs but not horizontal ones
Jorn et al. (2006)	Investigated effects of the presence of foreign firms in local Hungarian markets on Hungarian firm's growth	Conditional	FDI, productivity, technology	OLS	The findings of the study were that growth, occasioned by horizontal spill-overs were significant but there was no evidence that backward spill-overs made way for economic growth

			transfer, income		
Blalock & Gertler (2009)	Indonesian manufacturing firms from 1988 to 1996	Variation	Technology, level of income, FDI	OLS	Their finding suggests that the economic growth is greater for firms that have more room to "catch up" than it is for already competitive firms
Meyer & Sinani (2009)	Firms in the Central Europe economies	Varies under capitalism and socialism	FDI, TFP, Interest rate, competition	Comparative analysis	They claimed that FDI had also brought about institutional changes in transitional economies to accommodate the necessary technological, economic and managerial changes which accompany foreign investment