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What is the Impact of Inward Foreign Direct Investment on Export Performance? Evidence from Nigeria

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What is the Impact of Inward Foreign Direct Investment on Export Performance?

Evidence from Nigeria

By

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ABSTRACT

The empirical objectives of this study are threefold. The first is to examine the relationship between aggregate inward Foreign Direct Investment (FDI) and the aggregate volume of exports of the Nigerian economy. The second is to investigate the effect of disaggregated (sectoral) FDI on the volume of exports in Nigeria. The final objective of this study is to examine empirically the effect of FDI on the export performance of domestically-owned firms at the firm level.

To achieve the first objective, we use time series data on macroeconomic variables in Nigeria from 1980 to 2015. The ARDL cointegration technique is employed to examine the long-run relationship among the variables. The results reveal that aggregate FDI has a positive long-run relationship with aggregate exports. However, when exports are disaggregated into oil and non-oil exports, a different picture emerges. The results show that the positive relationship between FDI and exports in Nigeria holds only for oil exports. The relationship between FDI and non-oil exports is not statistically significant.

Since different sectoral FDIs may have different effects on the export performance of the host country, we further examine the relationship between disaggregated (sectoral) FDI and exports in Nigeria. The ARDL cointegration technique is also employed in this analysis, with FDI disaggregated into three broad sectors: primary sector FDI, manufacturing sector FDI, and service sector FDI. Meanwhile, exports are, again, classified into oil exports and non-oil exports. The results indicate that there exists a long-run relationship between the different sectoral FDIs and total exports. However, as in the first analysis, the results show that this long-run relationship holds only for oil exports, and not for non-oil exports. Examining the effects that the sectoral FDI might have on oil exports, it is found that only primary sector FDI and manufacturing sector FDI have a statistically significant positive effect on oil exports.

A final empirical objective of this study is to go beyond the macroeconomic outlook so as to examine, at the industry and firm level, the effect of inward FDI on the export performance of domestically-owned firms. Using firm-level survey data from 2007 to

2014 (obtained from the World Bank), we investigate whether Nigerian local firms start to export and/or increase the intensity of their exporting when foreign firms enter their sector. This firm-level analysis is limited to examining horizontal spillover, as the study focuses on the effect of FDI on domestic firms within the same sectors. The study found support for the existence of horizontal export spillover. The empirical results suggest that FDI presence increases the probability that domestic firms will export, however, FDI presence appears to have no effect on the export propensity or intensity of domestic firms.

The findings of this study provide an empirical assessment of the aggregate and disaggregated effect of FDI on the exports of a developing country, namely, Nigeria, and point to future policy changes that could enhance the gains that can be accrued from inward FDI. There is a need to focus on attracting not just FDI, but specifically, the type of FDI that aligns with the macroeconomic and development objectives of the host country.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1   Chapter overview

This chapter contextualises the study and introduces the main aim of this research. The chapter begins with a discussion of why FDI is important and topical in the empirical literature and policymaking sphere. This is followed by a discussion of the research motivation and the specific gap in the existing literature that the research intends to fill. The aim and objectives of the research are also highlighted. The chapter concludes by stating the structure of the whole thesis.

1.2   Background

Does inward foreign direct investment (FDI) benefit the host country? This question has been the subject of abundant theoretical and empirical enquiry in international economics and international business. Judging by the strong expansion of world FDI flows recorded since the early 1980s (De Vita and Lawler, 2004) and the effort of policymakers to attract FDI, it may seem that the answer to this question is obvious and settled. As Alfaro and Charlton (2007, p. 6) observed, "*More than 160 national level and more than 250 sub-national investment promotion agencies worldwide are tasked with performing various activities to attract foreign direct investment*". In addition to this, there has also been an increase in the type and value of locational incentives such as significant trade concessions, financial assistance and tax breaks that are offered to foreign investors by national governments (UNCTAD, 2003). This enthusiasm by policymakers about FDI is not entirely unjustified. According to Moran et al. (2005), the conventional wisdom from the Washington consensus was that FDI is 'unequivocally good' for the host country provided that the foreign firms do not pollute the environment or commit human rights violations.

Another reason for the increasing drive for inward FDI stems from the belief that FDI is a special type of foreign capital. This is because, in addition to financial capital,

foreign investors tend to bring with them superior (or at least different) technology, management skills, and experience in the global market. Moreover, perhaps more than any other source of foreign capital, FDI has the potential of creating employment opportunities, stimulate domestic productivity, boost economic growth and promote host country export (De Vita and Lawler, 2004). However, despite the potential contribution of FDI to the economic development of the host country, and the attendant optimism of policymakers, there is little consensus in the empirical literature on the actual impact of FDI. Available evidence suggests that the answer to the question, 'Does FDI benefit the host country' is not obvious, and far from settled.

Nowhere is the question about the contributions of FDI more necessary than in developing countries in general, and sub-Saharan Africa in particular. With characteristics such as a low level of capital, a relatively unsophisticated manufacturing base, low productivity, reliance on raw materials, exports and a large market, FDI can provide a lever towards increased productivity, technological and export upgrading, especially for developing countries. Indeed, FDI features prominently in the economic development and export-led growth strategies of newly industrialised countries such as China and India. Hence, it is worth asking whether FDI has, or can, accomplish similar economic outcomes in sub-Saharan Africa.

In the past four decades, Nigeria has consistently remained one of the top recipients of FDI in Africa and has been one of its top exporters. Although the contribution of FDI to macroeconomic variables such as GDP growth and productivity has received some attention in the empirical literature, the relationship between FDI and exports in Nigeria has received, by comparison, scant attention. Against this academic background, the chief question motivating this research is, '*Does FDI promote exports in Nigeria?*' – This primary question also constitutes the main aim of this PhD thesis, as highlighted in section 1.4 below where associated objectives are broken down.

1.3   Academic justification and research gap

In addition to dominating the global flow of FDI, MNEs also dominate global trade flows, as it is estimated that about two-thirds of the world's trade is carried out by Multi-National Enterprises (MNEs) (UNCTAD, 2007). This statistic suggests that MNEs' FDI plays a significant role in the international trade position of both the host (recipient) country and the home country.

According to the theoretical literature and empirical evidence, FDI can affect the export performance of the host economy directly or indirectly. The literature can broadly be divided into two strands: (i) studies that focus on the direct contribution of MNE affiliates' exports to the host country's national or regional exports; and (ii) studies that examine whether the presence and activities of MNE affiliates may indirectly affect the export performance of domestic firms.

The direct effect of FDI on host country export is predicated on the fact that MNE affiliates are typically larger, more productive, technologically advanced and more experienced in the international market than domestic firms. And according to Dunning's eclectic framework of international production (see Dunning, 1977), when MNEs go abroad, they tend to possess certain firm-specific intangible assets that allow them to compete favourably with domestic competitors, who may have an informational advantage. The superior technological and managerial assets of MNE affiliates often translate into a productivity advantage and, in many cases, in better export performance. Several empirical studies provide evidence that suggests that MNE affiliates export more than domestic firms, and subsequently, increased FDI inflows increase the volume (quantum) of the host country's exports (see, for example, Anwar and Nguyen 2011a, 2011b; and Xuan and Xing, 2008). However, exceptions to this positive relationship have been highlighted. The contribution of increased FDI to the host country's export has been argued to depend, amongst other things, on the host country's macroeconomic policies. For instance, Lall and Mohammad (1983) and Sharma (2003) find that FDI did not have any effect on the host country's exports when the host country embarks on restrictive and inward-looking macroeconomic policies.

Furthermore, the impact of inward FDI on the export performance of the host country may not be uniform across sectors and likely to vary depending on the type of FDI and the export sector/category considered. Wang et al. (2007), for example, find that FDI has a higher effect on the export of labour-intensive goods than for technology-intensive goods. Similarly, the results of Onyekwena et al. (2015) show that FDI has a positive effect on primary good exports, a negative relationship with intermediate exports and no significant impact on final good exports of the Economic Community of West African States (ECOWAS).[1] These findings suggest that FDI could have a differential effect across export categories. Most prior empirical studies tend to lump different sectoral exports together and use FDI data at the aggregate level. However, analysis at this level of aggregation may mask differential effects across sectoral FDI flows, especially across different sectoral export categories thus failing to provide results that can be relied on or yield a policy-relevant answer, as there is a qualitative difference between the different types of FDI and export categories. Accordingly, in studying the FDI-export relationship, it important to ask: which FDI? Which exports?

In an oil-dominated economy like Nigeria, it seems critical to examine FDI and exports, not only at the aggregate level but also considering how their oil and non-oil components may differ. For example, primary sector FDI tends to have limited linkages with the rest of the economy and is often export-oriented. As Hirschman (1958, p. 110) pointedly puts it, *"the grudge against what has become known as the 'enclave' type of development is due to this ability of primary products from mines, wells and plantations to slip out of a country without leaving much a trace in the rest of the economy"*. Hence, this type of FDI is likely to have a different effect on oil and non-exports. Manufacturing sector FDI and service sector FDI, on the other hand, may also have different effects on oil and non-oil exports, as they tend to have more linkages with domestic firms and, possibly, affect their productivity and exports in a different way.

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[1] The Economic Community of West African States (ECOWAS) is made up of fifteen member countries located in the Western African region. These countries have both cultural and geopolitical ties and shared common economic interest. They are: Benin; Burkina Faso; Cabo Verde; Côte d'Ivoire; Gambia; Ghana; Guinea; Guinea Bissau; Liberia; Mali; Niger; Nigeria; Senegal; Sierra Leone; and Togo.

Thus, the possibility that these sectoral FDI inflows may have varied effects across different export categories calls for a different approach to studying the FDI-export relationship. Previous studies, especially in the Nigerian context, have not taken this disaggregated approach. This critical gap motivates this research and underlines the significance and novelty value of its contribution to knowledge.

In addition to the direct effect of inward FDI, FDI may also have an indirect effect on exports. While existing empirical studies on the direct effect of FDI may provide evidence that FDI increases the export level of the host country, their results do not, however, distinguish whether the improvement in export level is as a result of increased export activities of the MNEs' affiliates or whether domestic firms have enhanced their exports also thanks to the presence and exporting activities of the MNEs. These indirect effects are referred to as *spillover* effects. Hence, another strand of the literature on the FDI-export relationship is devoted to understanding these spillover effects from FDI and their impact on domestic firms.

Earlier theories (see, for example, Buckley and Casson, 1976; and Hymer, 1976) posit that MNEs invest in a host country in order to internalise their ownership advantages. These advantages include superior technology, brand names, superior managerial and marketing capability, and experience in the international market. Ownership advantages are expected to help them compete against local firms who have an informational advantage. However, these ownership advantages can scarcely be fully internalised within the MNE due to their public good nature. Hence, they diffuse to the local firms, and as a result, could lead to improvement in the productivity and export performance of local firms.

Several empirical studies have analysed the various sources and different aspect of FDI export spillover. Earlier studies such as (Aitken et al., 1997 and Greenaway et al., 2004) focused only on horizontal spillover, while later studies began to take into account other possible sources of spillover such as vertical spillover which covers both backward and forward linkages (see, for example, Kneller and Pisu, 2007 and Chen et al., 2013). Over

the years, there has been an increasing contribution to this strand of the literature. However, despite the enormous amount of empirical investigation on FDI spillover in general, and export spillover in particular, the majority of the studies focus on developed and transition economies, while very little attention has been paid to African countries. The scant attention that has been paid to this strand of the literature is largely as a result of the unavailability of firm-level data, and to a lesser degree, the relatively poor performance of African economies' export compared to other regions. Thankfully, recent surveys by the World Bank have made firm-level data on African firms available, therefore allowing for the examination of export spillover in these countries. However, as yet, very little has been done in examining this critical link for FDI in African countries and Nigeria in particular. The few studies such as Abor et al. (2008) that studied the effect of FDI on the export behaviour of local firms, only looked at whether foreign affiliates did in fact export more than domestically-owned firms. Their results do not examine whether local firms in the industry or in the region gained from the presence and export activity of the foreign affiliates. Only a few studies such as Gachino (2014) and Kinuthia (2016) examine the spillover effect of FDI presence and activity.

Consequently, this PhD study aims to address this gap in the literature by analysing the impact of inward FDI on the export performance in Nigeria. In addition to studying the direct effects of FDI on export growth, this study will investigate whether the presence of foreign affiliates affects the export performance of domestic firms. Although no single country is representative of the African experience, Nigeria encompasses several characteristics that are typical of African countries such as excessive reliance on raw materials, a relatively underdeveloped manufacturing base and a large market. Therefore, the findings of this research may provide useful policy insights to other African countries.

1.4   Research aim and objectives

The primary aim of this research is to empirically investigate the impact of inward FDI on export performance in Nigeria at both aggregate and disaggregated level. In order to achieve the aim of the research, the following objectives will be addressed:

1. To conduct a comprehensive analysis of the Nigerian FDI and export position along with a thorough, up-to-date, critical review of relevant theoretical and empirical literature on the relationship between inward FDI and Nigerian exports;

2. To estimate the relationship between aggregate inward FDI and oil and non-oil exports in the Nigerian economy;

3. To empirically investigate the effect of disaggregated (sectoral) FDI on different export categories;

4. To empirically investigate the spillover effect of the presence of MNEs on domestically-owned manufacturing firms' exports;

5. To draw relevant policy implications.

It is by achieving the aim of this research and the associated objectives as set out above that this thesis makes *a significant and original contribution to knowledge* since, to date, no previous econometric analysis of the relationship between inward FDI and Nigerian exports at aggregate and disaggregated (by type of FDI and sectoral export categories) has been reported in the literature. Section 7.2 of the Conclusion chapter ('Summary of findings') will summarise how each of these objectives has been addressed, followed in Section 7.3 by a discussion of the Thesis' 'Contributions to knowledge'.

1.5   Structure of the thesis

The rest of the thesis is structured as follows. Chapter 2 is dedicated to surveying the political and economic context of Nigeria, the country setting of this study. The geographical, economic and political environment of Nigeria as well as the trends and structure of both FDI and export flows, are examined. A history of FDI and export policies that have been enacted by the Nigerian government from the pre-independence era to the current administration are also reviewed in detailed.

Chapters 3 and 4 provide a thorough, critical review of relevant literature, focusing on previous theoretical and empirical studies, respectively. The theoretical postulations and predictions underpinning the relationship between FDI and exports are examined first, and then the empirical evidence with respect to these predictions is reviewed. From this review, a clear gap is identified and the specific hypotheses to be subjected to empirical analysis in this PhD study are formulated.

In Chapter 5, the appropriate econometric techniques for the empirical analyses to be conducted in the subsequent chapter are identified and justified after a review of alternative econometric methodologies and any trade-offs involved in these choices. The econometric analyses and the empirical results of the study are presented in Chapter 6. These results and their significance are further discussed in detail in Chapter 6, also in the context of previous evidence.

Finally, in Chapter 7, the overall conclusions of the thesis are drawn. The findings of the study are summarised, and the contribution to knowledge highlighted. The policy implications that flow from the findings are then amply discussed. This final chapter concludes by acknowledging the limitations of the work and by suggesting profitable avenues for future research.

CHAPTER TWO

COUNTRY PROFILE

2.1   Chapter Overview

Before proceeding to investigate the impact of FDI in Nigeria, it is worthwhile to describe the political and economic context of Nigeria. This chapter begins by examining the geographical, political and economic environment of Nigeria. Policies that have influenced the flows and structure of FDI from pre-colonial times to the present are also examined. In addition, the trends and structure of both FDI to and exports by Nigeria are reviewed in detail.

2.2   A brief overview of Nigeria's geography and natural resources

Nigeria is situated in West Africa. The Nigerian territory covers an area of 356,669 square miles, which is about three times the size of the United Kingdom and about the size of France and Italy combined. Nigeria is surrounded by mostly francophone countries. On the east, Nigeria is bordered by Cameroon, on the west by the Republic of Benin, on the south by the Gulf of Guinea, which includes the Bights of Benin and Biafra. Nigeria shares a border with the Republic of Niger in the north, while in the north-east, Lake Chad delimits Nigeria from Chad. Nigeria's geography covers roughly 700 miles from north to south and by about 650 miles from west to east. It lies between the longitude of 3° and 15° and latitude of 4° and 14°.

Figure 2.1: Map of Nigeria

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Source: https://www.bbc.co.uk/news/world-africa-13949550

Different natural resources abound in Nigeria. Nigeria has a wealth of mineral deposits
such as coal, iron ore, tin, lead, copper, zinc, many of which are located mostly in the
hills and plateaus of the middle belt (Falola and Heaton, 2008). Commercial quantities
of resources such as gold, silver, limestone, columbite and diamonds have also been
discovered in different parts of the country. Among the mineral deposits, the
exploitation of limestone for cement has been fairly successful, starting from the
establishment of the West African Portland Cement Company, which is a joint venture
between the Nigerian government and the British firm, Associated International
Cement. With time, other cement companies such as Benue Cement Company, Sokoto
Cement Company commenced operations, and following this set are the more recent
and still existing, BUA Cement and Dangote Cement. Dangote Cement is currently the
largest cement company in Nigeria, controlling over 70 percent of the total cement
production capacity and has begun to export to other African countries (Akinyoade and
Uche, 2017).

The most prominent natural resource in Nigeria is oil, which is located mainly in the
Niger Delta region. Since the 1960s, oil and allied industries have become the most
important sector in the country, yielding about 90 percent of Nigeria's export earnings
and constituting over 75 percent of the public revenue (Ayanwale, 2007). Despite the
gains from oil as a major revenue earner, Nigeria's reliance on oil has come at a huge

cost. This overreliance has exposed Nigeria to the vagaries of world petroleum prices, increased corruption among public officials, and hampered the development of other non-oil sectors, particularly the manufacturing sector.

2.3   The Nigerian Political Environment

The political history of a country is crucial in the shaping of its economic history. The resulting social systems, institutional frameworks, economic policies and developmental progress of the country are inevitably tied to the political processes and history that gave birth to it. Nigeria is no exception. In order to arrive at a proper appreciation of the economic policies and attitude towards trade and foreign investment in Nigeria, it is necessary to trace how the political and economic systems have evolved in Nigeria over time, and the consequences these have had on the fate and future of Nigeria.

Before its independence in 1960, Nigeria was a British colony. In 1914, Frederick Lugard who was the Governor-General in Nigeria amalgamated what was then the Northern and the Southern protectorate to form what is now Nigeria. By this singular action, the British succeeded in bringing together many disparate ethnic groups, some of whom were very different in their ethnic identity, culture and religion and had, before then, not much interaction with each other. Although three ethnic groups - Igbo, Hausa, Yoruba - constitute the majority in the country, there are over 250 ethnic groups with distinct identities and languages. This diversity in itself should not constitute a huge problem, as the cases of other multi-ethnic countries such as Indonesia suggest.[2] However, it is the manner in which this ethnic diversity is politicised in national life that has continued to pose a significant threat to the continued survival of the Nigerian nation. Instead of serving as a base for diversity in human and natural resources, differences in religious and ethnic loyalties have led to a series of ethnic clashes and

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[2] Indonesia is used here merely as an example of a developing country building its prosperity on solid economic growth (rising at an average rate of 5 per cent per year) which, nevertheless, is characterised by a very diverse ethnic make-up of over 300 ethnic groups including Javanese, Sundanese, and Batak.

mutual suspicions culminating in over seven successful military coups and ultimately a civil war. All these events have shaped Nigeria's economic history and the type of policies it has pursued.

Nigeria practised the parliamentary system of government for six years after its independence. In 1966, the civilian government was ousted in a military coup for alleged corruption. This first coup was the first in a list of unfortunate events that were soon to follow. Six months after the first coup, there was a counter-coup carried out mainly by military officers from Northern Nigeria, who believed the first coup, which was led by military officers from the South-East, was an attempt by the Igbos to dominate the country (Falola and Heaton, 2008). The first coup led to a spate of massacres in the country, as about 80,000 to 100,000 easterners were killed in the Northern part of the country during this period. Lacking faith in the ability of the federal government to guarantee the safety of the easterners in the north, the military government in the Eastern region announced that the region was seceding from Nigeria to form an independent country called Biafra. Nigeria's attempt to block the secession led to the three and a half years Nigeria-Biafra civil war, which ended in 1970. At the end of the war, the federal government succeeded in keeping the nation united. From 1970 until 1999, Nigeria has had successive military dictators who were only ousted in multiple coups. In 1999, Nigeria returned to civilian rule (presidential system) and has had uninterrupted democracy for about 20 years now.

The successive civilian governments have adopted policies that aim, at least at the face of it, at creating a unified Nigerian identity. However, ethnic and religious loyalty and the inter-ethnic and interreligious animosity it births remain unabated. The clash of regional, ethnic and religious identities has not only been about political power. Often, what ends up as the government's economic policies are the outcome of the pressure from these different interest groups. As Garba (1995, p. 257) notes, "*Who gains, who loses in these federal, state and local policy arenas is rarely an accident. More often than not, the distributional consequences of public policies are the intended result of the private interests which have been instrumental in their design, passage and*

12

implementation." As a result of this, industrial policies and development plans are modified or neglected, or even deliberately designed to cater to political considerations.

An example that illustrates this is the issue of industrial location. Where to locate key industries has been one of the key contentions of Nigeria's industrial policies. During the early post-independence years, there was pressure to spread foreign or government-owned enterprises among the three regions in order to create even development. In one instance, new businesses or branches of existing enterprises were regularly pressured into siting their plants in northern Nigeria, regardless of whether it made economic sense to do so (Biersteker, 1978).

At the end of the oil boom when Nigeria decided to privatise many of its public corporations, there was vehement political opposition from some parts of the country. The political elites from the North feared that the more advanced private sector in the South would be the sole beneficiary of the exercise (Ikpeze et al., 2004). To allay this fear, what came as a political compromise was a form of 'privatisation' where the federal government would sell equity of these national corporations to state governments. So, instead of making all the shares available in the open market, the federal government 'allocated' these privatised shares to state governments to buy on behalf of their people. The state governments were then expected to hold on to these shares and then sell directly to people from their states when they are ready to buy. These examples show how ethnic consideration often trumps productive efficiency or economic viability arguments.

The consequence of having such a fractious nation where sectional interests are dominant is that economic objectives and strategies are pursued in an uncoordinated and on an ad-hoc basis, without regard to national vision. In fact, what is often touted as national agenda is merely in rhetoric. As Ikpeze et al. (2004, p. 342) remarked, "*not every public policy fails; and not every public programme or project is redundant. But when once in a while a policy succeeds, it is often not because of government per se, but in spite of it*".

2.4   Economic context and trends

Nigeria is often referred to as the 'Giant of Africa' because of its large population. With an estimated 180 million people, Nigeria is currently the most populous country in Africa, and the second largest economy in Africa (OECD, 2015). However, in terms of per capita GDP, Nigeria ranks 12th in Sub-Saharan Africa (SSA), with an annual per capita GDP of $5,601, slightly above the regional average of $4,856 (OECD, 2014). Nigeria is the largest producer of oil in Africa, with an estimated production of over 2 million barrels per day, more than Libya, Algeria and Angola. This abundance of oil has, in turn, attracted many of the world's largest oil companies to invest in Nigeria.

At independence, Nigeria was largely an agrarian economy. Agriculture was the largest contributor to GDP, the highest earner of foreign exchange and employing a greater proportion of the labour (Ayanwale, 2007). With the discovery and exploration of oil in the 1960s, Nigeria embarked on the drive towards import-substitution industrialisation policy. The rationale behind this policy was both economic and political. On the political front, the policymakers at the time believed that the independence of the country would not be complete without some level of self-reliance in the production of key goods and services. For the elite, it also made economic sense to industrialise, as they hoped it would lead to a more prosperous Nigeria (Ogbuagu, 1983). These motivations were also behind the push for indigenisation (this is discussed in detail in the next section).

The boom in oil prices in the 1970s brought in windfall revenue for the government, and largely changed the destiny of Nigeria. It is estimated that between 1973 and 1981, Nigeria earned over $90 billion from oil (Ikpeze et al., 2004). Expecting a continued increase in the price of oil, the Nigerian government went on a spending spree. The public sector became bloated, and by the early 1980s, it accounted for about 50 percent of GDP. Due to the increase in foreign exchange earnings and high appreciation of the exchange rate, imports became cheaper and the import bill increased. Consequently, with the increased dominance of oil and increased importation of foreign goods, the agricultural and industrial sectors were severely weakened.

The global oil glut of the 1980s led to a fall in oil prices and created a series of macroeconomic problems for Nigeria. The country started to witness increasing unemployment, exchange rate problems, inefficient public services, fiscal deficit, recession and inflation. (Ikpeze et al., 2004). With dwindling public revenues and macroeconomic crisis, Nigeria accepted the IMF-backed Structural Adjustment Programme. This policy measure marked the beginning of Nigeria's journey towards economic liberalisation. This includes liberalising trade and allowing foreign investors to participate in the economy. Economic reforms continued and gained further momentum when the civilian government took over from the military in 1999.

In terms of growth of the economy, GDP fluctuated sharply during the recession of the 1980s. As can be seen in Figure 2.2, the GDP growth rate rose from -13 percent in 1981 to about 10 percent in 1985 and then fell to about -10 percent in 1987. However, from 1990, GDP growth became more stable and remained positive, notwithstanding the blip in 2004/2005. From 2000, the GDP rate picked up significantly and maintained an average growth rate of at least 5 percent.

Figure 2.2: GDP growth, 1980-2013 (Annual %)

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Source: World Bank, World Development Indicators Database (2014), http://data.worldbank.org/data-catalog/world-development-indicators.

A breakdown of the components of the real GDP growth shows that real GDP averaged 6 percent growth rate between 2007 and 2012. An interesting development for Nigeria

15

is the growth of the non-oil sectors. Despite oil playing a huge role in the economy, the non-oil sectors have recorded an average growth rate of 8 percent since 2007. Oil GDP, on the other hand, fluctuates sharply, mostly in response to the global oil prices.

Figure 2.3: GDP growth components (%)

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Source: IMF, *World Economic Outlook Database* (2013), *www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx.*

The structure of Nigeria's economy is also consistently evolving. Although agriculture and the oil sector remain the highest contributors to GDP, their shares of GDP have been declining over the years, while services and manufacturing have seen their shares rise. From Figure 2.4, agriculture and mining (including oil) contributed 33 percent and 22 percent, respectively, to GDP in 2008. However, their GDP contribution decreased to 22 and 19 percent, respectively, in 2018. Meanwhile, manufacturing sector witnessed a significant improvement in two decades, as its share of the GDP rose from 2 percent in 2008 to 12 percent of the GDP in 2018.

Figure 2.4: GDP split by sector (percentage)

	2008	2013	2018

Agriculture	33	22	22
Mining and Quarry (including oil)	38	15	19
Manufacturing	2	7	10
Construction	1	3	4
Finance, real estate and business services	6	15	12
Trade	15	18	17
Other services	5	20	16

Source: Author's calculation from Central Bank of Nigeria Statistical Bulletin, 2018)

2.5 History of FDI policies in Nigeria

The history of FDI policies in Nigeria can be categorised in many ways. For example, it could be classed into two eras – colonial and post-colonial era. Under this section, FDI policies are classed under three epochs: pre-independence era, indigenisation era and investment promotion period.

2.5.1 Pre-independence FDI

The first post-independence policies that were aimed at foreign investors are somewhat relics of the policies that were in place during colonial times. Between 1945 and 1960, the time Nigeria was struggling for its independence, foreign trade and foreign-owned companies were viewed with suspicion. As pointed out by Caves (1996, p. 252), "*MNEs have encountered hostility and resentment in all countries that host substantial foreign investment, but nowhere more than in LDCs, where they get blamed for the national economy's manifest shortcomings, not to mention that historical sins of colonial domination.*" During the struggle for political independence, there was a strong sentiment towards economic nationalism among the Nigerian elite.

In the colonial era and the early post-independence years, foreign-owned firms dominated the economy. The most productive sectors and manufacturing base of the

economy were dominated by investors and entrepreneurs from industrialised countries (mostly British). The trade and distribution sector consisted of other foreign nationals such as the Lebanese, who acted as middle-men; while the base of the economy consisted mostly of few Nigerians who further acted as commissioned agents for manufacturers and the trading houses (Ogbuagu, 1983). The exclusion of Nigerians in the political, administrative and economic sphere during the colonial era led many of the Nigerians who were agitating for political independence to also demand economic independence.

As far back as the 1940s, the Nigerian nationalists began to express their resentment of the exclusion in the running of the affairs of the country. To quell the agitation, the British conceded and allowed for the 'Nigerianisation' of the civil service in the 1950s. This measure allowed Nigerians to gradually begin to replace foreigners at the highest level of the civil service. The agitation for the 'Nigerianisation' of the civil service was pursued alongside the demand for the increased participation of Nigerians in the industrial and commercial sectors of the economy. The goal of this movement was that, by independence, Nigeria would have an industrial base that was fully sustained by indigenous manpower and resources. For many of the nationalists, the development of a domestic industrial base did not only have economic significance, but it also carried political significance (Ekundare, 1976). It was thought that less reliance on foreign investors and capital meant less dependence on foreign countries, and therefore meant more political independence.

Nevertheless, in formulating an industrial development policy, the nationalists, realising the acute shortage of indigenous capital and technical expertise, changed their position on foreign investors. The government designed several incentive packages in the 1950s, the final years of the colonial rule, in order to attract and retain more foreign investments. Tax relief ordinances such as the Aid to Pioneer Industries Ordinance and the Income Tax (Amendment) Ordinance were passed in 1952 in order to exempt 'pioneer' industries (basically, industries the government considered favourable to the economic interest of Nigeria) from paying tax for two to six years of their operation, and also, to be able to claim allowances for their expenditure on fixed assets in their

early years of operation. The Industrial Development Ordinance which was passed in 1958 superseded the previous two ordinances by expanding the scope of 'pioneer' industries as well as extending the length of tax holidays granted to the foreign investor.

Furthermore, given the earlier rhetoric and political stance of many of the people in government, foreign investors (mainly British) were reassured in constitutional conferences and national policy statements that the government had no plan of nationalising their firms after independence. The assurance with regards to nationalisation and their freedom to repatriate profits were further enshrined in the 1960 independence constitution.

2.5.2 Post-independence FDI policies in Nigeria

Following Nigeria's political independence in 1960, the sentiments and campaigns for increased participation of Nigerians in the workforce and control of foreign-owned firms within the country did not go away. On 1 October 1960, Nigeria's Independence Day, about 83 percent of senior civil service positions were held by non-Nigerians. However, in just a year, this number decreased to 26 percent (Ogbuagu, 1983). Despite the 'Nigerianisation' of the political sphere, the liberal policies towards foreign investors continued for the first six years. The first national development plan of 1962-1968 provided protection to foreign investors, guaranteeing them equal access to investment incentives as indigenous investors. Nigeria became a signatory to the World Bank's "*Convention on the Settlement of Investment Disputes between States and Nationals of Other States*" in 1965 to further show its commitment to allowing a third-party to intervene should any dispute arise between it and foreigners within its boundary (Biersteker, 1978).

With time, however, Nigeria slowly started moving away from the liberal FDI policies it had adopted. First, after Nigeria became a republic in 1963, it passed The Immigration Act of 1963 requiring foreign firms to obtain business permits and 'approval status' before commencing operation. This was followed by the establishment of the Expatriate Quota Allocation Board in 1966. The board was tasked with increasing the participation of Nigerians in the control and management of economic resources (Ekundare, 1972).

Nationalisation sentiments gained more impetus when in 1966, two military coups happened, therefore marking a departure from civilian to military rule in Nigeria. With the return of the military, many of the previous regulations and incentives aimed at attracting and retaining foreign firms were promptly discarded. The two military coups caused a vicious circle of political crisis and instability which, ultimately, led to a civil war that lasted for three years, from 1967 to 1970. Not surprisingly, there was little new foreign investment in the country during the civil war due to political instability and also because the government embarked on several war-time policies that had a significant effect on the existing foreign-owned firms. In a bid to bolster wartime funding, the government imposed a 65 percent supertax on the profits and dividends of multinationals. Also, the government introduced stringent foreign exchange control regulations aimed at reducing the drain on the government's foreign reserves (Biersteker, 1978).

Furthermore, during the civil war, the Nigerian military government passed the Companies Decree in 1968. Under this Act, foreign subsidiaries were required to incorporate their firms as independent businesses, separate from their parent companies, and were also required to have 'Nigeria' as part of their name (Ogbuagu, 1983). The aim of this Decree was to bring these subsidiaries under the control of the existing company law, by which the foreign firms were required, for instance, to make public their accounts and disclose their directors and shareholders.

The trend towards indigenisation continued after the civil war. In the second development plan that was issued in 1970, the government's plan to pursue the goal of indigenisation was made clear:

Beginning with the present Plan [1970-74 Plan], the Government will establish an Agency whose sole responsibility will be to ensure that all employers (private and public) conform to the Nigerianisation policy to which the nation has been long committed. The Agency will work closely with the Expatriate Quota Committee, which

is responsible for processing applications for allowing expatriates into the country. Furthermore, Government will establish a strict timetable for Nigerianisation of various sectors of the economy, taking into consideration the peculiar manpower requirements of individual industries.

…It will be naive, indeed dangerous, to hope that in the process of industrial development, a set of national objectives will automatically be achieved by their mere declaration. A truly independent nation cannot allow its objectives and priorities to be distorted or frustrated by the manipulations of powerful foreign investors.

…To this end, the government will seek to acquire, by law of necessity, equity participation in a number of strategic industries that will be specified from time to time. In order to ensure that the economic destiny of Nigeria is determined by Nigerians themselves, the government will seek to widen and intensify its positive participation in industrial development. (Federal Republic of Nigeria, 1970, pp. 288-289).

In line with the Plan, the military regime enacted another law, the Industrial Training Fund Decree of 1971, which was aimed at the 'accelerated training of local businessmen, the provision of advisory and training services and the improved flow of capital, technical and market information' (Hoogvelt, 1979).

The trend towards indigenisation reached its apex in 1972 with the promulgation of the Nigerian Enterprises Promotion Decree, otherwise known as the 'Indigenisation Decree'. The decree gave the businesses affected two years to fully comply with its provisions. Under the decree, businesses were categorised into two schedules. Schedule 1 included twenty-two industries who were involved in light small-scale processing and manufacturing, medium scale service business (such as advertising, lotteries and dry-cleaning), transportation and media and retail trade. The businesses under this schedule were, as we have pointed out earlier, businesses that were dominated by foreigners from the Levantine and few Nigerian entrepreneurs.

Schedule 2 comprised of thirty-three industries in which non-Nigerians are not permitted to be the owner or part owner. Enterprises under Schedule 2 included some large-scale import substitution businesses, wholesale and retail businesses, construction firms, processing industries and low-technology manufacturers. Non-Nigerians were not totally alienated in all the businesses listed under this schedule, as restriction depended on the size of the enterprise. When the paid-up share capital of a business was less than ₦400,000 or their turnover less than ₦1,000,000 (whichever one was deemed appropriate by the National Enterprise Promotion Board), foreigners were fully restricted from being owners or part-owners. However, if the paid-up share capital exceeded ₦400,000 or the turnover was more than ₦1,000,000, then the business was required to make available to the Nigerian public 40 percent of its shareholding. Many of the country's largest businesses were exempted from schedule 2, and although there was no legal mandate for them to offer up their shares to the Nigerian public, there was an implicit expectation that the businesses would, willingly and as they deemed fit, slowly incorporate more Nigerian owners and managers, in line with the trend of the rest of the country.

The aim of the indigenisation policy, it appears, was to increase the participation of Nigerians in small and medium scale businesses while encouraging foreign investments to move to the more sophisticated industries where indigenous entrepreneurs had not built up the relevant management and technical expertise. This may explain why many of the country's largest manufacturing businesses that are owned by multinationals were exempted from Schedule 2 (Collins, 1974).

Despite the touted aims of the policy of the 1972 decree, it was largely not effective. Some commentators have observed that the failure of the decree was because it was "*careless in design and sloppy in implementation*" (Hoogvelt, 1979, p. 57). The design of the decree was flawed in that, despite the fact that it was aimed at increasing the participation of indigenous entrepreneurs in the control of economic activities, it did not consider whether there were enough Nigerian businesspeople who had the capital to buy the many assets that were made available. The 'unintended' consequence of this was a concentration of these assets in the hands of very few Nigerian elites. Although

the resulting effect of the decree may appear unintended, many scholars argue that the consequences were indeed the intention of the exercise. Given that the indigenisation decree was passed in 1972, two years after the end of the Nigerian-Biafra civil war where about 2 million lives were lost in the south-east of Nigeria, there was already a reduction in the number of indigenous businesspeople from that region who could have participated in the exercise. Also, as Biersteker (1978) argued, the emergence of a new class of wealthy Nigerian elites who made a fortune supplying wartime equipment to the warring sides, increased the pressure for indigenisation as they sought to consolidate their wealth. Yet, there was also the angle of ethnic suspicion. Before the civil war, the Igbos, from the south of Nigeria, were considered more entrepreneurial and aggressive in business than other ethnic groups (Harris and Rowe, 1971). However, the civil war left particularly Igbo businesspeople economically devastated, and at a disadvantage when the indigenisation exercise commenced. This led many to suspect (or believe) that the policy was a deliberate attempt by other ethnic groups in Nigeria in collusion with the government to intentionally exclude the Igbos from playing an active role at the highest level of economic activities in the country (Ogbuagu, 1983). Another factor that has been put forward to explain the poor design of the decree is the increasing role of oil in the economy. From the early seventies, oil began to dominate the economy, and this new-found wealth may have deceived the government into believing that the country had enough means to undertake the indigenisation programme.

In terms of implementation, the 1972 indigenisation decree had limited success. In 1975, a year after the deadline for completion of the indigenisation exercise, the government set up an Industrial Enterprises Promotion Panel of Inquiry to investigate the performance of the indigenisation exercise (Hoogvelt, 1979). The panel found that the National Enterprises Promotion Board lacked adequate capacity to supervise the process. While a few guidelines were set at the federal level, many of the steps involved in supervising these transfers of ownership were left at the discretion of the staff of the board, which resulted in corruption and poor implementation. Also, the government's plan of increasing Nigerians participation in the small to medium scale enterprises, that was previously dominated by the Levantine (Lebanese and Greeks) community did not materialise as the liberal changes in naturalisation laws made it easier for members of the Levantine community to naturalise, and hence exempted them from the

indigenisation policy (Collins, 1974). Consequently, by 1975, it was found that only about 33 percent of the affected businesses had complied with the indigenisation decree (Hoogvelt, 1979).

After the release of the recommendations of the panel, the pressure for increased indigenisation intensified. The military government responded by revising and extending the indigenisation law in a new Nigerian Enterprises Promotion Decree in 1977. Under the new decree, new categorisation of businesses - Schedule 3 - was introduced. As was the case in the previous decree, industries listed in Schedule 1 were slated for full ownership by Nigerians. More industries, even some which were previously in Schedule 2, were added to the list. This includes wholesale distributors of merchandise, travel agencies, transportation and media. The inclusion of some industries that were previously listed in Schedule 2 meant that the foreigners had to relinquish their 60 percent equity stakes in the businesses.

Thirty-three new industries were added to Schedule 2. Among the new industries that were added to this list were banking, insurance, food processing and manufacturing, iron and steel production and petrochemical industries. Under the new decree, the requirement of Nigerian participation in business ownership was raised from 40 to 60 percent. The major extension of the new decree was Schedule 3, which included all the large capital-intensive industries that were exempted from the previous decree. Industries listed under Schedule 3 were required to offer up 40 percent of their equity.

The second indigenisation decree was the most restrictive policy step and the culmination of the agitation for indigenisation in Nigeria that started since the pre-colonial times. It was this decree that, for the first time, affected all foreign business owners in Nigeria.

2.5.3   Investment promotion era

The increasing role that oil played in the economy in the 1960s, leading up to an oil boom in the 1970s made the government pay greater attention to the oil sector. After

Nigeria joined the Organisation of the Oil Producing Countries (OPEC) in 1971, following the trend in other member states, the government expanded its interest in the newly established foreign oil companies, signing partnership agreements in the upstream and downstream activities of the sector. Facing pressure to further increase its participation in the oil sector, the Nigerian government, after the war, acquired a majority equity in Shell (Nigeria) through its national regulatory body, the Nigerian National Oil Corporation (NNOC) (Biersterker, 1978). Government further acquired stakes in other oil companies such as AGIP, SAFRAP, Gulf and Mobil by 1974 (Fiona, 1991). The motivation behind these acquisitions was that the government wanted to be in control of the windfall oil proceeds and channel them towards industrialisation.

In the early 1980s, the fall in global oil prices due to an oil glut affected Nigeria significantly. Faced with severe macroeconomic and microeconomic imbalances such as reduction in foreign exchange earnings, fiscal deficit, inflation, rising unemployment, the poor performance of government-owned enterprises and a shortage of foreign investors particularly in the oil sector, the government adopted the IMF-prescribed Structural Adjustment Programme (SAP) in 1986. The objectives of SAP with respect to industrial and investment promotion were:

- *encourage the accelerated development and use of local raw materials and intermediate inputs rather than depend on imported ones;*
- *develop and utilize local technology;*
- *maximize the growth in value-added of manufacturing activity;*
- *promote export-oriented industries;*
- *generate employment through the encouragement of private-sector small and medium scale industries;*
- *remove bottlenecks and constraints that hamper industrial development, including infrastructural. manpower and administrative deficiencies; and*
- *liberalise controls to facilitate indigenous and foreign investment* (Federal Republic of Nigeria, 1986, pp. 200)

With the adoption of the macroeconomic policies embedded in the SAP, the government began to reconsider its restrictive policies. Many of the restrictive policies

were gradually relaxed or removed. In 1987, the government promulgated a new Nigerian Enterprises Promotion Act (Issue of Non-Voting Equity Shares) which allowed foreign firms to increase their shareholding in any business in Nigeria, provided that the shares in question were non-voting shares, and were paid for in foreign currency (Aremu, 2003). A further relaxation of the indigenisation decree came in 1989 when measures were announced which repealed the restrictions on foreign ownership for businesses in Schedule 2 and Schedule 3. The exceptions were insurance, banking, oil production and mining, where foreign investors are not allowed to own more than 40 percent of the equity (Fiona, 1991). Also, as part of the SAP, other policy measures were introduced to encourage the inflow of foreign investment such as the Industrial Development Coordination Committee (IDCC), the Companies and Allied Matters Decree and the financial liberalisation policy.

Backed by increased oil revenue, it is estimated that between 1975 and 1995, Nigeria spent over $100 billion establishing state-owned enterprises (OECD, 2015). But, in the wake of the global oil shock and the subsequent adoption of SAP, the government progressively moved towards increasing private sector ownership of the hitherto public enterprises. This led to the enactment of the Privatisation and Commercialisation Act 111 in 1988. The policy was aimed at gradually privatising or commercialising state-owned enterprises. In the first round of the privatisation exercise from 1988 to 1993, foreigners were prohibited from participating, except in the petroleum sector.

The move for more openness culminated in the landmark decree in 1995, when Nigeria repealed the NEPD and replaced it with the Nigeria Investment Promotion Commission (NIPC), marking a total shift from the policy of FDI restrictions and the beginning of a sustained increase in FDI inflow in Nigeria. The NIPC Act provided that foreign investors could own up to 100 percent equity stakes in all sectors of the economy with the only exception of the petroleum sector - where ownership is limited to joint ventures or production-sharing agreements.

When the civilian government took over in 1999, the Bureau of Public Enterprise (BPE) and the National Council on Privatisation were set up to conduct a second round of privatisation. The federal government aimed to divest part of its equity stakes in key sectors such as telecommunications, steel and coal production, petroleum refining, cement production and banking. In this round of privatisation, local investors, as well as foreign investors, were allowed to purchase equity stakes. By the end of 2006, over 116 government-owned enterprises had been privatised (McKinsey Global Institute, 2010).

Beyond the establishment of the NIPC, the promotion and attraction of investments both from domestic and foreign investors became a critical item in the economic planning and strategies of all subsequent governments. In 2003, Nigeria launched the National Economic Empowerment Development Strategy (NEEDS), a plan made to guide government policies until 2007. The agenda of NEEDS was to reform public service and improve its efficiency; improve security and welfare of the country; and increase the participation of the private sector, especially foreign private investors, in the economic growth process. NEEDS was followed up by an even more ambitious Vision 20:2020, which was a development plan detailing Nigeria's goal of making it to the top 20 economies in the world by the year 2020.

2.6   Recent FDI trends in Nigeria

The volume and sectoral flows of FDI in Nigeria have been influenced by its investment and industrialisation policies (reviewed above), global macroeconomic trends and the development of the oil sector.

SSA countries, compared to their peers, have had a dismal record of attracting inward FDI. Nevertheless, Nigeria has over the past two decades remained one of the largest recipients of inward FDI in Africa.

Figure 2.5: Top 10 destinations of FDI in Africa

Top 10 destinations of FDI in Africa (average 1980 to 2015)

Legend: Average FDI inflows, USD million — Share of FDI inflows in total
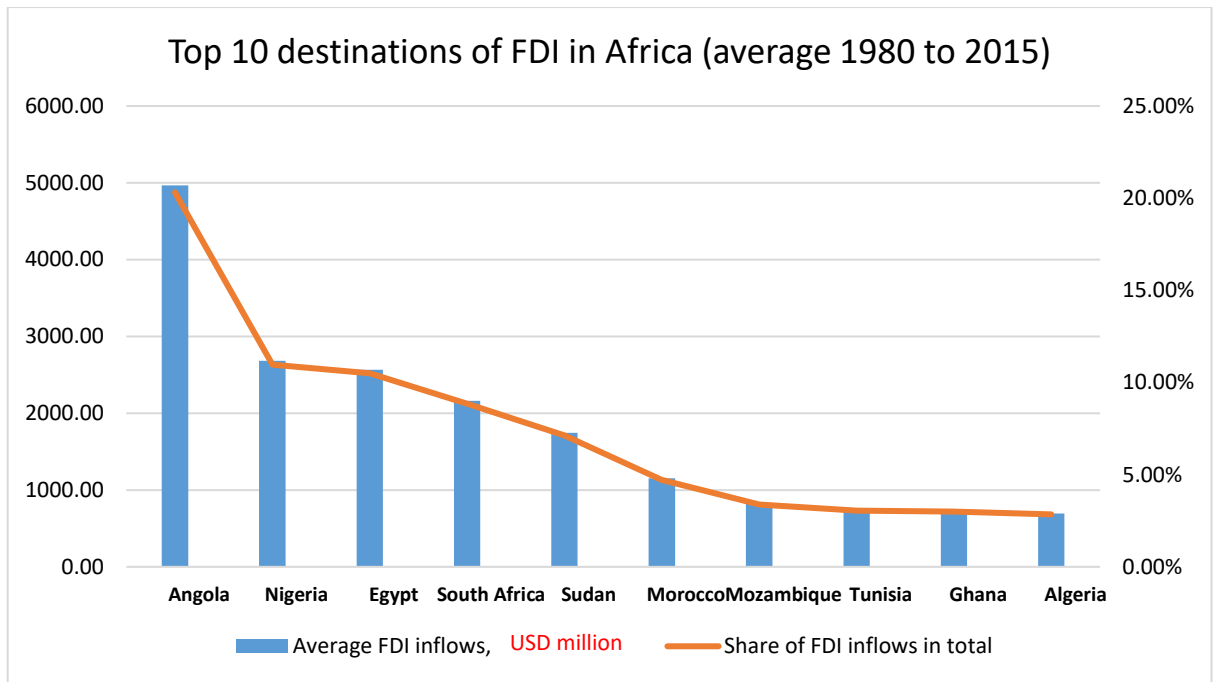
Source**:** Author's own calculations based on data from UNCTAD (https://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics.aspx).

Before the 1980s, FDI in Nigeria was limited due to the restrictive policies, particularly the indigenisation decree, it had adopted. However, following the adoption of SAP and the opening up of all sectors of the economy to foreign investors through the establishment of NIPC, FDI inflow significantly and consistently increased. The volume of FDI inflows before 1988 was consistently below $1 billion annually. However, in 1989, the volume of the inflows increased six-fold. In fact, since 1989 the volume of inward FDI has consistently surpassed this threshold and reached a record level of $8.9 billion in 2011 (OECD, 2015). Since the advent of democracy in 1999, FDI inflows in Nigeria have been growing steadily, recording an annual growth of 10 percent between 2005 and 2011. This growth is also more stable in Nigeria than in South Africa, where FDI inflows have been experiencing sharp increases and decreases since 1995 (see Figure 2.6).

Figure 2.6: FDI inflows into Nigeria and South Africa, 1985-2012 (USD Million)

Source: IMF, Balance of Payments Statistics Database, www.imf.org/external/pubs/cat/longres.cfm?sk=19299.0 and International Financial Statistics Database (2013), http://data.imf.org/?sk=5DABAFF2-C5AD-4D27-A175-1253419C02D1.

When it comes to FDI, Nigeria held about 10 percent of the total FDI in Africa in 2005, while about 30 percent of the FDI stock was located in South Africa. However, by 2013, Nigeria's share of total FDI stock from Africa increased to 12 percent, while South Africa's decreased to 20 percent (Figure 2.7). A significant proportion of FDI inflows to SSA goes to Nigeria, as over a sixth of the total SSA FDI and about two-thirds of ECOWAS stock was located in Nigeria by 2013 (OECD, 2015)

Figure 2.7: FDI stock distribution in Africa, 2005 and 2013

Source: UNCTAD FDI Database (2013), http://unctad.org/en/Pages/DIAE/DIAE%20Publications%20-%20Bibliographic %20Index/ Pub-FDI-Statistics.aspx.

Although Nigeria remains one of the top recipients of FDI in Africa, the share of its FDI stock as a share of GDP is quite low compared to other emerging economies. As shown in Figure 2.8, FDI stock represented only 16 percent of Nigeria's GDP, compared to 33 percent in Brazil and 43 percent in South Africa.

Figure 2.8: FDI stock as a percentage of GDP in Nigeria compared to other economies, 2012

Source: IMF, International Financial Statistics Database, http://data.imf.org/?sk=5DABAFF2-C5AD-4D27-A175-1253419C02D1 and World Economic Outlook database (2014), www.imf.org/external/pubs/ft/weo/ 2014/02/weodata/index.aspx.

Although recent data on FDI by sector is hard to come by, some available evidence suggests that, although FDI in Nigeria has historically been dominant in the oil sector, other non-oil sectors have also seen an increase in their volume of FDI receipt. Manufacturing, telecommunications, engineering and construction, and financial services are among the key sectors that have seen significant increases. According to the data by CBN (2009), there has been a significant increase in foreign private investment in sectors other than oil. Figure 2.9 shows that foreign private investment was dominant in the primary sector (including oil) between 1990 and 2001. However, this trend was reversed in 2001 with the commencement of the privatisation exercise through the BPE. The privatisation exercise increased the flow of FDI to the manufacturing sectors and service sectors.

Figure 2.9: Sectoral distribution of FDI in Nigeria from 1980 to 2009
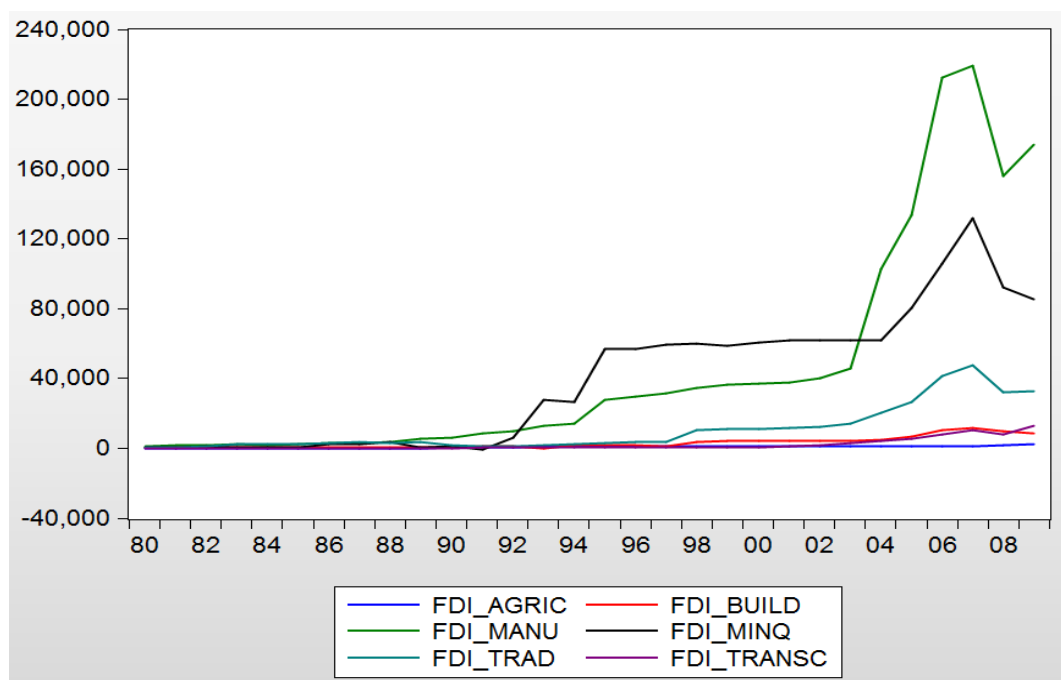
Source: Author's own calculations based on data from CBN (2009)

Nigeria's record has also been dismal when it comes to FDI stock per capita. Indeed, it must be noted that despite being one of the largest FDI recipients in Africa, Nigeria is also the most populous country, hence its current FDI stock is still far below its potential. As shown in Figure 2.10, Nigeria's FDI stock per capita in 2012 was $453,

which is two times lower than that of Indonesia and about seven times lower than South Africa's.

Figure 2.10: FDI stock per capita in Nigeria compared to other economies, 2012

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Source: IMF, *International Financial Statistics Database*, http://data.imf.org/?sk=5DABAFF2-C5AD-4D27-A175-1253419C02D1 and World Economic Outlook database (2014), *www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx*.

Although FDI has been increasing in Nigeria since 1999, the current level of inflow still lags below Nigeria's potential. The flow of FDI still mirrors the structure of the economy in the way FDI is still predominant in the oil sector. Hence, the government's attempts to attract non-oil FDI must correspond with other policies aimed at diversifying the economy.

2.7   Export Policies and incentives

A country's trade policy is an important component of its economic development and investment promotion plan. In many cases, the international trade policies are interrelated with the foreign investment policies. For example, in a bid to promote the influx of foreign investors, a country may embark on import-substitution, export-promotion strategies as Nigeria pursued in the early independence years.

In addition to enacting investment promotion policies such as the Aid to Pioneer Industries Ordinance of 1952 and the Industrial Development Ordinance of 1958, the Nigerian government, as part of its industrialisation strategy, passed several policies in the early independence years with the aim of protecting infant industries and promoting exports of locally made products. The Customs Duties Act (Dumped and Subsidised Goods Act) of 1958 was aimed at charging extra duties on imports that were subsidised by the home country, and to prevent dumping of these products in Nigeria. The argument in favour of this measure was that it protected infant industries from unfair competition from foreign producers. By 1965, this restrictive tariff measure progressed to non-tariff restrictions. Initially conceived to limit the number of imports mostly from Japan and Hong Kong, by 1965, the government placed a blanket ban on several non-essential imports and subsequently placed a total ban on all products from Japan and Hong Kong (Alaba et al., 2008).

The Customs Drawback Regulations was also enacted in 1959, as a means of encouraging the export of manufactured products from Nigeria. Under the provisions of the Act, firms that are engaged in export can receive waver on raw material import. Firms were allowed to claim back any duties they may have paid in importing their inputs when they provide evidence of exporting their outputs. As Sokolski (1965) observed, within the first two years of the Act, over ₦315,000 were claimed by export-oriented firms.

During the oil boom period, Nigeria witnessed a change in the structure of its exports. As shown in Table 2.2, non-oil exports stagnated while oil became Nigeria's predominant export. The collapse of the global oil prices in the early 1980s coupled with economic mismanagement by the government caused severe macroeconomic crises in Nigeria. To alleviate this, Nigeria adopted the IMF-led SAP in 1986, which advocated for a liberalised trade policy in a bid to diversify the economy away from oil exports. As part of SAP, Nigeria gradually undertook trade liberalisation measures such as the abolition of the ineffective commodity marketing boards, reducing the number of banned imports from 74 to 16 and scrapping the import and export licencing system (Jerome and Adenikinju, 1995).

Significant effort and resources were also channelled into export financing. The Export Incentive and Miscellaneous Provisions decree was passed in 1986 to enable the CBN to provide finance and facilities to commercial and merchant banks so they could, in turn, provide credit and financing to exporting firms. This move to make funding increasingly available for exporting firms led to the establishment of the Nigerian Export Credit and Insurance Corporation in 1988. In 1991, the corporation was renamed Nigerian Export-Import Bank.

The value of total exports has been on the rise since 1995. However, in spite of Nigeria's export promotion efforts, the composition remains relatively the same. In the post-SAP period, non-oil exports have not recorded significant growth, averaging about 3 percent share of total exports from 1988 to 2007 (see Table 2.2). Nevertheless, since the return to democracy, decent progress has been achieved due to the economic reforms carried out by the civilian government. Entrenched in its national development strategy plans such as NEEDS and Vision 20:2020 is the diversification of the economy and export competitiveness.

Despite Nigeria's increasing trade liberalisation, restrictions on the importation of some manufacturing and agricultural products are still present. However, Nigeria has adopted several incentives aimed at assisting and encouraging exporters of non-oil products. Some of the current incentives for exporting firms are discussed below (FMITI, 2013).

Manufacture in-bond Scheme (MIBS): This scheme is designed to encourage export manufacturers to import raw materials or intermediate inputs (whether they are prohibited or not) provided they are used in producing products for exports. The MIBS is backed by a bond issued by any financial institution. Upon exportation and repatriation of foreign proceeds, the bond will be discharged.

Export Expansion Grant Scheme (EEG): This scheme is also targeted at non-oil exporters. It is calculated following a detailed 'Weighted Eligibility Criteria' formula. Before its suspension in 2014 and subsequent redesign in 2017, EEG was granted in the form of Negotiable Duty Credit Certificates (NDCC) which exporters can use to settle import duties. In its present form, the NDCC has been replaced by the Export Credit Certificate (ECC) which can be used to offset among other things, import duties, excise duties, VAT, and can also be used to buy government bonds.

2.8   Export trends in Nigeria

Before the arrival of the colonial authorities, agriculture was the mainstay of the economy. Local businessmen at this point mainly traded on agricultural products. As Kilby (1969) estimates, in 1900, 90 percent of the £1.7 million exports from Nigeria (bought by mostly European traders operating in the coastal areas) comprised mainly of palm products. With time, the introduction of other cash crops such as peanuts, cotton, cocoa and rubber boosted agricultural exports.

The colonial government invested in improving infrastructure that would serve the purpose of exporting raw materials to Europe. Thousands of miles of railway and roads were constructed, rivers were dredged and harbours were created to enable the free movement of goods (Falola and Heaton, 2008). Table 2.1 shows the growth of some selected economic indicators such as investment in infrastructure, government expenditure and international trade from 1913 to the early post-independence years. The table shows a rapid growth in government's expenditure on transport, construction and education, but also, more importantly, how exports, of mostly raw materials, rapidly became Nigeria's leading sector within the period.

Table 2.1: Selected Economic Indicators, 1913 – 1966

1965

Source: Kilby (1969).

Since the end of the World War II, the external sector has remained a crucial and dominant sector in Nigeria. From the 1940s to the early post-independence years, agricultural produce was the major export from Nigeria. However, with the discovery and exportation and oil, this trend took a dramatic turn. Oil exports took over from non-oil exports (mostly agricultural products) as the most important foreign exchange and public revenue earner.

Table 2.2: Value of Exports from 1950 – 2015 (₦'00 Million)

	Oil exports	Non-oil exports	Total exports

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Source*:* Data obtained from CBN Statistical Bulletin, various issues.

Table 2.2 depicts the value of Nigerian exports from 1950 to 2015. Nigerian export trends can be categorised into three broad periods: from 1950 to 1958, the second from 1958 to 1994, and lastly from 1995 to the present day. As can be seen in Table 2.2, prior to 1958, non-oil exports, constituted mostly by agricultural products, represented 100 percent of Nigeria's exports. Oil exportation commenced in 1958, constituting only about 0.07 percent of total exports. The diversification of Nigeria's exports away from agriculture reflected the larger economic realities of the country. Non-oil exports had averaged over 80 percent of total exports from 1950 till 1968. However, the decline of non-oil exports from 82.5 percent of total exports in 1968 to 16.9 percent in 1973, signalled the growing importance of the oil sector in the economy.

The oil boom of the 1970s brought in an unprecedented windfall revenue to the government. In 1958, earnings from oil exports was less than ₦2 million. However, it astronomically rose to ₦1.7 billion in 1972. By 1973, the global oil shock quadrupled the oil price, with the price of oil rising from about $3 to nearly $12. This global price inflation, in turn, caused a dramatic increase in Nigeria's export earnings, by almost 300 percent. Oil earnings in Nigeria increased from ₦1.9 billion in 1973 to ₦5.4 billion in 1974.

As oil exports grew in value and share of total exports, non-oil exports started declining. Although the decline of the share of non-oil exports to total exports was only relative to oil exports, several factors in the political and economic scene caused the value of non-oil exports to remain stagnant, and in some years, fall in absolute terms. The first is the effect of the oil sector growth. Often referred to as the 'Dutch disease', the tremendous increase in windfall revenue from the petroleum sector triggered a chain of effects that affected other sectors in the economy. The oil sector boom led to an appreciation of the real exchange rate of the naira, therefore making exports from other sectors, particularly the manufacturing and agricultural sector, uncompetitive in the international market. The currency appreciation also meant that imports were cheaper, which in turn to led to a boom in the import bill. For example, while domestic

production of agricultural products declined, food import rose to an astonishing high of about $4 billion in 1982 (Daramola et al., 2008)

Another possible explanation for the poorer performance of non-oil exports in Nigeria was the performance of the Commodity Marketing Boards. Originally set up by the colonial government in 1946, these marketing boards were tasked with stabilising the country's export prices by buying from farmers and selling directly to the international market. This scheme was devised as a means of buffering against the fluctuation of prices in the international market. In practice, however, these marketing boards operated differently. They often paid farmers significantly less than the international price for their product. As a World Bank report noted, "*Although the original objective in establishing the marketing boards was to stabilise prices earned by farmers to improve the marketing organisation, they have been used during the sixties as a convenient instrument for taxing agriculture… the return to the farmers engaged in production of exports is low*" World Bank (1974, p. 130). In 1986, after the adoption of the SAP, these commodity marketing boards were scrapped.

Figure 2.11:   Composition of Nigeria's export from 1960 to 2015

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Source: CBN Statistical Bulletin various issues

As shown in Table 2.2, as oil became more prominent non-oil exports fell dramatically. In 1963, non-oil exports constituted about 90 percent of total exports. However, in just 11 years, its share of total exports fell to under 8 percent. This transformation is illustrated in Figure 2.11. The scissors-shaped chart shows how the dominance of non-oil exports is replaced by oil exports. By 1970, the contribution of the oil sector and non-oil exports was almost even. However, that point of intersection in Figure 2.11 marked the decline of non-oil exports and the ascendancy of oil. In 2000, the contribution of non-oil exports was minuscule, representing a mere 1.5 percent of the total exports' share. Despite the dismal contribution of the non-oil sector exports, some progress has been achieved. As shown in Table 2.2, the non-oil sector improved from a 1.5 percent share of total exports in 2000 to a 7.5 percent share in 2015.

The third era in the categorisation of Nigerian export trends is from 1995 to date. Figure 2.12 depicts the growth of total exports in Nigeria from 1960 to 2015. As is obvious from Figure 2.12, the value of exports pre-1995 was very low. Total exports grew by about 361 percent in 1995, from the 1994 level. From 1993, Nigeria began a process of liberalising its investment policy and commercialising and privatising its public enterprises, which attracted large FDI inflows (Ayanwale, 2007). By 1995, Nigeria repealed the NEPD and established the NIPC. These policy measures increased the volume of foreign investment and subsequently contributed to the increased export growth. Total exports increased from ₦206 billion in 1994 to ₦905 billion in 1995 (CBN, 2015), an astonishing 300 percent increase. As shown in Figure 2.12, from 1995 onwards, the value of total exports steadily increased.

Figure 2.12: Nigeria's total exports from 1960 to 2015

Source: Data obtained from CBN Statistical Bulletin, various issues.

2.9   Summary

Nigeria constitutes the country setting of this PhD study. Accordingly, by way of contextual background, this chapter examined the geographical, political and economic context of Nigeria and the different investment and export policies and objectives that have been set in different eras, beginning from colonial times. The review suggests that the political history of Nigeria has in no small way shaped the resulting economic policies, and subsequently, the flows and structure of foreign investment to and exports from Nigeria. The analysis of the evolution of the industrial and investment policies shows how Nigeria moved from hostility and resentment towards foreign investors to a position of economic liberalisation.

Since opening the economy to foreign investors through the establishment of the NIPC in 1995, there has been an upward trend in FDI inflows. In absolute terms, Nigeria has been one of the top recipients of FDI in Africa. However, its FDI stock per capita in

comparison with other emerging economies is quite low. This perhaps reflects the consequence of the ethnic and religious clashes which plague Nigerian politics, which, in turn, affects the stability of the polity and the type of policies that are enacted. In some cases, as we pointed out, ethnic and regional considerations were given undue consideration over economic viability. The return to civilian administration and the promotion of private sector involvement has helped to unlock the stagnation of Nigeria's industrial development. However, much is still required.

The trend of Nigeria's exports is similar to the FDI trend. Although Nigeria started out with non-oil products as its predominant export product, the discovery of oil, the subsequent oil boom and the attendant effect of the Dutch disease occasioned by poor economic management, radically changed the structure of Nigeria's economy and, consequently, its exports. Although Nigeria's total exports have been growing in absolute terms, from the 1970s, Nigeria's exports became predominantly oil-based. Nonetheless, some progress has been made in recent years in reversing this trend. Perhaps, with more concerted efforts by policymakers, non-oil sectors might play an increasingly important role in the economy, with non-trivial consequences for the prospects of both FDI inflows and Nigerian exports.

CHAPTER THREE

THEORETICAL UNDERPINNINGS OF THE INWARD FDI – EXPORT PERFORMANCE NEXUS

3.1   Chapter overview

The objective of this chapter is to introduce the complex concept of foreign direct investment (FDI), provide a synthesis of FDI theory and then hone in on the theoretical hypotheses regarding the specific link between inward FDI and export performance. The next section begins with a critical evaluation of the definitional aspects and types of FDI, followed by a review of various general theories of FDI. Specific hypotheses regarding the FDI effects on exports are then critically examined, in terms of both direct and indirect (spillover) effects. The chapter concludes with a summary.

3.2   What is FDI?

Before reviewing the theories of FDI, it is opportune to explore its definitional aspects so as to gain a fuller understanding of this complex construct. In its general sense, FDI refers to the setting up of business by a foreign national, firm or government in a host country, either wholly owned or in partnership with domestic investors. As can be evinced by the many definitions offered by the academic literature (see Table 3.1), different authors seem to place emphasis on different definitional features.

Table 3.1: A non-exhaustive list of FDI definitions from the literature

Author(s)	Definition	Main definitional feature
(U.S. Department of Commerce 1937, p. 10).	*"all foreign equity interests in those American corporations or enterprises which are controlled by a person or group of persons . . . domiciled in a foreign country"*	Control

(U.S. Department of Commerce 1953, p. 4).	In their survey of both inward and outward FDI, FDI is categorised as follows: 1. *"Foreign corporations, the voting securities of which were owned to the extent of 25 percent or more by persons or groups of affiliated persons, ordinarily resident in the United States."* 2. *"Foreign corporations, the voting stock of which was publicly held within the United States to an aggregate extent of 50 percent or more, but distributed among stockholders, so that no one investor, or group of affiliated investors, owned as much as 25 percent."* 3. *"Sole proprietorships, partnerships or real property (other than property held for the personal use of the owner) held abroad by residents of the United States."* 4. *"Foreign branches of United States corporations."*	Control
Graham and Krugman (1991, p. 7).	*"ownership of assets by foreign residents for purposes of controlling the use of those assets"*	Control
(IMF, 1993, p. 93).	*"an investment made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor's purpose being that of having an effective voice in the management of the enterprise*	Lasting interest and control
OECD (1996, p. 8).	*"an incorporated or unincorporated enterprise in which a foreign investor owns 10 percent or more of the ordinary shares or voting power of an incorporated enterprise or the equivalent of an unincorporated enterprise... An effective voice in the management, as evidenced by an ownership of at least 10 percent, implies that the direct investor is able to influence, or participate in the management of an enterprise; it does not require absolute control by the foreign investor"*	Ownership/effective voice
UNCTAD (2007, p. 245).	*"an investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise, affiliate enterprise or foreign affiliate)"*	Lasting interest and control

OECD (2008, p. 17).	*"a category of cross-border investment made by a resident in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor*	Lasting interest
Teng, Chern, and Kim (2001, p. 62).	*"FDI is the flow of capital across national boundaries for maintaining control over production activities conducted by the firm's overseas subsidiary, and for establishing service facilities and conducting business activities in a foreign market".*	Capital flows and control
Winters (2002, p. 2).	*"Purchase and control of an entity in one country by residents of another"*	Ownership
Jones and Wren (2006, p. 7).	*"the name given to the process where a firm from a country provides capital to an existing or newly-created firm in another country."*	Capital flow/ownership
Curry (2008, p. 132).	*"procurement by residents of one country of real assets in another country"*	Ownership
Wild, Wild and Han (2008, p. 204).	*"Purchase of physical assets of a significant amount of the ownership (stock) of a company in another country to gain a measure of management control"*	Management control
Rugman and Collinson (2012, p. 74).	*"Ownership, whole or partial, of a company in a foreign country"*	Ownership
Harrison (2014, p. 65).	*"The establishment or acquisition of production or other facilities in a foreign country over which the investing firm has some degree of control"*	Ownership/control

Source: *Author's elaboration*

The numerous definitions of FDI presented in the table above are helpful in highlighting the key (most salient) features of FDI. Although the list is not exhaustive, the main features of FDI are covered in the definitions.

As can be seen in Table 3.1, one of the earliest definitions of FDI was provided by the US Department of Commerce in 1937. According to this report, direct investment refers to "*all foreign equity interests in those American corporations or enterprises which are*

controlled by a person or group of persons . . . domiciled in a foreign country" (U.S. Department of Commerce 1937, p. 10). Foreign 'equity interest' in this case includes all forms of stake-holding, intercompany accounts and advances. Interestingly, while the report stated 'control' as the criterion for categorising FDI, it did not define control (De Vita and Lawler, 2004). However, in a latter survey of 1953, the US Department of Commerce explicitly defined control in terms of having voting stock of at least 25 percent (U.S. Department of Commerce, 1953).

In past decades, numerous other FDI definitions placed particular importance on the idea of 'control' but lack of uniformity across countries as to what precise amount of 'control' constitutes 'ownership' of a foreign entity created ambiguity. As a result, over the years, the definition of FDI has slowly moved away from its emphasis on the idea of 'control'. Over the past two decades, in an attempt to reach a more uniform and consistent definition of FDI across countries, greater emphasis appears to have been placed on the definitional feature of 'lasting interest' (Lipsey et al., 1999). It is important to note, however, that 'lasting interest' and 'control' are used synonymously in some definitions. And, although they both are distinctive, 'lasting interest' and 'control' in some sense overlap in reflecting the level of investment that allows the foreign investor an 'effective voice' in the management of the business (foreign enterprise). In effect, both refer to the level of ownership which allows the foreign investor *"to influence, or participate in the management of an enterprise; it does not require absolute control by the foreign investor"* (OECD, 1996, p. 8).

To conclude, the author defines FDI as any investment embarked on by foreign entrepreneurs, businesses or governments in a host country with the clear aim of having some form of influence or control over the management of the investment.

Having traced the evolution of the definition of FDI, it is worthwhile to highlight several common features of FDI identified in Table 3.1. First, FDI is a 'category of cross-border investment'. This implies that not all foreign investments qualify as FDI. Broadly, foreign investments can be divided into two forms: portfolio investments and

direct investments. Although both portfolio and direct investments can be made by foreign residents (either private entrepreneurs, governments or multinational enterprises, i.e. MNEs), direct investments are fundamentally different. The most important characteristics of FDI that are common to all the definitions reviewed above and which set FDI apart from portfolio investments are the notions of 'lasting interest' and 'control'. Lasting interest implies that FDI is a typically stable and more long-term form of investment in nature, unlike portfolio investments which are generally more liquid, short-term and more likely to record a high level of turnover (Moosa, 2002). The idea of 'control' implies that FDI is made for the purpose of exerting some significant level of influence over the decision making and management policies and strategies of the business, which is not the case for portfolio investments (typically made for short-term gain).

In classifying direct investments, there exists no general consensus on what constitutes 'control'. As shown in Table 3.1, an early definition of FDI offered by the US Department of Commerce (1953), defined 'control' as ownership of at least 25 percent of the ordinary shares. However, many countries currently adopt the OECD (1996) recommendation that it takes a minimum of 10 percent of the ordinary shares or voting power before a foreign firm is able to exercise a significant level of 'control' or have 'effective voice' in the management of an organisation. The United Kingdom (UK) is part of the countries that have adopted this definition in their FDI accounting, although it had, until 1999, defined control as 20 percent instead of 10 percent (Jones and Wren, 2006). While the 10 percent ownership benchmark is a useful marker for FDI accounting, it is important to note that what constitutes FDI is more complex, and in some cases, a 10 percent shareholding may give a foreign investor an effective voice in the management of the business, or conversely, it is possible that the foreign investor may have some significant level of control even when it has less than 10 percent stake in the business. Much, of course, depends on how widely dispersed the remaining ownership is (Walker, 1983).

From the different definitions presented in Table 3.1, it is clear FDI originates from foreign investors. However, what is less clear is defining the 'nationality' of the FDI.

Usually, the nationality of a foreign investment is attributed to the country where the headquarters or the parent company of the MNE is resident in. But, as argued by Graham and Krugman (1991), the peculiar organisation and operation of MNEs - given that their activities spread across national boundaries - renders any attempt to attribute the nationality of an MNE to any country, including the country of its headquarters, imperfect. Emphasising further, they point out that, "*To call General Motors an American company, and Honda a Japanese one, does some violence to the fact that each is a multinational concern producing in several countries...The nationality problem becomes most acute in defining the effective nationality of firms originating from small and medium-sized countries. Philips, Hoffman-LaRoche, SKF and Seagram are all firms that originate in such countries (the Netherlands, Switzerland, Sweden, and Canada, respectively) yet do most of their production and sales elsewhere—in the case of Philips and SKF to such an extent that English rather than Dutch or Swedish is the official corporate language*" (Graham and Krugman, 1991, p. 8). The point here is not that MNEs are fundamentally stateless entities, but that as a result of the peculiar organisation and operation of MNES, they tend to shed their national identities.

Inward direct investment usually enters the host country in different modes, namely: mergers and acquisitions, greenfield investments, brownfield investments and licensing, and technology transfer.

Merger and acquisitions (M&As) involve the transfer of full or part equity in a business from the local enterprise to foreign investors. This is the most popular mode of entry by foreign investors as the bulk of foreign direct investments are made through M&As (Moosa, 2002). This mode of entry limits the risk of the foreign investor as some of the peculiar challenges of the host economy are mitigated by leveraging domestic expertise.

Greenfield investment involves the setting up of a new business plant or firm from scratch in a country other than the country of residence of the investor, while brownfield investment involves starting up a new business in a foreign country as well, but rather

than building a new operational site or build a plant from scratch, the foreign investor buys or leases an existing facility from a local firm.

Licensing and technology transfer, on the other hand, occur when a firm in one country (the licensor) grants another firm in another country (the licensee) the right to use its patents, technology and other intangible assets to produce on behalf of the licensor, though it should be made clear that while licensing allows local firms to use proprietary assets of foreign firms, it is not and does not classify as FDI.

It is generally held that FDI entry represents an inflow or increase in the capital stock of the host country, i.e. the economy recipient of the investment. However, not all inward direct investments increase the capital stock of the local economy. Inward investments that occur through, for example, merger and acquisitions may not necessarily increase the capital stock as they may only involve a transfer of ownership from the local enterprise to the foreign investor (Agosin and Mayer, 2000). Also, the growth of the activities of MNEs may not involve additional capital (Hennart, 2009). For example, a study of US multinational corporations showed that the bulk of their capital was borrowed from local sources, while only about 13 percent were from US sources (Mantel, 1975).

3.3   Types of FDI

FDI can be classified differently, depending on the perspective of the host country and that of the investing firm. For the classification from the investing firms' perspective, Caves (1971) groups FDI into horizontal, vertical and conglomerate FDI.

Horizontal FDI refers to investments that are made with the aim of expanding the operation of the MNEs in the host country. This involves replicating in the host country the production of the kind of goods that are made in the home country. This type of FDI is referred to as 'horizontal' because it is a form of geographical diversification for the

MNE as it duplicates the same activities or products it offers in the home country in different countries. For example, a car manufacturer acquiring another foreign car manufacturer, or establishing a new subsidiary in the foreign host country. Horizontal FDI may be undertaken either as a result of trade barriers or to exploit ownership advantages such as patents or trademarks.

Vertical FDI, on the other hand, refers to investments undertaken for the purpose of supporting the overall supply chain of the MNE. This could involve the location of production plants that produce intermediate products in a foreign location. Vertical FDI is typically undertaken in order to take advantage of certain location advantages such as relatively low-cost labour and/or availability of natural resources. Many theoretical developments in modelling FDI are based on vertical and horizontal FDI. For example, Helpman (1984) provides a comprehensive analysis of vertical FDI using a general equilibrium model based on factor endowments while Markusen (1984) analysed the case in which an MNE seeks higher profitability by optimising its operation through horizontal FDI. Brainard (1997) empirical tests show that trade barriers, high transportation cost and the similarity between home and foreign markets are factors driving MNEs to expand overseas horizontally. Nevertheless, Helpman (2006) argued that the traditional classification of FDI into vertical and horizontal FDI has become less meaningful as MNEs' outsourcing/offshoring and FDI practices become more complex and intertwined.[3]

Another type of FDI or motivation for FDI that has emerged is export-platform FDI. These are the type of investments that are undertaken in a host country primarily to gain access into a regional market or other third country markets. A significant proportion

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[3] As noted by De Vita and Wang (2006), o*ffshoring* can be said to occur when the supplier (or service provider) is located 'offshore', i.e. in a different country. If the transfer of an activity offshore stays within the ownership of the same company (e.g., own plant offshore), it is often referred to as *captive offshoring* and becomes indistinguishable from FDI.

of inward FDI in Singapore and Ireland have been based on exploiting the host country's advantage as an export platform (Dunning and Lundan, 2008)

Another classification of FDI type according to the investing firms' perspective is conglomerate FDI. Unlike horizontal FDI, which is concerned with geographical diversification, conglomerate FDI embeds product diversification for the MNE. Conglomerate FDI usually involves the setting up of different activities or producing goods in the host country different from the ones in the home country. One of the possible reasons MNEs venture into this type of FDI may be to take advantage of a gap in supply or increasing level of income in the host country. Conglomerate FDI also allows significant benefits stemming from economies of scope.[4]

Chen and Ku (2000) presented a different taxonomy for the classification of FDI, one based on the investing firms' perspective. They group FDI into two broad categories, namely, expansionary and defensive FDI.

Expansionary FDI refers to investments that are part of the expansionary internationalisation strategy of a firm as it seeks to exploit its ownership and firm-specific advantages in other countries. On the other hand, defensive FDI refers to FDI undertaken in order to remain competitive, in response to strategies by competitors. This usually involves locating production facilities in locations that allow the firm to reduce the cost of production and/or take advantage of the foreign location's immobile assets.

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[4] Economies of scope refer to savings stemming from reduced average total cost of production resulting from an increase in the number of different goods produced. Unlike 'economies of scale', therefore, they refer to "efficiencies formed by variety, not volume" (The Economist, 2008).

Concomitant to the FDI classifications discussed above, Moosa (2002) presents a categorisation of FDI from the perspective of the host country; one according to which FDI can be grouped as import-substituting FDI, export-promoting FDI and government-initiated FDI.

Import-substituting FDI involves investments in the production of commodities that were hitherto imported from abroad. This type of FDI is made with the intention of decreasing the import bill of the host country and may be attracted by the size of the host country market, potential trade barriers and transportation costs (Moosa, 2002). *Export-promoting FDI*, on the other hand, refers to investments located in a host country with relative abundance and low cost of raw materials and/or intermediate products, undertaken with the aim of exporting these inputs to the investing country or other countries where the MNEs have subsidiaries. Also, this type of FDI may be undertaken with the aim of gaining access to a regional market that was previously difficult to access as a result of trade barriers. Finally, *government-initiated FDI* pertains to national investments specifically targeted in a bid to achieve some macroeconomic goals of particular national interest to the host country. The government can actively woo different kinds of FDI depending on whether it wants to improve the balance of payment deficit, decrease unemployment or improve the general productivity of the economy.

Another way of categorising FDI is by motive, as there are different reasons why capital moves from one location to another. Given that the bulk of investments in foreign countries are made by MNEs, many studies have sought to identify the reasons why foreign firms invest in a host country. According to Dunning (1979), a firm invests abroad for resource-seeking, market-seeking, efficiency-seeking motives, to which strategic-asset-seeking FDI has also been recently added.

Starting with resource-seeking FDI, one of the considerations for setting up a production plant or facility abroad is the availability and proximity to resource-inputs. Increasing global integration of economies worldwide has made it possible for firms to

go beyond national borders in the search for a site nearest to its source of inputs. As a result, abundance and the relatively low cost of certain natural resources in a particular location serve as attractive features for foreign investors. Hence, resource-seeking FDI is investments made with the aim of exploiting the availability and relatively low cost of the natural resources in the host economy. In developing countries, the relative abundance of natural resources has been one of the major determinants of inward investments (Nunnenkamp, 2002), and in Nigeria, for instance, the bulk of inward foreign investment goes to the petroleum sector given the abundance of oil in Nigeria.

Market-seeking FDI refers to investments that aim to access new markets outside the geographical area of the home firm. The motive behind market-seeking FDI is to exploit the host country characteristics such as the size of the market, the structure of the market, and changing consumer preferences in line with the firm's expansion plans.

Efficiency-seeking FDI is mainly undertaken to exploit some features of the host country which allow for a lower cost of production. Characteristics of a location such as lower labour costs, a skilled workforce, quality infrastructure, economic and industrial clusters and a favourable business climate often serve to attract foreign investors. An example of this kind of FDI is the influx of FDI in labour-intensive sectors in China, in order to benefit from the low cost of labour.

Although Dunning's typology remains a powerful tool for analysing contemporary business strategies relating to FDI, the strategic-asset-seeking motive is yet another reason why MNEs go abroad. Strategic-asset-seeking FDI refers to investments that seek to acquire foreign firms and assets that align with the strategic plans of the foreign firm. Such assets may include brand name, equity shares in a particular firm or a total buy out. As noted by Meyer (2015), this type of FDI is undertaken explicitly with the aim of using assets acquired abroad to enhance the operations of the investor in other markets, including the investor's home market. Meyer (2015, p. 57) argues that "*This contribution to capability-building processes of the MNE, indeed, constitutes an important and distinct type of investment motive.*"

3.4   General theories of FDI

Although the focus of this PhD study lies in investigating empirically the role of inward FDI in influencing export performance (for the case of Nigeria), it appears opportune before honing in on the theoretical hypotheses put forward regarding the FDI-export nexus to examine some of the general theories of FDI.

As stated earlier, the bulk of FDI is undertaken by MNEs, and as a result, the study of FDI has been synonymous with the study of MNEs' activities. The implication of this is that the theories of MNEs are also used to explain FDI flows. For the purpose of this review, FDI theories will be classified into two categories: first, macro-level theories (that is, theories on the host country characteristics) and second, micro-level theories (theories on foreign investors/firms' characteristics and motivations).

3.4.1   Macro-level theories of FDI

One of the earliest attempts to explain the international movement of factors of production or commodities can be traced to the neoclassical theory of trade. The Ricardian theory of comparative advantage explained the trade of goods and services by simplifying production activities in a two-country, two-commodity model. Assuming perfect markets and full mobility of factors of production, the theory postulates that goods are best produced in the locations where there is a comparative cost advantage in production (Krugman et al., 2015). Acknowledging the variance in the resource endowment among different countries, Ricardo argued that it is best that countries (and indeed, firms) produce only goods they have a comparative cost advantage in making, while they trade other goods.

The Heckscher-Ohlin trade theory (Heckscher, 1919; and Ohlin, 1933) is based on similar assumptions; a 2x2x2 model with two countries, two factors of production (capital and labour) and two commodities with the underlying assumption of perfect

markets for goods and factors of production, zero transport costs and identical constant returns to scale production functions. The theory further assumes that the difference in the factor intensities of commodities and the difference in the relative factor endowment will lead to international factor price differentials. As a result, it suggests that commodities are best produced in the locations where there is an abundance of factor inputs. Hence, a relatively labour abundant country should produce labour-intensive commodities and import capital-intensive commodities, while a capital abundant country should focus on producing capital-intensive goods and import labour-intensive ones (Subasat, 2003). When applied to explain the activities of MNCs, it follows, according to the theory, that firms locate their facilities and plants in countries where there is a relative abundance of its factor input, and a possibility for higher returns on investment. And where trade does not exist, or is fraught with barriers, then firms are better off moving their production facilities to foreign countries with relative factor-input abundance.

In spite of the insight the neoclassical narrative provides in explaining the geography of FDI, its postulations are not without limitations. For example, while foreign investors may be motivated to invest in order to exploit the cost advantage of certain locations (an example would be firms attracted to India because of its low labour costs), there are several other motives that account for the direction of FDI flows which are not accounted by these theories. For example, the market-seeking motive and the efficiency-seeking motive are not accounted for by these theories. Furthermore, the assumption of 'perfect markets or competition' is unrealistic in today's world (which is increasingly characterised by oligopolistic industries and quasi-monopoly power).

Another theoretical proposition that further explains the movement of capital across national borders (although not specifically direct investment) is the ***Differential Rates of Return Hypothesis.*** This hypothesis is premised on the assumption of a perfect market, with no transaction costs and the absence of risk. According to this hypothesis, capital moves across national borders in response to differences in returns on capital investments. Hence, capital flows from countries with low rates of return to countries with higher rates of returns (Moosa, 2002). Accordingly, the rate of return on

investment becomes the major determinant of cross-border capital movement (Dunning and Rugman, 1985).

While the differential rates of return hypothesis may explain to some extent the movement of certain types of FDI, this hypothesis too suffers from some inherent limitations. First, empirical studies did not find much evidence supporting it (Agarwal, 1980). This is perhaps not unrelated to some of its assumptions such as perfect market conditions and risk neutrality which are not plausible. The perfect market assumption has also been severely criticised. In fact, Kindleberger (1969) and Hymer (1976) argue that it is the imperfections of the market that necessitate the movement of FDI, in contrast to the suggestion of neoclassical theory. Second, the hypothesis postulates that capital moves from countries of low returns on investment and move to countries with higher returns on investment, and not *vice versa*. However, this does not take into account the fact that capital may move from countries with higher rates of return on investment to countries with a lower rate of returns to investment for other reasons. As Moosa (2002) argues, firms may indulge in FDI for reasons other than 'profit maximisation', particularly in the short run. For example, a firm may choose to go to a location where it hopes to achieve market penetration and sales growth, even if in the short run the return on investment is much lower than in other locations. Additionally, risk considerations rank high in the determinants of capital movements, as FDI may move to lower rate returns, yet lower risk locations (Moosa, 2002).

Portfolio diversification hypothesis

Evidently, the assumption of risk neutrality is another major weakness of the differential rate of return hypothesis. According to the portfolio diversification hypothesis, the decision to invest does not rest only on the rate of return, but also on the risk involved. Applying the concept of Tobin (1958) and Markowitz's (1959) portfolio diversification theory to FDI, this hypothesis predicts that firms may invest in different foreign locations in order to reduce their risk through geographical diversification.

Since the risk of investing in different international markets varies from country to country, this approach postulates that the diversification of the total investment stock will reduce the overall risk of the investing firm (De Vita and Lawler, 2004).

The recognition of the role of risk as an important element in FDI decisions makes portfolio diversification theory certainly superior to the differential rate of return hypothesis. However, the former also presents limitations, some similar to that of the differential rate of return hypothesis. In the first instance, there is weak empirical evidence that supports the hypothesis. This weak empirical backing may stem from the failure of this hypothesis to account for the geographical clustering of FDI in markets with highly correlated expected returns (Buckley, 1988). Another limitation of this hypothesis is that it does not differentiate between FDI and portfolio investment, and fails to explain why a firm may choose direct investment over portfolio investment (Moosa, 2002)

Market-size hypothesis

The market size hypothesis predicts that the volume of foreign investment in a country is determined by the host country's features such as the size of its market, the growth potential of the market and the market structure. There is evidence in empirical studies that host country features such as market size, market growth and market structure are, in fact, the main determinants of inward investment in the developed economies (see, for example, Forsyth and Docherty, 1972; and Wilkins, 1970). Even for developing nations, market size is one of the major determinants of FDI inflows. Not all FDI types, however, are attracted by the size or the structure of the host country market. Vertical FDI, for example, is not determined by factors such as market size (Sethi et al., 2002).

While host country market size and structure are important determinants of FDI inflows, most investors consider the quality and strength of the institutions (Busse and Hefeker, 2007). The political stability of the host country, the level of law enforcement, the ease of doing business, the level of uncertainty in the business climate and government policies, can also play very important roles in the investment decisions of

foreign investors. Foreign investors are more likely to locate their investments in countries that are more stable, have strong institutions and less uncertainty in policies, as they have higher chances of recouping returns on their investments under such conditions. Nevertheless, the absence of strong institutions may not always limit the flows of FDI in a host country. This is true, especially for developing countries, like Nigeria, which despite its weak institutions and difficult business climate, manages to remain one of the major recipients of FDI in Africa. This trend may be attributable to the fact that the bulk of FDI in developing countries is in the primary sector (resource-seeking FDI), and resource seeking FDI is less sensitive to institutional quality than other types of FDI (Marr, 1997). Hence, the mere abundance of resources may be enough to attract investments, even in a context characterised by low institutional quality and small markets.

3.4.2   Micro-level theories of FDI

Theories hereby classified as micro-level theories of FDI consider the determinants of FDI by focusing on the foreign investors/firms' characteristics and motivations. They move the discourse of FDI away from the initial theory of capital movement to the discussion of FDI from the perspective of industrial organisation.

Hymer (1976) was among the first to take this approach. In his 1960 dissertation (published posthumously in 1976), Hymer expressed his dissatisfaction with the earlier theories of capital movement as a means of explaining FDI. He disagreed with these earlier theories on three points (Moosa, 2002). First, he considered that the risk neutrality, absence of transaction and informational cost, and perfect market assumptions of the neoclassical theories are unrealistic and asserted that once these factors are fully accounted for, then the earlier theories of capital movement become inadequate. Second, given that FDI was not just financial capital but included a composite bundle of technology, management skills, and entrepreneurship, the neoclassical theories' focus on explaining only capital movement is limited in scope and hence insufficient to explain FDI. He argued that firms invest not only to earn a profit, but also to earn economic rent on the other resources that they bring to the host

country. Thirdly, these theories seem to explain only portfolio investment, which is an indirect investment and involves change of ownership or control from the investor to the local firm, but do not seem to account for direct investments where the investor retains some level of ownership or control over the enterprise.

To explain why firms invest abroad, Hymer (1976) argued that firms can only invest abroad if they possess some 'monopolistic' or 'oligopolistic' proprietary advantage that can allow them to compete with the local firms that have an inevitable informational advantage over the foreign firms. It is reasonable to expect that local firms would have some informational advantage over foreign firms, as they are closer to the consumers, attuned to their culture and assumed to understand their behaviour better than foreign firms. According to Kindleberger (1969), the proprietary advantage of the foreign firms must have three qualities: it must be firm-specific; it must be transferable to foreign subsidiaries; and must be large enough to compensate for and exceed the informational advantage of local firms. Hence, before a firm can invest and earn profitably abroad, then these proprietary advantages, which are exclusive to it at least in the short-run, must provide it with an advantage that should outweigh the informational advantage of the local firms.

Table 3.2:   Advantages giving rise to FDI

Source: Moosa (2002, p. 31)

Oligopolistic reaction hypothesis

Knickerbocker (1973) theorised that firms invest abroad as a strategic response to the expansion of rival firms into the foreign market. In his empirical work on 187 American MNEs, Knickerbocker (1973) found that subsidiaries of the MNEs tend to cluster together with a short time period. Hence, he concludes that in an oligopolistic market, firms tend to follow leading rival firms into foreign markets in order to counter any benefits that may accrue to those rival firms that first entered the foreign market.

Despite the explanatory power of this hypothesis, it does not sufficiently account for the pattern of MNEs' investment abroad, and as Agarwal (1980) points out, the

oligopolistic reaction hypothesis does not explain why a firm invests abroad in the first place.

Product Life Cycle Hypothesis

Vernon (1966) developed the product lifecycle hypothesis in an attempt to explain the movement of US MNEs' FDI post-World War II. His work is hinged upon the empirical assessment of the US industries during the 1960s. Vernon hypothesised that international production goes through four stages. In the first stage, the characteristics of the home country such as institutions, factor endowments and markets and the competitive advantage of US firms allow them to innovate and develop new products. These products are first targeted towards domestic consumption in the home country. As a result of the improved process and production advantages, the second stage entails exporting these products to other (developed) countries with similar taste and structure as the home country. In the third stage, as the product becomes more standardised and mature and demand becomes more price elastic, competitors and imitators enter the market and challenge the home country firms to improve their cost efficiency. This pressure to minimise production costs, consequently, forces the innovating firm to shift their production to host countries (usually developing) with relative factor abundance. Hence, for the host country, FDI replaces import from the home country, and even boosts its exports to the home country (Dunning and Lundan, 2008).

Some empirical studies conducted in the early 1970s provided support to this hypothesis (see, for example, Horst 1972). However, subsequent patterns of US FDI flows, and indeed the experience of other developed countries' FDI flows revealed the limitations of the hypothesis (De Vita and Lawler, 2004). One of the limitations of this hypothesis is that it does not account for the fact that the bulk of developed countries' FDI flows to developed countries as against its prediction of FDI eventually favouring factor-abundant developing countries. Also, with the increasing ubiquity of offshoring of production process to developing countries, new products are now developed and promoted simultaneously in both developed and developing countries (Moosa, 2002). Even Vernon (1979) acknowledged that the convergence of both technological and

income level between the US and other industrial countries reduces the applicability of the hypothesis in explaining the geography of FDI flows.

Uppsala internationalisation model

Unlike Vernon's product lifecycle hypothesis which was based on an empirical assessment of the internationalisation pattern of US firms, the Uppsala internationalisation model was developed based on the empirical assessment of Swedish firms by researchers at Uppsala University.

The basic assumption of the Uppsala internationalisation model is that knowledge gap is the major obstacle to firms' internationalisation decision. And this lack of knowledge of the international market can be reduced through a gradual learning about the foreign markets while entering them in a series of incremental steps. Johanson and Wiedersheim-Paul (1975) identified a four-stage sequence of incremental foreign market entry. The firms begin, first, by establishing in the domestic market in home country, and then move on to serve foreign markets through exports, usually through independent agents. After some time, sales subsidiaries are set up in the host country markets, and in the final stage, production or manufacturing facilities may eventually be set up. According to Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977), these four stages represent an incremental level of resource commitment to foreign markets, and it is the experiential learning and knowledge that firms gain from one stage that allows them to proceed further.

Another observation made by the research at Uppsala is that the knowledge gap and uncertainty about foreign market seems to the larger or smaller depending on the 'psychic distance'. The psychic distance, as used in this context, refers to those factors that affect the flow of information between the home country firms and foreign markets. Some examples of these factors include culture, language, geography, business practices and economic development. Empirical research by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977) found that Swedish firms'

expansion into foreign markets progresses from countries with lower psychic distance to countries with higher levels of psychic distance.

A possible criticism of the Uppsala model (as with any stages model) may be that it appears rigid and deterministic, although Johanson and Wiedersheim-Paul (1975) pointed out this limitation and acknowledged that firms may not always follow these steps and may jump some of the steps. Another criticism of this model is that its validity may not apply for firms outside the Nordic countries (as indeed, Millington and Bayliss (1990) found for UK firms' expansion in the European Community). The model also does not account for firms that are 'born global', that is, firms that start overseas expansion almost from their inception (De Vita and Lawler, 2004). Also, the explanation of the Uppsala model seems to be confined to horizontal FDI and does not account for vertical FDI (Dunning and Lundan, 2008)

Internalisation hypothesis

Following the earlier assumptions of an imperfect market, the internalisation hypothesis emerged as an explanation of FDI decisions. This hypothesis was postulated by Buckley and Casson (1976) when they extended the initial thesis put forward by Coase (1937) by arguing that direct investments are made in order to replace the cost of market transactions. According to this hypothesis, firms are more likely to invest directly in a foreign market if they perceive that the benefits would exceed the cost of market imperfections such as time lags, buyer uncertainty and transaction costs associated with other forms of entry into the host country (exporting, for example). Buckley and Casson (1976) suggest that firms engage in FDI in order to bypass these market imperfections and internalise the transactions and benefit within the firm. Thus, this theory is broadly concerned with identifying situations in which firms are more likely to internalise the market for intermediate products and when they are more likely to resort either to exporting or licensing.

Since the formulation of this hypothesis, it has been considered to be a general theory of FDI, although Buckley (1990) suggests that it is best referred to as a paradigm rather

than a theory. Rugman (1980) remarked, however, that the encompassing nature of the hypothesis makes it difficult for empirical testing. A point reiterated by Buckley and Casson (1985, p. 192) when they stated that, "*the very general (at worst tautological) concept of internalisation, requires a precisely defined set of restrictions to generate testable hypotheses*".

The Eclectic Paradigm of International Production

Given the complex nature of FDI, there has not been any general theory of FDI, that is, a single theory able to provide an explanation for all types and motives of FDI. In the search for a general theory or an overarching paradigm at least, Dunning (1979) developed the eclectic (also known as the 'OLI') paradigm of international production to offer a general framework for explaining why firms engage in FDI and the pattern of FDI flows. Unlike other theories, the eclectic paradigm does not purport to be a theory, rather it makes the case that the earlier theories complement rather than substitute each other. As a result, it attempts to encompass various explanations provided by earlier theories of international trade and the microeconomic theory of the firm behaviour.

According to the OLI paradigm, before a firm invests abroad, three conditions have to be satisfied. First, it must possess some **ownership (O) advantage**. This advantage must be some form of intangible assets which are, at least for some time, exclusive to the firm, and cannot be easily copied by the local firms in the host country. Further, these advantages must be large enough to give the foreign firm some comparative advantage that will enable it to compete with the local firms who already have an informational advantage in the host country market (Dunning and Lundan, 2008). This element of the 'OLI' triad explains the 'why' of FDI.

The second condition that needs to be fulfilled as well, is that the intending host country must have some immobile and natural resources which can serve as factor inputs for the firm. This kind of advantage is referred to as the ***locational (L) advantage.*** Locational advantages, thus, include benefits such as cheap raw materials or nearness to source of inputs, which accrue to a firm for locating its production facility in a

particular location. Sources of locational advantage include relatively abundant low cost of labour, low transportation costs, highly skilled manpower, cheaper natural resources and so on. If there is no locational advantage, or worse, if there is a locational disadvantage in the host country, then it is unlikely that firms will engage in FDI in that country (Moosa, 2002). This element of the OLI paradigm, therefore, explains the 'where' of FDI.

The last condition is the ***internalisation (I) advantage***. This third element of Dunning's paradigm is regarded by many as the most important. In the words of Ethier (1986, p. 803), "*Internalization appears to be emerging as the Caesar of the OLI triumvirate*". This helps to explain why some activities are carried out within firms and others through arms-length transactions. If it is more profitable for the firm with ownership and location advantages to produce directly rather than sell, lease or license their ownership advantage, then the firm is more likely to internalise these advantages by investing directly in the host country. Hence, internalisation advantage denotes the benefits that accrues to firms for setting up business directly in the host country (Dunning, 2001). This element of the OLI triad explains the 'how' of FDI.

The advantage of the eclectic paradigm lies in its integration of the macro and micro perspective of FDI in explaining why firms invest abroad, where they invest and the reason they choose FDI instead of other forms of foreign capital movement. The eclectic paradigm offers a holistic framework that is able to encompass theories of international trade and the microeconomic theory of the firm behaviour. As Dunning (1988, p. 1) aptly puts it, the eclectic paradigm "*was meant to convey the idea that a full explanation of the transnational activities of enterprises needs to draw upon several strands of economic theory; and that foreign direct investment is just one of a number of possible channels of international economic involvement, each of which is determined by a number of common factors*". Another merit of the eclectic paradigm is that, despite having so much in common with other previous theories, it nonetheless introduces new considerations such as how different host countries, industry and firm characteristics may affect the OLI advantages of FDI (Jones and Wren, 2006).

Unsurprisingly, the OLI paradigm is not devoid of weaknesses. Due to its generality, the eclectic paradigm has been criticised for its lack of operationality (Ietto-Gillies, 1992). Conceding this point, Dunning (2001) admits that the eclectic paradigm is best viewed as a general analytical framework, rather than a general theory of FDI, as no single theory is able to sufficiently capture all forms of FDI.

3.5 FDI and Export Performance

In the previous section, a brief critical synthesis of the theories underpinning FDI was offered. This section provides a review of theories that underpin the existence of the relationship between FDI and export performance, the nexus of central interest in this PhD study.

The relationship between FDI and international trade is ambiguous in economic theory. Given that FDI and international trade are among the several ways through which a foreign enterprise can enter a host country, there is a possibility then that the relationship between FDI and export could either be complementary or substitutive (Markusen, 1984; Helpman, 1984).

Early theoretical work on the substitutive relationship between FDI and trade was developed by Mundell (1957) in his seminal work which is based on the neoclassical Hecksher-Ohlin 2x2x2 model of two countries, two commodities and two factors. In his analysis, Mundell relaxes the assumption of immobility of factors of production and argues that factor movement can substitute for trade. Hence, he hypothesises that trade barriers will encourage cross-border factor movement, and trade, on the order hand, would boom in the presence of restrictions on factor movement. This implies that FDI and export can substitute each other depending on the degree of openness of the host and home country. Later theories such as the internalisation theory further emphasise the substitutive relationship between FDI and trade (Dunning and Lundan, 2008). In deciding to enter a foreign market, firms will choose to undertake FDI rather than export

if the benefits that accrue to it by internalising its ownership advantages exceed the cost of market imperfections.

Other theoretical studies (e.g., Markusen, 1984; and Helpman, 1984) point out that the complementary or substitutive relationship between FDI and trade depends on the type of FDI. Markusen (1984) points out that firms undertake horizontally integrated FDI in order to avoid trade barriers or take advantage of locational advantages of the host country market, hence for the home country, this type of outward FDI becomes a substitute for trade. Vertically integrated FDI, on the other hand, is likely to have a complementary relationship with trade, as this type of FDI is usually undertaken to take advantage of lower factor prices and export these factors to the home country or other subsidiaries of the MNEs in the value chain (Helpman, 1984). Expectedly, this kind of setup increases the exports of factors from the host country as inward FDI increases.

So far, the theoretical treatment of FDI and trade has often included the examination of outward FDI and the import component of trade. However, going forward in this review –and given the central purpose of this review - the focus will be narrowed to aspects germane only to inward FDI and host country exports of the FDI-trade relationship.

The link between inward FDI and the host country exports emanates from the fact that FDI is a special type of cross-border capital. Typically possessing superior (or at least different) management and marketing skills, technology and other bundle of assets that increase their productivity, foreign firms and their subsidiaries are capable of have a significant impact on the exports of the host country.

Generally, the impact of FDI on the host economy can be categorised as direct and indirect effects. For the purpose of this review, we define the direct effects as the changes that occur in the economy as a result of the direct activities of multinational firms, whereas indirect effects are closely linked to the externalities of the activities of the MNEs. These externalities are usually referred to as 'spillovers', and refer to certain

advantages that accrue to domestic firms as a result of the operations of the MNEs. These spillovers from MNEs can be transmitted through imitation, competition effects, learning to export and skills transfer through mobility of labour. Most of the literature on MNEs' spillovers concentrates mainly on three broad categories: productivity spillovers, labour market spillovers, and export spillovers. These spillovers can sometimes overlap with each other. However, in the course of this review chapter, the focus is mainly on export spillovers.

3.5.1 Direct Effects

Theoretically, FDI can affect the export performance of a country either directly or indirectly. FDI can enhance the export performance of the host country directly through the export activities of the subsidiaries of the foreign enterprise. Apart from dominating the global flow of FDI, MNEs also dominate the global trade, as it is estimated that about two-thirds of the world's trade is carried out by MNEs (UNCTAD, 2007). This statistic suggests that MNEs are heavily involved in the exports and imports of any host country, and as a result, an increase in export-oriented FDI will boost the export performance of the host country.

According to the OLI theory, subsidiaries of MNEs are assumed to be more productive than domestic firms, as they are expected to possess certain firm-specific intangible assets which allow them to overcome the challenges and cost of investing in a foreign market. This advantage in productivity has often translated to an advantage in exporting too as numerous empirical studies provide evidence that foreign firms are more productive than domestic firms and also tend to export more (see, for example, Lall and Mohammad, 1983). Subsequently, an increase in FDI implies more MNE affiliates, who are more likely to export, which in turn, increases the export performance of the host country.

Moreover, some FDI is purely export-oriented, adopting the host country as a platform for exports. A unique kind of export-oriented FDI is referred to as export-platform FDI.

Export-platform FDI is usually embarked upon in order to gain access to the regional protected market (a single market such as the EU) thus overcoming the protected market's external tariff or to supply intermediate goods to the parent firm in the home country. Subsequently, MNEs can increase the export performance of the host economy by exploiting the location advantages such as relatively abundant and lower cost of human and natural resources, which would enable it to lower its production costs and, in turn, improve the export competitiveness of their product in the global market (Majeed and Ahmad, 2007).

Numerous empirical studies show that the effect of FDI on the growth of the host economy is usually positive, with FDI contributing positively to the production level of a country (De Mello, 1999). Developing countries especially have a low level of output resulting mostly due to a paucity of funds and a low level of technology. Thus, FDI may be a good source to improve the capital stock of the country as well as a channel of technology transfer. Hence, the enhancement of both the capital stock and technology level will lead to increased productivity and production level, which in turn makes it possible for the host country to generate surplus output which enables it to increase the foray into international markets via exports (Anwar and Nguyen, 2011b)

3.5.2   Indirect (spillover) Effects

There is evidence in the theoretical and empirical literature that suggests that MNEs are typically more productive than domestic firms and thus have a higher probability of exporting (see, for example, Lall and Mohammad, 1983). However, MNEs do not only affect the export performance of the host country directly through their export activities, but also in the way they influence domestic firms towards exporting.

As mentioned earlier, unlike other forms of cross-border capital movement, FDI brings with it, in addition to capital, a bundle of other production factors such as technology, efficient management techniques, international supply chain networks and other firm-specific assets. These additional benefits from FDI result from the fact that before an

MNE establishes a subsidiary overseas, it usually possesses certain firm-specific assets that allow it to overcome the disadvantages it faces in competing with local firms who are more familiar with the local market. The proprietary assets of MNEs, by their very nature, have the character of public goods - they can be transferred from one of the MNEs' subsidiaries to another without losing effectiveness. However, because of the public-good nature of these assets, it is usually difficult for MNEs to exclusively internalise them within their subsidiaries, as they may also, indirectly and unwittingly, be transferred to (or copied by) other firms in the host country in the course of their interactions. This indirect transfer of MNEs' proprietary assets to domestic firms is called spillovers or externality effect.

It is worth pointing out that the term spillover is used loosely in this study to refer to the positive contribution or externality to domestic firms resulting from the entry and activities of foreign firms. The term spillover indicates that some form of MNE's proprietary technology, management or marketing knowledge spills over, or is transferred either by design or accident, to domestic firms which boosts the productivity and/or export performance of domestic firms. However, as we shall see in the next section, not all improvement in the productivity or exporting activity of domestic firms attributable to MNEs entry results from the leakage or imitation of the MNEs' proprietary assets. For instance, a channel for intra-industry externality is through competition—where the entry of MNE increases the competition in the industry and may force domestic firms to adopt newer and more efficient technology in order to be able to compete favourably and not lose their share of the consumer market. In this case, the domestic firms may not necessarily benefit directly from the technology or knowledge of the MNEs but are forced by competition to improve or adopt better production methods (which again, may not be same with that of the MNEs'). Also, another channel through which domestic firms can benefit from MNEs is through backward linkages. Domestic firms in the upstream sectors may benefit either from the direct coaching and guidance of MNEs in downstream sectors in order to get them to supply to them. However, there is evidence in the literature that, despite this linkage, MNE may provide no specification or guidance that may boost the performance of the upstream domestic sectors (Moran, 2011). In fact, it is found that MNEs in some host countries may decide to 'cherry-pick', that is, choose only the most productive domestic

firms as their suppliers (see, Javorcik and Spatareanu, 2005, for a more detailed analysis of MNE cherry-picking behaviour). In this case, there may be no leakage of technology or direct assistance, however, the domestic productivity or export ability may increase nevertheless. This improvement may be due to the fact that increased orders may allow domestic firms to benefit from economies of scale.

Theoretically, spillovers can be transferred either between firms within the same industry (intra-industry or horizontal spillovers) or between firms operating in different industries or sectors (inter-industry or vertical spillovers). The several channels through which domestic firms benefit from spillovers is discussed extensively in the next section.

Channels of Horizontal Spillover

One of the ways spillover from FDI can be transferred to domestic firms is through ***imitation.*** It is well documented in the literature that more productive firms tend to export more (De Loecker, 2007). And, typically, MNEs are more technologically advanced and productive than domestic firms, and as a result, tend to export more than domestic firms. But, although MNEs have the incentive to protect their technology or management techniques from leaking, domestic firms may learn from watching the MNEs as they try to emulate their success. The upgrade of technology or production process through this channel, of course, depends on the absorptive capacity of the domestic firms and their employees.

Another channel of export spillover is through ***human capital acquisition or labour mobility.*** When MNEs invest in a host country, they tend to employ workers from the labour market. These workers are trained and exposed to the technology and operational techniques of the MNEs. Given that labour is mobile, these workers could decide to either leave the MNEs to go to work for a domestic firm or to start up a new firm. When they leave the MNEs, these domestic workers may transfer such knowledge and technology to domestic firms, thus raising the productivity of the domestic firms and, consequently, their ability to export. Spillover through the mobility of human capital is

considered to be one of the most important channels of FDI horizontal spillover (Fosfuri et al., 2001). This is partly because MNEs tend to train their workers more than their domestic competitors (Tan and Lopez-Acevedo, 2003). Hence, when these employees leave the MNEs for another domestic firm or establish their own enterprise, they are likely to bring with them the skills and operational knowledge they gained from the MNEs. Evidence from the literature attests to the efficacy of this channel. For example, it was found that many senior managers in top industrial firms in Latin American and Southeast Asia were incubated by MNEs (Katz, 1987). The possibility of technology through this channel may depend on how transferable the knowledge or skills the employee gained from the MNEs are as well as the absorptive capacity of the domestic firm.

When MNEs invest in a foreign market that has other local firms, then the MNEs' subsidiaries compete with local firms. As a result of the *competition* with MNEs, domestic firms are under pressure to be more productive and efficient or risk going out of the market. This pressure may force domestic firms to adopt better production and management techniques which would, in turn, boost their production capacity as well as their capacity to export (Greenaway et al., 2004). However, it is important to note that while competition can improve the productivity and the export capacity of local firms, it is also possible that competing with MNEs may actually reduce the productivity of domestic firms (Aitken and Harrison, 1997). Given that MNEs typically have superior proprietary assets that allow them to compete favourably with domestic firms, they may also have a lower average cost (and hence lower prices for their products), and possibly superior quality, which could make them steal market share from existing local firms. As a result of the loss of market share, local firms may be forced to reduce production, which is likely to increase their average cost curve, and in turn, reduce their productivity and export capacity (Görg and Greenaway, 2001).

Information externality is another possible channel of export spillover. As noted by Greenaway et al. (2004), there are fixed /sunk costs involved in exporting. Some of these costs include investment in the establishment of supply chains and distribution networks, research on consumer preference, international regulatory frameworks, and

advertisement (Kneller and Pisu, 2007). MNEs, by the nature of their structure and experience in the international market, usually invest in these activities, and therefore their affiliates are armed with better information to exploit in their export activities. MNEs, therefore, are a natural source of information about the global market that domestic firms could exploit, thereby saving them some of the sunk cost of entering the international market, as well as allowing them to adjust their operations and products in order to meet the demand of the international market. Additionally, when MNEs lobby for a favourable treatment of their export to their home country they invariably ease the access and cost of entering the home country market for domestic producers (Vukšić, 2005).

Channels of Vertical Spillover

MNE firms do not only affect the performance of firms in the same industry but also firms in the upstream (suppliers) and downstream (buyers) industry. As pointed out by Blyde et al. (2005), for the MNE firms, it benefits them if their technology leaks to firms in the upstream and downstream sector, but they stand to lose when there is a technology spillover to their domestic competitors within the same industry. MNEs have an incentive to improve the performance of their suppliers and the buyers of their intermediate goods. If the domestic suppliers of the MNEs become more efficient producers, it saves the MNEs the cost and time they would have spent importing their inputs. On the other hand, if the domestic firms that patronise the intermediate products of the MNE firms become more productive, it expands the market share and base of the MNEs. Rodriquez-Clare (1996) used a theoretical model to demonstrate that linkages between MNEs and domestic firms may increase the productivity of the domestic firms.

One of the channels through which domestic firms can benefit from spillover from FDI is through collaboration, direct coaching or technical assistance. An example of this is Rasiah's (1994) finding that MNEs in the telecommunications and semiconductor industry in Malaysia assigned technicians to help their domestic suppliers to set up and also to help oversee their operations. This led to the development of a more productive vertical supplier group for the MNEs. This is similar to the finding of Lim and Fong (1982). They found that US MNEs in the semiconductor industry in Singapore provided

detailed specifications and technical help to domestic suppliers. As a result of this assistance, the domestic firms became very productive and supplied not only the subsidiary of the MNE in the host country, but also export to other international subsidiaries of the MNE and to other unaffiliated firms globally. The assistance to domestic suppliers does not end with technical support, but also, by increasing the sales domestic firms make, and in some cases making advance payments, they allow the domestic firms to expand in scope and capability. As Nuñez (1990) found in Mexico, about 115 domestic firms surpassed the sales mark of $1 million as global MNEs began to site their production sites in Mexico.

3.5.3   Conditions favouring FDI positive effect on exports

The empirical evidence of the direct and indirect effect of FDI on host country is not conclusive. As Moran (2005) pointed out, the question is not whether FDI has a positive effect on the host country, the question is when. Positive effects or spillovers are not the automatic consequences of the inflow of foreign firms. The impact that MNEs may have on the host country depends on a number of host country characteristics as well as investing firms' characteristics and objectives.

One of the host country characteristics that are critical in determining the type of impact that FDI will have on the host country is the level of human capital stock in the host country. Empirical studies (for example, Borensztein et al., 1998) find that FDI promotes growth only in countries that have reached a minimum threshold stock of human capital. This stock of human capital has to translate into workers skills because for domestic firms to benefit from FDI spillover, the labour force of the host country has to be sufficiently educated to absorb or take advantage of the technologies and intangible assets from MNEs.

The type of trade policies pursued by the host country also matter for FDI's effects on exports. The degree to which a host country is open to trading with the global market will determine the type of FDI it will attract, the volume of exports that MNEs already

present will export and, invariably, the relationship between foreign firms and domestic firms. For example, Lall and Mohammad (1983) and Sharma (2003) find that FDI had only a marginal effect on national export. The finding, they explained, results from the fact that India, for an extended period of time, pursued inward-oriented policies, thereby limiting exports on the one hand, and on the other, incentivising the inflow of mostly market-seeking FDI. This finding is consistent with the results of Balasubramanyam et al. (1996) who report that FDI is likely to have a stronger effect in countries with an outwardly oriented trade policy than in protectionist regimes. A recent result by Gnangnon, S. K. (2018) also suggest that protectionist regimes hurt a country's export performance.

Another host country characteristic that affects the potential effect of FDI on the host country is the level of technological sophistication of domestic firms. The ability to imitate MNEs depends on the complexity of the production process as well as the technological gap between MNEs and domestic firms (Glass and Saggi, 2002; Görg and Greenaway, 2001). Complex production processes or management techniques are difficult to imitate, therefore the wider the technological gap between the MNEs and the average level of technology in the industry, the lower the possibility of spillover through imitation (Glass and Saggi, 2002). Furthermore, a wide technological gap between MNEs and the domestic firms may reduce the linkages between them. Minimum linkages between MNEs and domestic firms decrease the possibility that the domestic firms will benefit from FDI spillover. The evidence in the literature suggests that vertical spillovers are more likely to occur than horizontal spillovers because MNEs have the incentive to prevent the leakage of technologies but may actively assist their domestic suppliers in upgrading their technologies (Javorcik, 2008)

The level of financial market development in a host country is a determinant of its entrepreneurial activity. In addition to the presence of skilled labour, high-level capital goods are required for domestic firms to take advantage of new technologies or production processes. The presence of developed financial institutions helps domestic entrepreneurs to access credit facilities which allows them to purchase high-tech machines, hire better-skilled employees and adopt new technologies. This reduces the

technological gap between domestic firms and foreign firms and makes it possible for domestic firms to be capable of absorbing new technologies introduced by the foreign firms. The empirical literature suggests that countries with more developed financial systems are more likely to benefit from FDI (Alfaro et al., 2010)

The type of impact that FDI will have depends on the structure and type of sector they are investing in. Domestic firms may improve their productivity and their exporting capacity as a result of their competition with foreign firms. However, this source of FDI spillover is possible if investing foreign firms are not monopolies. If the technological gap between MNEs and domestic firms in a sector is wide, the MNEs may out-compete the domestic firms and drive them out of the market, instead of making them more productive or innovative. The sector that FDI invests in also determines their impact on the host country exports. Primary sector FDI tends to have minimal linkages with domestic firms, which limits their impact on domestic firms. Manufacturing sector FDI and service sector FDI, on the other hand, have more linkages with other players in the economy, thus have the possibility of transferring benefits to domestic firms.

Another crucial conditionality that determines the impact of FDI is the objectives and motivations of the investing firms. A survey of the literature on the determinants of FDI will show that foreign investors engage in FDI for various reasons, and increasingly, empirical evidence has surfaced to show that these different motivations for investing have different effects on the export performance of the host country (Franco, 2013).

According to Vukšić (2005), FDI that is predicated on taking advantage of the availability of natural resources or low-cost labour is more likely to directly promote exports. Vertical FDI that is resource seeking would be expected to increase the volume of the host country exports, as the subsidiaries of the MNEs are focused on exporting raw materials or intermediate products to their parent firm or their other subsidiaries.

The effect of horizontal FDI on the export performance can be ambiguous. Jensen (2002) points out that this type of FDI, especially 'market-seeking' FDI, may not have any direct impact on exports as it is targeted primarily at the host country market. However, Franco (2013) argues that market-seeking horizontal FDI has the potential to promote host country exports through export spillover to domestic firms. Franco (2013) points out that while market-seeking FDI may not contribute directly to exports, by virtue of its increased linkage with domestic firms, it may indirectly boost the exporting capacity of domestic firms through a boost in productivity. The spillover effect of market-seeking horizontal FDI is likely to be greater than vertical FDI because the former is more likely to foster backward and forward linkages with domestic firms, as well as boost local entrepreneurship and domestic rivalry (Dunning, 1994).

Table 3.3, from Jensen (2002), illustrates the varied export effects of different types of FDI.

Table 3.3: Expected effects of different types of FDI on export performance

	Motives		
	Market-seeking	Resource-seeking[1]	Strategic Asset-seeking[2]
Integration of value-added activities of parent/subsidiary	Horizontal	Vertical	Mixed
Exports	Ambiguous	Increasing	Ambiguous
1: *Resource-seeking FDI includes both natural resource and labour-seeking FDI*			
2: *Strategic Asset-seeking FDI typically involves the acquisition of local firms*			

Source: Adapted from Jensen (2002, p. 208)

3.6 Chapter summary

This chapter began by introducing the concept of FDI and examining the different definitions. By examining the different definitions of FDI, as well as its evolution over time, the author was able to critically analyse and unpack the key aspects that allow us to distinguish FDI from other forms of cross-border investment, including portfolio investment. This chapter further discussed, first, the several theories that explain the movement and motivation of FDI, and next, the theories that explain the link between FDI and exports. In surveying the general theories of FDI, the complex and multifaceted nature of FDI was laid bare and was seen to be too broad and complicated to be accounted for by any one theory. It is in lieu of this that scholars (for example, Dunning, 1979 and 1988) proposed an all-encompassing paradigm - an analytical framework - instead of a theory in understanding FDI (although it must be said that this approach too, is not devoid of weaknesses).

On the theories explaining the FDI-export relationship, there is no clear consensus on the direction of this relationship. This relationship could either be substitutive or complementary depending on the type of FDI that is involved. There is also an indication that the motivation of the FDI matters in determining its impact on exports, with export-oriented FDI likely to influence the export performance of the host country positively. Theoretically, FDI can enhance the export performance of the host country directly through the export activities of the subsidiaries of the foreign enterprise, or indirectly – through spillover effects on domestic firms – via channels including imitation, human capital acquisition, competition, and information externality. From the critical review of related hypotheses, it is clear that there exists a relationship between FDI and host country exports (based on both direct and indirect effects), however, the various hypotheses do not provide a unanimous and conclusive prediction as to how such effects may play out in any particular host country. Hence, it is clear to the author that the precise impact of FDI on export performance of any host country is a task best left to empirical work.

However, despite the insistence that the precise impact of FDI on the host country exports (in this case, Nigeria) is best determined by empirical assessment, the theories reviewed in this chapter will be extremely useful in the formulation of the specific hypotheses to be subjected to empirical scrutiny. Thus, in the next chapter, after an exhaustive critical review of the relevant empirical literature on the FDI-export nexus, the conceptual framework of this research informed by these theories and the empirical evidence will be set out.

CHAPTER FOUR

A CRITICAL REVIEW OF THE EMPIRICAL LITERATURE

4.1 Chapter overview

Having reviewed the theoretical predictions underpinning the relationship between inward FDI and host country export performance in Chapter 3, the present chapter provides a critical survey of the relevant empirical literature. To make the material tractable and to structure it coherently, the empirical literature on the relationship between FDI and exports has been grouped into studies looking at the contribution of FDI to host country exports at the aggregate, regional and sector level, studies focusing on the impact of FDI on export diversification and sophistication and those concentrating on FDI export spillovers.

4.2 Empirical studies on the direct effects of FDI

Studies reviewed in this section relate to papers examining the contribution of inward FDI and the activities of MNEs on the growth of exports at the national, regional and sector level.

Leichenko and Erickson (1997) assessed the impact of inward FDI on US manufacturing export performance at a regional level. To evaluate the effect of FDI on manufacturing exports across the US states, they incorporated a one-year lag effect in their model. The explanatory variables in their model are domestic investment for the previous year, previous level of exports, the exchange rate and the inflow of FDI in the previous year. The adoption of the lag effects is an attempt to account for the fact that the impact of FDI is not likely to be immediate and may take some time to manifest into higher exports. Employing OLS techniques and fixed effect estimators, the model was estimated using data on export shipments by the manufacturing sector (further disaggregated into five separate manufacturing industries) across the 48 contiguous

states for the period from 1980 to 1991. The results of the study show that the previous level of both the levels of exports and aggregate FDI inflows have a positive and significant impact on export performance. However, at a disaggregated level, the FDI impact was found to be positive and significant in all but two manufacturing industries. As their results show, the coefficients of the FDI effects in both food products and chemical industries are not statistically significant. This differential impact, the authors argue, is likely to be as a result of the difference in investment motives, as FDI in these two sectors may only be targeted at exploiting the local market.

The study by Leichenko and Erickson (1997) provides support for an earlier study by Lutz (1987) on the US economy. Lutz (1987) analysed the effect of foreign investment (both direct and portfolio) on the performance of nineteen US manufacturing industries in the global market from the year 1965 to 1982. The author acknowledged a shifting pattern in the export performance (measured as the percentage change in the global exports held) of US manufacturing firms and subsequently divided the analysis of export performance into two periods: Pre-1974 (that is, 1965-1974) and post-1974 (1974-1982). As the researcher noted, between 1965 and 1974, the export performance of seventeen (out of the nineteen) manufacturing industries declined significantly as they lost shares in the global market. However, post-1974 marked a general improvement, as eight of the losing sectors gained back shares of the global market, although the gains were not up to the pre-1974 levels. Conducting a series of further correlation analyses, the results show that both direct and portfolio investments exhibit a negative relationship with export performance in the pre-1974 period. In the post-1974 era, the association between portfolio investment and export performance, though positive, was statistically insignificant. FDI, on the other hand, was found to have a positive and significant relationship with export performance. Further regression analyses were conducted to examine whether the export performance in the post-1974 period was influenced by export performance in pre-1974 period as well as foreign investment in the pre-1974 period. The results show that with the exception of FDI, past level (that is, pre-1974) of export performance and portfolio investments did not have any significant relationship with current level of export performance. Thus, Lutz (1987) concludes that FDI plays a significant role in promoting current and future export performance of domestic firms.

In an attempt to capture both the direct and indirect effects of FDI, Kutan and Vukšić (2007) used a pooled dataset from 12 Central and Eastern European countries to estimate the role that FDI plays in the host country's export performance. The researchers identify the potential effect of FDI on export performance to be twofold, namely: supply-increasing effects, and FDI-specific effects. Supply increasing effects of FDI refer to the ability of FDI to directly increase output for export whereas FDI-specific effects are those effects that differentiate FDI from domestic investment or other foreign investment, which may include the transfer of proprietary assets such as technology or managerial techniques to the domestic firms. A Generalized Least Square (GLS) econometric technique was employed to estimate the presence of the aforementioned effects. The results of the study indicate that FDI increases the supply capacity, and indeed, export levels in all of the countries included in the sample. However, FDI-specific effects were found to be statistically significant only for the eight countries grouped under the New European Union (NEU) members, and statistically insignificant for the other four Southeast European countries. The authors argue that this difference in the effect of FDI across countries stems from the fact that that level of FDI inflows, as well as the initial level of productivity of domestic firms in the NEU countries, is higher than that of Southeast European Countries. Thus, they conclude that the extent of FDI-specific effects on exports depends on the gap between MNEs and domestic firms, and also the level of MNE presence in the host country

The FDI-trade relationship in emerging and developing economies has attracted considerable attention in the empirical literature. China, in particular, has attracted a significant share of these empirical studies. Zhang (2005) evaluated empirically the determinants of export performance in China using an industry level cross-sectional dataset for 1995. The regression analysis reveals that the impact of FDI is positive, and its coefficient shows that it has a larger effect on export performance than domestic investment. Also, the export-promoting effects of FDI were found to be larger in labour-intensive industries. This finding is supported by the work of Wang et al. (2007). Wang et al. (2007) find that FDI has a positive effect on Chinese exports. They find that the positive effect of FDI is higher for labour-intensive goods than for technology-intensive

goods. Additional analyses they conducted reveal that the origin of FDI does not affect the type and extent of impact the investment has on the economy.

At the regional level, Sun (2001) explored, using provincial-level panel data, the impact of FDI on the export performance of the three macro-regions of China from 1984 to 1997. The FDI-export relationship was examined using the Time Series and Cross-sectional (TSCS) model. The results reveal that, with the exclusion of 1997, which marked the beginning of the Asian financial crisis, the impact of FDI on exports was positive for all the three regions, although the effect was more pronounced in the Coastal and Central regions than in the Western region. The positive effects unveiled were supported by the findings of Zhang and Song (2002), who used panel data at the provincial level to examine whether FDI played any role in promoting exports in China for the period 1986-1997. Using Generalised Least Square (GLS), they estimate a dynamic model. The results indicate a positive relationship between FDI and manufacturing exports at the level of the province. Their results show that a 10 percent increase in the inflow of FDI in the previous year is associated with a 2.9 percent growth in export levels (in the next year).

In contrast to the studies by Zhang and Song (2000), Wang (2007) and Zhang (2005), Gu et al. (2008) and Liu and Shu (2003) examine the impact of FDI on exports in China at the sectoral level. Gu et al. (2008) and Liu and Shu (2003) argue that the use of aggregate data may lead to a bias as the results do not show whether the effects of FDI are equal among the different sectors. Consequently, Gu et al. (2008) focus on the industrial and food manufacturing sectors, which according to them constitute over two-thirds of Chinese exports and receive over 90 percent of Chinese inward FDI. They use disaggregated panel data of 14 industrial and food manufacturing sectors for the period 1995-2004. In estimating their model, they include other explanatory variables such as domestic investment, exchange rate, Chinese GDP, R&D and wages. Their results show that the effect of FDI is positive and significant in 13 out of the 14 sectors considered. As expected, the coefficient for GDP was positive and significant while that of wages was negative. However, it is surprising that the coefficients of other variables such as R&D and domestic investment were statistically insignificant and

negative, respectively. The researchers argue that the insignificance of the R&D variable may be because Chinese exports, during the period of the study, consisted more of low-tech commodities. Moreover, the negative relationship between domestic investment and exports may be an indication that domestic firms in the sectors included in the study tend to focus more on the domestic market (Gu et al., 2008).

Using a similar approach, Liu and Shu (2003) empirically investigate the impact of FDI on exports using cross-sectional data of Chinese manufacturing sectors, and their data included more sectors than Gu et al. (2008). Using similar explanatory variables as Gu et al. (2008), their results show that FDI has a positive and significant effect on exports across sectors. The coefficient of the labour cost is, as expected, negative; indicating that a decrease in wages in a sector leads to an increase in export performance in the sector. The effect of R&D was found to be statistically insignificant. Despite the interesting and similar results from Liu and Shu (2003) and Gu et al. (2008), it is important to highlight the differences between the two studies, as well as the reasons why their findings must be treated with caution. The results by Liu and Shu (2003) are limited by the fact that the study uses cross-sectional data that does not account for temporal variation of the variables. Gu et al. (2008) compensate for this by employing panel data covering a time span of 10 years. However, while Liu and Shu (2003) cover more sectors of the economy and include the real value of FDI as an explanatory variable in the model, Gu et al. (2008) examine only a limited number of sectors.

The growth of exports and inward investments in India has also led researchers to empirically examine their relationship. In their study, Lall and Mohammad (1983) investigate the impact of the foreign ownership on export performance in India. They find that despite the restrictive and inward-looking policy that India adopted during the period of their study, foreign ownership still contributed positively to the export performance of domestic firms. The results of their basic Ordinary Least Square (OLS) regressions show that foreign presence and level of foreign equity ownership are positively associated with the export level of domestic firms (although the statistical significance is low, possibly resulting from the macroeconomic policies). In other

words, they conclude that firms with a high level of foreign ownership are more likely to export more than firms with less or no foreign shareholding.

Sharma (2003) investigated the growth of exports in India and FDI's role in it, employing annual data for the period 1970-1998. Applying the two-stage least squares (2SLS) method, Sharma (2003) estimated export performance as a function of world income (proxied by world GDP), real exchange rate, domestic demand, FDI and inflation. The econometric analyses show that domestic demand and exchange rate have a negative relationship with exports. This implies that an appreciation in the value of the rupee reduces exports, while an increase in domestic demand reduces the quantity of output available for export. The coefficient of the global income variable was not statistically significant, suggesting that Indian exports are not affected by global income. For the FDI variable, although the estimated coefficient was positive, it was not statistically significant. This finding is consistent with Lall and Mohammad's (1983) results for India. In an attempt to explain the absence or at best marginal contribution of FDI to exports in their findings, Lall and Mohammad (1983) and Sharma (2003) argue that as a result of the prolonged period of inward-oriented policy that the Indian government pursued, export-oriented FDI was effectively discouraged. As a result, among the MNEs investing in India during the time of these studies, the majority of them were marketing-seeking. Surprisingly, export prices relative to domestic prices seems to be the most significant determinant of export performance in India. This suggests that when, as a result of the depreciation of the local currency, export prices rise above domestic prices, firms are incentivised to export more.

For Vietnam, Anwar and Nguyen (2011a) used a panel dataset of 19 major trading partners for the period from 1990 to 2007. To capture the possible effect that the Asian Financial crisis might have had on the FDI-trade relationship, the authors divide the years of study into three sub-periods: pre-crisis, during crisis and post-crisis. Their results support the hypothesis that the presence of MNEs can have a positive impact on host country exports. From their results, FDI has a significant effect in all the periods considered except during the crisis period when the effect was statistically insignificant. Also, the impact of FDI on net exports was positive and significant after the Asian

financial crisis, although it was insignificant for the period as a whole. This result supports the earlier finding by Xuan and Xing (2008), who also analysed the impact of FDI on export growth in Vietnam using a gravity model. [5] They studied the relationship between FDI and export level in Vietnam from 1990 to 2004 using annual data of FDI flows from 23 source countries to Vietnam as well as Vietnam's exports. The authors find that FDI has a positive and significant impact on export growth in Vietnam for the period under study. Specifically, their results show that a 10 percent increase in inward FDI leads to a 1.3 percent increase in the level of exports.

Vukšić (2005) empirically tested the impact of FDI on exports, using panel data for 21 manufacturing firms in Croatia. The researcher used the Fixed-Effects-OLS estimation method to examine this relationship and the results indicate that FDI stock and productivity coefficients were positive and significant, although the FDI stock coefficient was relatively small. This, according to Vukšić (2005), implies that FDI has a positive relationship with export performance although its effects may be higher through increased productivity.

Whilst other studies reviewed so far have often treated FDI and exports in a way that presupposes that FDI precedes exports, there is evidence in the literature that suggests that the causal link between inward direct investment and exports is not always unidirectional. Several empirical studies (see, for example, Johnson, 2006, and Zhang and Felmingham, 2001) suggest that the direction of causality does not always run – at least exclusively - from FDI to exports. In fact, these studies show that the causal link between FDI and export can run in the reverse direction or even be bi-directional;

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[5] The gravity model of international trade was first advanced by Tinbergen (1962). Adapted from the Newtonian law of gravity, this model predicts the flow of international trade to be a function of the economic 'weight' (size of output or GDP) and the geographic distance between trading partners.

whereby increases in export level cause increases in FDI and both exports and FDI attract each other simultaneously.[6]

As Singh and Jun (1995) point out, it is not clear in the empirical literature whether FDI flows are attracted by the export-orientation and performance of the host country or whether FDI actually leads to increases in export performance. Consequently, Singh and Jun (1995) examined the causal link between FDI and exports for 31 countries, including Nigeria, over the period 1970-1993. The researchers classify the countries into high- and low-FDI countries and find that exports, particularly manufacturing exports, play a major and significant role in attracting FDI in high-FDI countries but not in low-FDI countries. Carrying out a Granger causality test[7] for the high-FDI countries, their results show that in four countries (Thailand, Portugal, Greece, and Ecuador), a unidirectional causality exists where exports Granger causes FDI while bidirectional causality is evidenced only in one country, Singapore, where export Granger causes FDI and *vice versa*. For the remaining countries (Nigeria, Egypt, Columbia, Mexico, Malaysia, Costa Rica and Columbia), the results of the Granger causality test are insignificant. On the peculiar nature of the result for Singapore, the researchers argue that Singapore received the most FDI within the sample period; consequently, it is possible that the comparatively lesser volume of FDI inflows in other countries has limited the capacity of FDI to influence export. Whatever the case, the

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[6] As in most of the empirical literature, also beyond the FDI-export nexus, studies examining causality rather than mere correlation, employ and operationalise the concept of Granger or temporal causality. According to Granger causality (Granger, 1969), if a variable X_1 "Granger-causes" a variable X_2, then past values of X_1 should contain information that helps predict X_2 above and beyond the information contained in past values of X_2 alone. This is, inevitably, a restrictive definition of causality purely based on temporal precedence of movements in a variable predicting future values of another.

[7] As noted earlier, causality, as used in this instance by Singh and Jun (1995), does not signify causation in the ordinary sense of the word, but rather 'temporal precedence' in a lead-lag relationship.

study makes a clear point by showing that causality does not only run from FDI to exports but can run the other way too.

Similarly, Johnson (2006) employed the Granger causality test to analyse the relationship between FDI (inward and outward) and exports in eight East Asian Economies. Using annual time series data for the period 1980-2003, the result of the Granger causality test shows that for FDI Granger causes export in four countries in the sample while export Granger causes FDI in two countries. The only case of bidirectional causality was in Korea, where FDI and exports Granger causes each other. Surprisingly, for three of the countries - China, Singapore, and Thailand - there was no causal link found between FDI and exports. This finding is in contrast with the result of Singh and Jun (1995) for Singapore. Instructively, Johnson (2006) points out that the result of his Granger causality tests must be treated with extreme caution, especially as the time series for the Chinese exports and FDI flows remained nonstationary even after the first difference (possibly suggesting that the variables were integrated of order two, i.e., containing an exponentially increasing trend). This, perhaps, could be the reason for the discrepancy between the results of Singh and Jun (1995) and Johnson (2006).

In another study, Zhang and Felmingham (2001) examine whether the relationship between FDI and exports is bi-directional as the theoretical literature suggests. Also, the researchers explored whether the impact of FDI on exports is similar across the regions of China (classified by the level of inflows) from 1986 to 1999. Zhang and Felmingham (2001) utilised both monthly and annual time series data. The researchers classified the regions into three, namely: the high FDI recipients (HFDI) situated along the coastal region; medium FDI recipients (MFDI) generally located in Central China; and low FDI recipients (LFDI) mostly those in Western China. This disaggregation was done with the aim of analysing the possible varying causal link between FDI and exports according to the level of FDI inflows. A standard Error Correction Model (ECM) was formulated to test for the long-run and short-run relationship between FDI and exports, while the standard Granger Causality and Sims tests were employed to establish the direction of causality.

The study first tests for the relationship between national FDI and national exports. The cointegration test shows that the two variables are cointegrated, indicating a possible causation in any direction, while the causality test reveals a bi-directional causal link. For the regions, the results are not uniform. For the HFDI region, the causality tests indicate that causality runs both ways, FDI leads to increased exports, and improved export performance attracts FDI. The results for the MFDI region were different, as causality was found to run from exports to FDI. Zhang and Felmingham (2001) suggest that this result may reflect the fact that some of the locations within this region were already export-oriented before the government finally gave its approval for foreign investment. Finally, in the LFDI region, the results show that FDI Granger causes export. Taken together, these results further support the hypothesis that the causal link between FDI and exports can run in both directions, and in some cases, can depend on the level of the flow of both exports and FDI. However, despite the interesting results from this study, the work raises questions about the role that the arbitrary classification of regions, undertaken according to the level of inflows, might have played in the results.

Table 4.1 provides a summary of the most salient features of the main empirical studies investigating FDI direct effects.

Table 4.1: Summary of Studies on Direct Effects

Name of Author	Country /Period of Study	Data/	Methods	Explanatory Variables	Findings
Sun (2001)	China 1984-1997	Provincial level Panel	Time Series and Cross-sectional (TSCS)	Lagged values of FDI, Domestic Investment (DI), and Exchange Rate (ER),	Positive effects
Liu and Shu (2003)	China 1997	Industry level Cross-sectional data	Two-stage Least Square (TSLS)	FDI, Labour cost, R&D intensity, Firm size	Positive effects of FDI across sectors
Zhang (2005)	China 1995	Industry level Cross-sectional data	OLS	FDI, lagged exports, GDP growth rate, share of Manufacturing GDP, ER	Positive Effects
Zhang and Song (2002)	China 1986-1997	Provincial Level Panel	Generalized Least Squares (GLS)	FDI, Share of the manufacturing output of the GDP, DI,	Positive effect

Gu et al. (2008)	China 1995-2005	Sector level panel	Instrumental Variable (IV) method	FDI, imports, ER, DI, GDP, R&D, wage and economies of scale	Positive effects
Sharma (2003)	India 1970-1998	Time series	Two-stage least squares (2SLS)	FDI, Domestic Investment, Inflation, Exchange rate	No effect
Singh and Jun (1995)	31 selected countries 1970-1993	Sectoral Panel data	OLS, 2SLS and Granger causality	FDI, EXP	Bidirectional relationship Export-orientation, the biggest determinant of FDI in high FDI recipient countries.
Anwar and Nguyen (2011a)	Vietnam 1990-2007	Panel data	Generalized Least Squares (GLS)	FDI, GDP of Vietnam and home country, Distance	Positive effects Pre-crisis No effect post-crisis
Johnson (2006)	8 East Asian countries 1980-2003	Time series and panel data	Granger Causality, Fixed Effects	Inward and outward FDI	Inward FDI Granger-causes exports
Kutan and Vukšić (2007)	12 Central and Eastern European 1996-2004	Pooled data	GLS	ER, GDP, Trade Liberalisation Index (TLI), stock of FDI and export prices	Positive effects on 8 countries and insignificant for the 4 New EU members

Lall and Mohammad (1983)	India 1976-1978	Industry level data	OLS	Foreign shares, incentive, highly paid employees, capital productivity	Foreign ownership increases export intensity
Leichenko et al. (1997)	USA 1980-1991	Industry Level data	OLS and Fixed Effects	FDI, Capital Investment, ER and lagged Exports	FDI promotes exports
Xuan and Xing (2008)	Vietnam 1990-2004	Pooled Time series	Pooled regression; Random effect	FDI, bilateral ER, bilateral Free trade argument, GDP	Positive effect
Vukšić (2005)	Croatia 1996-2002	Firm level Panel	Fixed-Effects-OLS	Productivity, Unit Labour Cost, ER, FDI	Positive effect
Zhang and Felmingham (2001)	China 1986-1999	Time series	Error Correction Modelling (ECM) and Granger Causality test	FDI and Exports	Bidirectional Causality
Wang et al. (2007)	China 1983-2002	Time Series	OLS	Lagged FDI, ER, TIME	Positive effects
Lutz (1987)	US 1965-1982	Tim series	Correlation analysis	FDI, Portfolio Investment, Long term investment, Stock ratio	Current and Lagged FDI has positive effects on Exports Lagged portfolio investment has insignificant impact of exports

Source: Author's elaboration

4.3   Empirical studies on the indirect (spillover) effects

Studies on the direct effects of FDI on the level of exports, as reviewed in the previous sections, are helpful in increasing our understanding of the relationship between FDI and exports at the aggregate level. However, such studies do not show how - or the mechanism through which - foreign firms improve the export performance of the host country. Theoretically, it is possible that FDI may improve host country exports either directly through the exports of MNEs affiliates or indirectly by improving, through the externalities resulting from the presence and activities of MNEs' affiliates, the productivity and export performance of local firms (Wang et al., 2007). Hence, the literature on FDI spillover aims to identify whether domestic firms begin to export and/or export more as a result of the entrance and activities of foreign firms and also the mechanism through which the FDI spillovers occur.

There have been numerous empirical studies on the various types of spillovers and how they affect the export performance of domestic firms. Studies like Aitken, Hanson and Harrison (1997), Greenaway et al. (2004), Ruane and Sutherland (2005) and Barrios et al. (2003) examined the presence of export spillover in developed economies, while others such as Sasidharan and Joseph (2001) and Abor et al. (2008) focused on developing countries.

Aitken et al. (1997) is one of the earliest studies that analysed the extent of the export spillover of MNEs on domestic firms' exports. They estimate a two-stage probit model using a panel data sample of 2,104 manufacturing firms in Mexico between 1986 and 1990. Given that localised spillovers associated with exporting may arise either through the entrance of MNEs or the geographical concentration of exporting firms (both domestic and foreign), the researchers distinguished between these two channels of export spillovers. Their econometric analyses indicate that it is only the concentration of MNEs in an industry that is positively correlated with the probability that domestic firms will export. There was no robust evidence for spillover from the local concentration of export activity. The results of this study suggest that proximity to

MNEs is much more important for domestic firms' export decision than the local concentration of exporting firms.

Kokko et al. (2001) use a 1998 cross-sectional dataset from the Uruguayan manufacturing sector to examine the export spillover of FDI. Recognising the possible impact that the prevailing macroeconomic trade regime may have on the spillover effect, Kokko et al. (2001) grouped MNEs according to whether they were established during the inward-oriented period (i.e., before 1972) or during the outward-oriented period (i.e., after 1973). From the results, there is no evidence of export spillover for MNEs established during the inward-oriented period but there appears to be a positive and significant relationship between the likelihood of domestic firms exporting and the presence of MNEs who established themselves during the outward-oriented era. This result supports the idea that the type of trade policy a host country adopts matters in determining the existence of an export spillover effect.

Lutz and Talavera (2004) investigate the direct and indirect benefits that Ukrainian firms gain from the presence of MNEs. Utilising cross-sectional data of 292 manufacturing firms, they examine the impact of FDI on the export volumes of the receiving firms and also how the inflow of FDI might affect other firms in the same region and industry. From their results, the coefficient of the FDI variable has a positive and significant association with the export volumes of firms that receive FDI. With regard to the spillover effect, although the coefficient is positive and statistically significant, it is very small in magnitude. Specifically, they find that a 10 percent increase in FDI leads to a 0.03 percent increase in export volumes of firms within the region and industry.

Utilising a similar empirical strategy as Aitken et al. (1997), Greenaway et al. (2004) investigate the impact of MNEs on the export behaviour of domestic firms in the UK over the period from 1992 to 1996. Using firm-level panel data of 3,662 firms, their results suggest that the presence of MNEs in the UK over the sample period increases the probability of exporting of local firms. Specifically, they found that the intensity of

the MNEs R&D expenditure, the level of foreign production in the sector and the export activities of the MNEs, all have a positive impact on the probability that local firms will increase their exports. This provides evidence that FDI does not only influence export performance through the export activities of the MNEs' subsidiaries but also, indirectly, by making local firms more export-oriented.

For Ireland, Ruane and Sutherland (2005) use firm-level data for the manufacturing sector from 3,561 firms to examine the presence of export spillover from MNEs to domestic firms. Specifically, the researchers explore how 'export-platform FDI' in particular, affects the decisions of firms to export and also the export intensity of domestic firms. They estimate a two-step Heckman selection model where the first step involved estimating the probability of exporting and, in the second step, factors that influence the export intensity of domestic firms. They investigated the possibility of spillover through two channels; through the presence of the MNEs, and the exporting intensity of foreign affiliates. Their econometric results indicate that the presence of MNEs has a positive and significant association with both the probability that domestically-owned firms will export and the intensity of their export. In contract, the coefficient of MNEs' export activities is negative and statistically suggesting that the exporting activities of foreign firms do not contribute to the export performance of domestic firms. The researchers citing the importance of FDI origin on MNE behaviour, tested for the differential impact of FDI from different countries of origin. The results suggest that FDI with US origins had more impact on the export decision and intensity of the domestic firms than non-US MNEs. Ruane and Sutherland (2005) argue that this may be as a result of the fact that US-owned FDI is typically concentrated in high tech and export-oriented sectors, more than non-US-owned FDI.

It is important to emphasise that not all empirical research on export spillovers in suggest a positive effect of FDI presence. While some studies (see, for example, Aitken et al., 1997; and Greenaway et al., 2004) find the presence of FDI export spillover, other studies suggest its absence. For example, in a study of Spanish manufacturing firms, Barrios et al. (2003) did not find the presence of an export spillover effect. Using firm-level data between 1990 and 2008, they estimate a Probit and a Tobit model in order to

investigate the determinants of the export intensity and export decisions of Spanish firms. Their analyses fail to find evidence that the R&D activities of foreign firms affect the likelihood of domestic firms' exporting, although they find that foreign firms benefit from the R&D activities of other multinationals in the same sector.

Sasidharan and Joseph (2001) analyse the role of foreign ownership on the export performance of manufacturing industries in India. They use firm-level data for 18 manufacturing industries in India for the years 1994 to 2005. The econometric analysis was carried out using the fractional logit estimation[8] model to capture the fractional response of the variables. Their results reveal that the impact of foreign affiliation on domestic firms is dependent on the technology intensity of the sector. They find that MNEs' export spillover is positive and significant in less-technology intensive sectors whereas there appear to no significant impact in technology-intensive sectors.

Cieślik and Hagemejer (2014) use a firm-level panel dataset for Polish firms for the period 2000-2008 to test for the presence of export spillover from MNEs. The researchers estimate a probit model and a Heckman selection model to capture the probability that local firms will export as well as how much to export. Their econometric analysis captured spillover both at the sector level and the regional level. The empirical results show that domestic firms' decision to export is positively related only to the sectoral concentration of regional MNEs and not regional concentration.

Although many studies examine the horizontal export spillover from FDI, relatively few examine the effect of FDI linkages. Kneller and Pisu (2007) building on the work of Greenaway et al. (2004) investigated the impact of not only the FDI-related horizontal spillover but also the vertical (backward and forward linkage) spillover effect on the export performance of domestic firms in the UK over the period of 1992 to 1999.

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[8] The fractional logit estimation was first developed by Papke and Wooldridge (1996). It was developed to account for the limitations of OLS and tobit estimations as it is able to deal with fractional variables that are bound by 0 and 1.

They find evidence of horizontal and vertical spillover on domestic firms' export intensity. In other words, they find that the share of export to output of domestic firms is positively affected by the presence of MNEs in the same sector, as well as those in the upstream and downstream industries. However, on the likelihood of domestic firms venturing into the export market, they find that it is backward linkages with domestic firms that have a positive effect. Forward linkages and contact with foreign firms within the same sector do not appear to affect the probability of domestic firms' decision to export.

Anwar and Nguyen (2011) find an almost opposite result when they use a cross-sectional firm-level data from Vietnam to analyse the intra-industry and intra-industry effect of FDI on Vietnamese domestic firms. Although they find that the presence of foreign firms increases the export performance (both the likelihood of exporting and export intensity) of domestic firms, and their result show that backward linkages with domestic firms decrease the export performance of the domestic firms. Interestingly, unlike Kneller and Pisu (2007), they find that forward linkages with domestic firms improve the export performance of domestic firms. The authors conclude that the positive effect of forward linkages may be because foreign firms supply domestic firms with improved or less costly inputs which might improve their productivity and export competitiveness. Meanwhile, the negative effects of the backward linkages may result from the fact that foreign firms may purchase what domestic firms would have hitherto exported.

Chen et al. (2013) examined the impact of both horizontal and vertical export spillover from FDI on Chinese domestic manufacturing firms. Unlike previous studies, Chen et al. (2013) used both export-to-sales ratio and export values as indicators of domestic firms' export intensity. Their results show that FDI has positive intra-industry and inter-industry spillover effect on domestic firms' export performance. Taking insights from Girma et al. (2008) who found that the export orientation of foreign firms determines their spillover effect, Chen et al. (2013) grouped foreign firms according to their export orientation — exporting and non-exporting. They find that both exporting and non-exporting MNEs have a positive effect on domestic firms' export values through

backward linkages. However, on intra-industry effect, exporting MNEs have a positive impact on domestic firms' export-to-sales ratio, while non-exporting firms do not seem to have any significant impact on the export-to-sales ratio of domestic firms. This result has important implications. Given that many export spillover studies use export-to-sales ratio as the measure of export performance, this result suggests that even when the presence and activities of foreign firms do not appear to have any impact of domestic firms' export-to-sales ratio, FDI could still have a positive spillover effect on domestic firms' export values. As the authors argue, the export value of a firm is an indicator of its export competitiveness while the export-to-sales ratio indicates its market orientation. Hence, a domestic firm's productivity may be improved by technology spillover from FDI and subsequently increase their export values, but their export-to-sales ratio would remain unchanged if the increase in productivity leads to a proportionate incre6ase in both domestic and international sales.

Table 4.2 below provides a summary of the most significant empirical studies on the indirect (spillover) effects.

Table 4.2: Summary of Studies on Indirect Effects

Name of Author	Country / Period of Study	Data	Methods	Explanatory Variables	Findings
Kneller and Pisu (2007)	UK 1992 – 1999	Firm-Level Panel	Heckman Selection Model	FDI (proxied by level of ownership), Firm age	Presence of export spillover
Ruane and Sutherland (2005)	Ireland 1991-1998	Firm-level Panel data	Heckman two-step Estimator	MNE export, employment, wage, R&D and year.	Presence of export spillover
Anwar and Nguyen (2011b)	Vietnam 2001-2002	Cross-sectional Firm-level data	Heckman two-step Estimator	Capital Intensity, Human capital, MNE concentration, Technology gap, FDI	Presence of FDI export spillover
Aitken et al. 1997	Mexico 1986-1990	Firm-level Panel data	Two-stage Conditional Maximum Likelihood estimator (2SCML)	Overall industry activities, concentration of MNEs, local export, MNE exports	Presence of export spillover
Greenaway et al (2004)	UK 1992-1996	Firm-level Panel data	Heckman Selection Model	Turnover, wage, assets, production cost, R&D, FDI, share of employment, exports	Presence of export spillover
Kokko et al. (2001)	Uruguay	Cross-sectional firm level	GLS	Share of employment, per capita electricity consumption, share of management personnel	FDI effect is dependent on trade regime

Barrios et al. (2003)	Spain	Firm Level	Tobit and Probit	FDI, MNE exports, Domestic exports, productivity, firm age and size	No evidence of spillover
Sasidharan and Joseph (2001)	India 1994-2005	Firm-level Panel data	Fractional Logit Estimator	Foreign ownership, firm size, capital intensity, R&D intensity, raw material imports	Spillover is dependent on the technology intensity of the sector.
Cieślik and Hagemejer (2014)	Poland 2000-2008	Firm-level Panel data	Heckman Selection Model and logit, linear probability model (LPM)	Output, Exports, Absorptive capacity, level of foreign ownership, wage, employment	Spillover is dependent on the sectoral concentration of MNEs, not regional
Lutz and Talavera (2004)	Ukraine	Cross-sectional firm-level	GLS	Industry, Region, FDI, ownership Scale	Presence of export spillover
Chen et al. (2013)	China	Panel Firm-level	Heckman Selection and IV	TFP, size, R&D, foreign equity share, industry export share	Positive of export spillover (vertical and horizontal)

Source: Author's elaboration

4.4 Studies on FDI and export performance in Africa

Unlike the case of other regions of the world, there is a paucity of empirical research on the relationship between FDI and export performance in Africa, as can be evinced from the summary reported in Table 4.3. The poor attention paid to this strand of research is perhaps as a result of the fact that compared to other developing countries, African countries have been relatively poor in their export performance. However, this phenomenon only portrays the dominance of primary commodity as a share of total export (Morrissey and Mold, 2006). As a result, Morrissey and Mold (2006) in their analysis of the export performance of some selected African countries utilised data on volume, rather than value, of export. Interestingly, they point out that according to UNCTAD data for the years 1990 to 2002, the volume of non-oil exports actually increased by over 130 percent. To explain the key determinants of the export performance in Africa, they conducted a dynamic panel data analysis using a GMM estimator for 48 African countries over the period 1987-2002. Their empirical results show that FDI stock as a percentage of GDP is significantly related to the volume of exports for the countries included in the study. The authors point out that this result may indicate that FDI in this region may not exactly be market-seeking as some of the countries "*are mostly too small for market-seeking FDI*" (Morrissey and Mold, 2006, p. 14)

AbuAl-Foul and Soliman (2008) investigated the impact of FDI on exports in four Middle Eastern and North African (MENA) countries using a panel of merchandise and manufacturing exports data between 1975 and 2003. They use a gravity equation to test the sensitivity of exports to FDI. Their empirical model is as follows:

$$logEXPORTS = f(logRGDPC, logRWGDPC, logFDI, logRER) \qquad (4.1)$$

Two measures of the dependent variables are used: merchandise exports and manufacturing exports. The independent variables include real GDP per capita of the region (RGDPC), the real GDP per capita for the rest of the world, FDI (flows and stock

102

are used separately in the regressions) and exchange rate. After controlling for fixed effects, the results of their regressions show that both FDI flows and the stock of FDI have a positive and significant (although not very high) association with manufacturing and merchandise exports.

Onyekwena et al. (2015) conducted a similar study focusing on 10 Economic Community of West African States (ECOWAS). They empirically analysed the impact of inward FDI in West Africa on exports to EU countries. Unlike previous studies, the researchers acknowledge that the impact of FDI is likely to vary across different export categories. They examined this relationship by grouping exports into three categories: primary, intermediate and final commodities. The researchers estimate a gravity model, using disaggregated export data for the period 2000-2010.

Starting with the basic model for trade between two countries:

$$F_{ijt} = R_{ijt} \frac{M_i M_j}{D_{ij}} \tag{4.2}$$

Re-specifying this in a log-linear form gives:

$$\ln F_{ijt} = \beta_1 \ln M_{it} + \beta_2 \ln M_{jt} + \beta_3 \ln D_{ijt} + \beta_4 \ln R_{ijt} + \beta_1 \ln \varepsilon_{ijt} \tag{4.3}$$

The augmented-GM model is further specified as:

$$\ln EXPORT_{ijt} = \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln Dist_{ijt} + \beta_4 LANG_{ijt}$$
$$+ \beta_1 \ln DPCI_{ijt} + \beta_1 \ln FDI_{ijt} + \rho_t + \gamma_{jt} + \varepsilon_{ijt} \tag{4.4}$$

In the model, the $EXPORT_{ijt}$ represents the log of exports from country i to country j at period t. $\ln GDP_{it}$ and $\ln GDP_{jt}$ represent the log of GDP of both the host and home country, respectively, while $\ln Dist_{ijt}$ is the distance between the trade partners. $\ln LANG_{ijt}$ is a dummy for language; $\ln DPCI_{ijt}$ represents the per capita

difference between the trading partners while $\ln FDI_{ijt}$ is the log of FDI stock in the host country.

From their analysis, the coefficient of GDP, distance, the per capita level of development among trade partners, are statistically insignificant. Not surprisingly, FDI was found to be the most significant determinant of exports. A further sensitivity analysis reveals that FDI has a positive relationship with primary good exports, a negative relationship with intermediate exports and no significant impact on final good exports. Thus, the authors argue, the bulk of FDI flows into the region are resource-seeking and tend not to process raw materials into intermediate and final commodities before exporting.

Unlike in other regions, there are relatively few studies that have considered export spillover from FDI in African countries. In a study on Kenya, Kinuthia (2016) examines whether the presence of foreign firms affects the export performance of Kenyan domestic firms by considering two channels of export spillover: demonstration and competition channels. Their results show that while there is evidence of FDI export spillover through demonstration channels, the spillover effect through competition is negative. This result highlights the contradictory nature of the effect of FDI, given that it could simultaneously promote the performance of some domestic firms, while driving other domestic firms, particularly those in the same sector, out of the market. This result is corroborated by Gachino (2014) who found the existence of knowledge and technological spillover in Kenyan manufacturing sector. Their result showed that the location of multinational companies led to changes in the products, in the process and the marketing strategy of domestic firms. Abor et al. (2008) examined the effect of FDI on domestic firms in Ghana, using firm-level data from 1991 to 2002. They found, interestingly, that level of foreign ownership in a firm is positively associated with the firm's decision to export and the proportion of their exports to export. Although this study helps shed light on how foreign ownership affects firm performance in Africa, it does not necessarily indicate whether there was any export spillover. Their results do not, for instance, show whether domestic firms improve their export performance by learning from or competing with the firms with foreign ownership.

104

Despite the paucity of research on FDI export spillover in African countries, a few studies have examined productivity spillover from FDI in Africa. Pfeiffer et al. (2014) investigated the presence of horizontal productivity spillover from FDI in 10 Sub-Saharan African countries. They find strong evidence that domestic firms benefit in terms of productivity from the presence of foreign firms. Although the extent of the spillover effect is dependent on the absorptive capacity of the domestic firms. Interestingly, they find that the largest productivity spillover effects emanates from foreign investors from Sub-Saharan African countries. Managi and Bwalya (2010) using firm-level data from Kenya, Tanzania and Zimbabwe also found evidence of intra-industry and inter-vertical productivity spillover from foreign firms to domestic firms.

As is common to other African countries, there are very few studies that have investigated specifically the impact of inward investment on exports in Nigeria. A recent study by Aigheyisi (2016) analyses the effects of import penetration and FDI on the performance of non-oil exports in Nigeria, using annual time series data from 1981 to 2012. The researcher employs the ARDL bounds test approach to cointegration (Pesaran and Shin, 1999; Pesaran et al., 2001) and error correction analysis to test for both the short- and long-run relationship between the variables. The study shows that while the impact of import penetration on non-oil export performance is positive in the short-run and negative in the long-run, both long- and short-run effects of FDI on non-oil export are not statistically significant. Thus, the authors conclude that FDI has no significant impact on the export performance of Nigeria's non-oil sectors. This result, however, contrasts with the earlier study by Olayiwola and Okodua (2013) who tested the export-led growth (ELG) hypothesis for Nigeria. In addition to testing the impact of non-oil exports on growth, the researchers also examine the impact of FDI on non-oil exports. Using annual time series data for the period 1980-2007 and adopting a Granger causality approach, Olayiwola and Okodua (2013) find that FDI has a positive impact on non-oil exports. Their analysis reveals a unidirectional causality running from FDI to non-oil exports over the sample period under study.

Enimola (2011) examines the link between FDI and export growth in Nigeria from 1970 to 2008. Utilising annual time series of FDI and export data, the research employed different econometric techniques such as unit root tests for the underlying series, cointegration and Granger-causality tests. Explanatory variables in the model include the exchange rate, output (proxied by real GDP), the relative price of exports, lagged exports and the trade liberalisation index (calculated as the import ratio on total trade volume). Their results show that there is a unidirectional causality running from exchange rate, trade liberalisation and FDI to exports.

Among the potential benefits of FDI on the host country's growth and export performance is the possibility that FDI can promote export diversification. Export diversification is especially important for Nigeria as the country relies heavily on oil sector exports, and the government has, and is still, devoting a significant amount of efforts in achieving this (Olayiwola and Okodua, 2013). Investigating whether FDI has made any contribution towards the diversification of exports in Nigeria, Arawomo et al. (2014) find that there is no evidence that FDI promotes export diversification. In fact, the coefficient of FDI in their model of export diversification is negative. This result is hardly surprising and could reflect the fact that the export-oriented FDI in Nigeria may be heavily skewed towards the oil sector, which is the dominant sector of the economy, while other sectors receive a significantly lesser proportion of FDI flows. They conclude, therefore, that FDI does not contribute towards changing the monocultural nature of the Nigerian economy. This result aligns with the findings by Alaya (2012) who similarly did not find any positive impact of FDI on export diversification in MENA (Middle East and North Africa) countries. Alaya (2012) argues that the presence of natural resources, which is common to the countries he considered, leads to export concentration and from the result, FDI inflows seem to only perpetuate export concentration rather than promote export diversification.

The studies cited above that examine the effect of FDI on Nigeria's export have mostly taken a macroeconomic outlook, examining the FDI-exports nexus at the aggregate national level. Since these studies take a macroeconomic approach, they do not show what happens at the microeconomic firm level. They do not, for instance, show whether

106

foreign equity affects the performance of domestic firms or whether domestic firms gain from the presence of foreign-owned firms in the same sector. To investigate these FDI spillovers, it is pertinent to take a microeconomic look at the firm level. Meanwhile, there has been limited study on FDI spillover in Nigeria. The few exceptions include Abereijo et al. (2012) who investigated the presence of technological spillover from foreign firms to domestic firms in the food productions industries. The authors find evidence of upgrade in production capabilities of domestic firms' due to technological spillover from foreign firms. The main channels of spillover are human capital (where erstwhile workers at an MNE join a domestic firm), technical assistance and training of domestic suppliers, and competition effect. Onyekwena (2012) also find evidence of productivity spillover from FDI in the Nigerian manufacturing sector.

It is worth pointing out that the studies examining FDI spillover effect in Nigeria have solely focused on productivity spillover. As far as this author is aware, there has been no study examining the export spillover from FDI in Nigeria. This study, therefore, is an attempt to fill in this gap in the literature by examining whether FDI affects the export performance of domestic firms in the non-oil sectors in Nigeria.

Table 4.3: Summary of empirical studies on FDI and Export Performance in Africa

Name of Author	Country /Period of Study	Data	Methods	Explanatory Variables	Findings
AbuAl-Foul and Soliman (2008	MENA countries 1975 - 2003	Panel Data	Fixed Effect Estimator	Per Capita GDP for host and global economy, exchange rate, FDI	Positive and significant effect
Aigheyisi (2016)	Nigeria 1981 – 2012.	Time Series	Autoregressive Distributed Lag (ARDL), Error Correction Model	Import penetration effects, FDI and exchange rate	No effect
Morrissey and Mold 2006	48 African Countries 1987-2002	Panel Data	GMM	GFCF, FDI, share of manufacturing FDI, ER, Price dummy	Positive relationship with export
Njong and Raymond (2011)	Cameroon 1980-2003	Time Series	OLS, Engle-Granger Two-step Co-integration	FDI stock, GDP, ER, TLI, Market Size,	Positive effect on export volume
Onyekwena, Ademuyiwa and Uneze (2015)	ECOWAS Countries 2000 – 2010	Panel Data	Gravity Model	GDP of the trading partners, Distance, Language, FDI stock	Positive on primary exports, Negative on intermediate exports Insignificant on final good exports

Abor et al. (2008)	Ghana 1991-2002	Firm-level Panel	Probit, Random Effect	FDI (proxied by level of ownership), Firm age, output, Profitablity, Education, location and sector	Presence of export spillover
Olayiwola and Okodua (2013)	Nigeria 1980 – 2007	Time series	Vector Error-Correction Modeling (VECM); Exogeneity, Impulse response functions (IRFs); Variance Decompositions (VDCs)	FDI, Non-oil Exports, GDP	Unidirectional causality from FDI to non-oil exports.
Enimola (2011)	Nigeria 1970 to 2008	Time series	ADF test, Phillip-Peron test and Granger Causality	FDI, ER, TLI, GDP	Positive effects
Arawomo (2014)	Nigeria	Time series	GMM	GDP, ER, DI, natural resources, and a proxy for democracy	FDI does not diversify export
Kinuthia (2016)	Kenya and Malaysia	Panel Firm Level	Pooled probit, LPM	Wages, Turnover, Profitability, R&D, age, export activities.	Presence of Export Spillover

Source: Author's elaboration

4.5   Conceptual framework

From the survey of the theoretical and empirical studies conducted in chapters 3 and 4 on the FDI-exports nexus, it is clear that the relationship in question is, at best, ambiguous. Mixed results from the applied literature suggest that while inward FDI can indeed promote export performance in the host country, there are instances where it may have insignificant, or even negative effects. Thus, there is a need for further research aimed at shedding light on the FDI-export relationship, especially for developing countries, and African countries in particular, where the empirical studies have hitherto been, at best, scant.

This PhD study addresses this gap aiming to add to what has gone before by investigating specific hypotheses that have been distilled from the review of the existing theoretical and empirical literature on the FDI-exports relationship. The specific hypotheses to be subjected to empirical scrutiny - and which therefore form the conceptual framework for the empirical analysis relating to the Nigerian experience to be conducted in Chapter 6 - are highlighted below.

Hypothesis 1: *Aggregate inward FDI has a positive effect on the volume of exports in Nigeria.*

The complementary relationship between FDI and exports is predicted by the theoretical literature (Helpman, 1984). Theory predicts that an increase in the volume of inward FDI can increase the volume of exports in the host country. Numerous studies provide empirical support for this prediction (see, for example, Lutz, 1987; and Sun, 2001). On the other hand, a substitutive relationship between FDI and exports is possible, whereby an increase in inward FDI may have an insignificant impact, or worse, retard the exports of the host country (Markusen, 1984). Further, Dunning and Lundan (2008) argue that the relationship between FDI and exports is dependent on the motivation underlying the FDI decision. Market-seeking FDI may not increase, or may even reduce exports, while efficiency-seeking and resource-seeking FDI are more likely to increase the exports of the host country (Vukšić, 2005; Franco, 2013).

As we have argued in the literature review, MNEs' affiliates are usually more productive and more likely to export as they possess specific ownership advantages, which may include having more knowledge about the workings of the international market. Moreover, MNEs are typically large firms, with superior technologies and financial means, hence better able than most domestic firms to afford the high fixed costs associated with exporting (Görg and Greenaway, 2001). Hence, it is reasonable to expect that aggregate inward FDI may affect positively the volume of total exports in the host country.

While we expect that FDI has a positive effect on the total volume of exports, there is evidence in the literature that suggests that the impact of aggregate FDI on exports may vary across different export categories. For instance, Onyekwena et al. (2015) found that FDI does not have the same impact on primary products, intermediate and finished product exports in West Africa. This highlights the need to disaggregate exports into different categories in order to assess the differential effect of aggregate FDI across the categories. Following related literature pertaining to the Nigerian experience, we disaggregate exports into oil and non-oil exports. The distinction is motivated by the fact that oil plays a significant role in Nigeria's economy. A large proportion of Nigeria's inward FDI goes to the oil sector and the sector's exports make up a very high percentage of total exports (Olayiwola and Okodua, 2013).

Hypothesis 2: *Sectoral FDI has a varied effect on export volume in Nigeria.*

While the previous hypotheses aim to examine FDI effect at the aggregate level, and across export categories, respectively, this hypothesis focuses on establishing whether the effects of FDI vary across recipient sectors. Several studies have investigated the impact of FDI on export performance using aggregate data, both at the national and regional level (see, for example, Leichenko and Erickson, 1997; and Kutan and Vukšić, 2007). However, increasing evidence in the literature suggests that the type and extent of the impact that FDI has on the host country may vary across sectors (see, for example, Wang et al., 2007). As a result, the use of aggregate data has been criticised for its inability to account for the varied effects of FDI and also because it obscures the fact that the impact of FDI is unlikely to be equal for all recipient sectors. In fact, the empirical literature is fraught with robust evidence that underscores the point that studying FDI effects at the sectoral level, gives a truer picture of FDI's contribution (Alfaro, 2003). Hence, a disaggregation of FDI inflows by sector is helpful to gain a better

understanding of which sectors attract most FDI. In this hypothesis, the sectoral distribution of FDI, as well as the sectoral structure of exports, will be examined in order to analyse the sectoral impact of inward FDI on trade.

Hypothesis 3: *FDI increases the export performance of domestic firms*

The previous hypotheses are concerned with the direct effects of FDI. This last hypothesis proceeds to examine the indirect effects of FDI. The drive for FDI over other forms of capital inflows is partly as a result of its ability to generate indirect effects through externalities that could boost the productivity and export capacity of local (domestic) firms (Aitken et al., 1997). Studies that focus on direct effects of FDI typically find an association between the level of inward FDI and the level of exports either nationally, regionally or across sectors. However, while these studies are helpful in increasing our understanding of the role that FDI plays in promoting exports, they do not show the mechanism through which the improved export performance occurs. Could it have been through improved export activities of MNEs' affiliates only? Or have domestic firms learnt to, and indeed, increased their export intensity as a result of the entrance of MNEs? These questions are at the heart of the concept of 'spillover effects', and what studies investigating the spillover effect aim to uncover. This line of inquiry helps to unveil whether domestic firms benefit from the presence and export activities of MNEs.

This strand of research has attracted a significant amount of interest in developed countries where firm-level and industry level data are readily available. The unavailability of such data for many African economies has made an empirical investigation of this nature almost inexistent for such countries. However, recently, some firm-level data for some African countries are beginning to emerge, courtesy of surveys of domestic firms by international organisations such as the World Bank and the United Nations Industrial Development Organisation (UNIDO). Hence, in the present PhD study, firm-level data from a World Bank Enterprise Survey will be used to investigate how the presence of FDI has influenced the export performance of domestic firms in Nigeria.

4.6   Chapter summary

In this chapter, a critical review has been carried out of empirical studies examining the contribution of inward FDI and the activities of MNEs on the growth of exports at the national, regional and sector level. Some of these studies present a broad view of FDI impact on export performance by examining the FDI-export relationship at a multi-country level, while others focus on a single country. Both approaches have their merits as the multi-country studies help to understand the general and typical relationship across time and places, while the single-country studies enter into some depth, taking into account the peculiarities and specific nature of the host country examined as well as the type of FDI it attracts (both of which could determine the type of effect that FDI could have).

The empirical studies reviewed show that the evidence for a positive effect of FDI is not universal, as it is possible that FDI may have a statistically insignificant or even a negative impact on export performance. Moreover, the causal link between inward FDI and exports is not always unidirectional, as exports can also Granger-cause FDI or the relationship might be bi-directional. This issue also raises questions about the validity of empirical studies that have not corrected for the likely endogeneity bias inherent in the relationship in question. The ambiguity of the mixed results emerging from the literature has been attributed to several factors some of which include data type, methodological issues and potential effects of mediating factors such as the level of host country development, absorptive capacity, degree of openness and other host country policies.

Finally, drawing from the myriad of theoretical and empirical studies, the author identified gaps which guided the formulation of the hypotheses that will be subjected to empirical scrutiny in the analysis that follows.

CHAPTER FIVE

METHODOLOGY

5.1 Chapter overview

This chapter outlines the econometric methodology employed in this study. The chapter begins by detailing the appropriate time series econometric techniques and firm-level data analysis approaches. A brief overview of the properties of a time series and its implication for regression analysis is presented. After discussing the fundamentals of the underlying concepts of stationarity and unit roots, several unit root tests are illustrated, and the unit root tests to be employed in the present study are chosen based on their relative strengths and weaknesses. The concept of cointegration is then examined in detail, with particular attention paid to multivariate cointegration in the form of the Johansen Maximum-Likelihood (ML) method, and the Autoregressive Distributed Lag (ARDL) bounds test for cointegration, which is capable of accommodating the analysis of level relationships among variables even when there is uncertainty about the mixed order of integration of the regressors. Furthermore, firm-level data analysis approaches are also examined in detail. The appropriateness of the Heckman selection model, known for its ability to correct for sample selection bias, is discussed. A chapter summary concludes.

5.2 Techniques of Analysis

To answer the research questions associated with the hypotheses forming our theory-based empirical framework, it is pertinent to employ the most appropriate econometric techniques expected to yield the most reliable and efficient results. Since this study is going to use both time series national data and firm-level data, appropriate time series econometric techniques as well as firm-level data analysis methods, are going to be critically reviewed.

5.3 Time series analysis

In applied time series econometrics - in the absence of testing - we only have limited knowledge of the processes that determine the time series properties of the observed data (Harris, 1995).

To ensure reliability in modelling and estimation, therefore, there is a need to ascertain the statistical processes underlying the data generation process (DGP), namely, whether each time series is stationary or contains unit roots.

For many years, up until the 1970s, it was thought that the time series properties of variables did not significantly affect the reliability of the economic regressions. However, Newbold and Granger (1974) in their seminal work, pointed out that the possible consequences of making such assumptions, and showed that regressing a non-stationary series, even when the model produces a high R-squared value,[9] may likely result in a 'spurious regression'. Specifically, a spurious regression problem is evident when "*the results obtained suggest that there are statistically significant relationships between the variables in the regression model when in fact all that is obtained is evidence of contemporaneous correlations rather than meaningful causal relations*" (Harris, 1995, p. 14)**.** When the means and variances of macroeconomic time series vary over time, so do their respective distributions. Since conventional F and t test statistics do not have their usual distribution for a non-stationary series (e.g., a series integrated of order 1), erroneous inferences are made (De Vita et al., 2006).

In cases in which the variables are shown to be nonstationary, one solution to induce stationarity would be to take the first difference (or second difference if the variable is integrated of order two) of the variables. But whilst this approach would induce stationarity (and hence make the differenced variable integrated of order zero) it would simultaneously remove the long-run information from the series in question, meaning that "*valuable information from economic theory concerning the long-run equilibrium properties of the data would be lost*" (Kennedy, 1998, p. 269). The discovery of cointegration solves precisely this problem. If cointegrated, even though level variables may be integrated of order 1 (I(1)), there is a special combination of them that is stationary, i.e. I(0). This cointegrating combination can be interpreted as a long-run equilibrium relationship. Since its inception, the cointegration technique has proved to be a very useful tool in econometric analysis. As noted by Kennedy (1998, p. 270), "*it provides a formal framework for testing for and estimating long-run (equilibrium) relationships among economic variables*".

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[9] The R-squared value is known as 'the coefficient of determination', indicating the explanatory power of the model.

Consequently, in the next sections, we are going to examine different unit root tests and cointegration techniques and make a decision as to which is most appropriate in analysing our data.

5.3.1 Unit Root Test

As pointed out in the previous section, running a regression a model with nonstationary series will most likely produce a spurious or nonsensical regression result. Hence, the first step in a time series econometric analysis is to determine the stochastic properties of the data series.

A time series is stationary if "*its mean and variance are constant over time and the value of the covariance between the two time periods depends only on the distance or gap or lag between the two time periods and not the actual time at which the covariance is computed.*" (Gujarati, 2009, p. 797). Consequently, the mean value of a stationary series fluctuates around or returns to a long-run mean, while a non-stationary series has different means at different points in time and a time-varying variance that increases with sample size (Harris, 1995). According to Gujarati (2009), a stochastic process, say Y_t, will be considered stationary if it has the following properties:

a) Mean: $E(Y_t) = \mu$ (5.6)

b) Variance: $\mathrm{var}\,(Y_t) = E\,(Y_t - \mu)^2 = \sigma^2$ (5.7)

c) Covariance: $\gamma_k = E\,[(Y_t - \mu)(Y_{t+k} - \mu)]$ (5.8)

Equations 5.6 and 5.7 indicate that the mean and variance of the time series Y_t are constant over time. Furthermore, in equation 5.8, the covariance γ_k depends only on the lag between the two time periods.

The unit root test is one of the most popular means of detecting the stationarity of a time series. The idea behind the unit root is illustrated below.

Consider the basic form,

$$Y_t = \rho Y_{t-1} + u_t \qquad (5.9)$$

where the variable Y_t is determined by its lagged form Y_{t-1} and u_t, which is a white noise error term. From equation 5.9, if $\rho < 1$, the expected value of Y_t will approach zero as the sample increases and is eventually stationary (see Granger, 1986). However, in situations where $\rho = 1$, it is referred to as a unit root. Thus, if $\rho = 1$ in equation 5.9, then, the series Y_t follows a random walk and is, therefore, nonstationary.

Using OLS to estimate equation 5.9 in order to identify whether $\rho = 1$ will produce a biased result as the *t*-test would be biased if the series has a unit root (Gujarati, 2009). To solve this, equation 5.9 can be written alternatively by subtracting Y_{t-1} from both sides to obtain:

$$Y_t - Y_{t-1} = \rho Y_{t-1} - Y_{t-1} + u_t$$
$$\Delta Y_t = (\rho - 1)Y_{t-1} + u_t$$
$$\Delta Y_t = \delta Y_{t-1} + u_t \qquad (5.10)$$

where $\delta = \rho - 1$

Therefore, instead of testing for whether $0 < \rho \leq 1$, we test for whether δ *equals zero or less.* Y_t is stationary if δ *is less than zero* and nonstationary if δ *equates zero.*

Dickey and Fuller (1979, 1981) developed tests and calculated critical values that can be used to determine whether a series is nonstationary. In addition to estimating a random walk process such as equation 5.10, the DF test also estimates two other forms:

Random walk with constant or drift: $\qquad \Delta Y_t = \alpha_{1} + \delta Y_{t-1} + u_t \qquad (5.11)$

Random walk with a deterministic trend: $\qquad \Delta Y_t = \alpha_1 + \alpha_2 t + \delta Y_{t-1} + u_t \qquad (5.12)$

In all the forms, the DF test is aimed at estimating whether δ *is* equal or less than zero. Constructing a one-sided hypothesis test:

$\qquad$ $H_0: \delta = 0$ (the time series is nonstationary)

$\qquad$ $H_1: \delta < 0$ (the time series is stationary)

According to Enders (2004), the presence of a unit root in a series can be determined by using OLS to estimate one or more equations such as 5.10 in order to estimate the value of δ and u. The result of the t-statistic is then compared with the critical value from the Dickey-Fuller's tables before a decision is made on whether to accept or reject the null hypothesis.

In conducting the DF test, one assumption is that the errors are uncorrelated. However, the errors may not be white noise, and as a result, Dickey and Fuller improved their test by developing an augmented model which takes into account further lags of the regressand in order to address autocorrelation. This test came to be termed the Augmented Dickey-Fuller (ADF) test. According to Asteriou and Hall (2016), the ADF has three possible forms:

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_t + \varepsilon_t \qquad (5.13)$$

$$\Delta Y_t = \alpha_1 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_t + \varepsilon_t \qquad (5.14)$$

$$\Delta Y_t = \alpha_1 + \alpha_2 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_t + \varepsilon_t \qquad (5.15)$$

The critical values for the ADF test are the same as the DF test.

An alternative unit root test was developed by Phillips (1987) and Phillips and Perron (1988). Rather than introduce additional lagged dependent variables in the regression in order to capture the autocorrelation in the error term caused by omitted variables, the Phillips-Peron (PP) test uses a nonparametric technique that adjusts the DF test statistics to account for the presence of autocorrelation.

Despite the advances of the two approaches of Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root test, both tests are known to potentially suffer from severe finite sample power and size problems and make the results somewhat unreliable especially for small samples. First, both tests are known to have low power against the alternative hypothesis that the series is stationary (or TS) with a large autoregressive root (DeJong et al., 1992). Second, both tests are known to have a severe size distortion (in the direction of over-rejecting the null hypothesis) when the series has a large negative moving average root. The newly proposed test developed by Ng and Perron (2001) deals satisfactorily with both of these problems.

Building on the work of Perron and Ng (1996) and Elliot et al. (1996), Ng and Perron (2001) provides four test statistics utilising GLS de-trended data, which have better power and size properties compared to ADF and PP tests. Ng and Perron (2001) propose three test *MZa*, *MZt*

and *MSB*, collectively namely *M*-class tests. The MZa and MZt that are calculated based on forms of Phillips (1987) and Phillips and Perron (1988), Z_a and Z_t statistics and the MSB that is related to Bhargava's (1986) R_1 test. Ng and Perron (2001) also develop a modified version of Elliot et al. (1996) feasible point optimal statistic namely MP$_T$ test. The terms are defined as follows:

$$MZ_a = (T^{-1}(D_T^d)^2 - f_0)/(2k) \tag{5.16}$$

$$MZ_t = MZ_a \times MSB \tag{5.17}$$

$$MSB = (k/f_o)^{1/2} \tag{5.18}$$

$$MP_T^d = \begin{cases} (\bar{c}_k^2 - \bar{c}T^{-1}(\mathbf{y}_T^d)^2)/f_0 \\ (\bar{c}_k^2 + (1-\bar{c})T^{-1}(\mathbf{y}_T^d)^2)/f_0 \end{cases} \qquad \begin{array}{l} when\ d_t^0 \\ when\ d_t^1 \end{array} \tag{5.19}$$

where $k = \sum_{t=2}^{T}(D_{t-1})^2/T^2$ and $\bar{c} = \begin{cases} -7 & when\ d_t^0 \\ -13.5 & when\ d_t^1 \end{cases}$; d_t^0 represents drift and d_t^1 drift and

trend in DGP, f_0 is the zero frequency spectrum term, and $\mathbf{y}_T^d$ is the generalized least squares (GLS) de-trended value of the variables.

The Ng and Perron (2001) unit root test is regularly employed by applied econometricians as it is more advanced than the ADF and PP unit root tests and has better size and power properties. The augmentation inherent in the ADF unit root (UR) test gets rids of correlation but the Ng and Perron (2001) test – building on the Phillips and Perron (PP) (1988) UR test – additionally entails a detrending transformation that removes the trend from the series. The advantage of the Ng and Perron (2001) over the PP (1988) UR test is that it has greater power (see, e.g., Gregoriou and Kontonikas, 2006). Consequently, because of these stated advantages, the Ng and Perron (2001) test will be used in the present analysis to test the stationarity of the variables used in this study.

5.3.2   Cointegration

As noted earlier, running regressions with nonstationary time series, that is series that are integrated of order higher than 0, can lead to the possibility that the regression results will be spurious. When a series is identified to be nonstationary, one of the general approaches to

induce stationarity is to difference the time series.[10] Unfortunately, as econometricians have come to learn, differencing time series removes the inherent information about the long-run equilibrium relationship predicted by economic theory.

However, despite the challenges of non-stationarity of time series, it is possible that a special combination of two or more nonstationary variables may produce a stationary process (Granger, 1986). Thus, variables that are individually nonstationary, but whose linear combination is stationary, are said to be cointegrated. The economic implication of cointegration is that, even if the series diverge substantially in the short-run, they do not drift too far apart in the long-run, and their difference tends to be static (Kennedy, 1998). Subsequently, by finding a linear combination of nonstationary series that is stationary, cointegration benefits macroeconomic modelling by preserving the long-run information that gets lost when stationarity is induced by first differencing.

To illustrate the concept of cointegration, consider two series, Y_t and X_t. If we regress Y_t on X_t. we have

$$Y_t = \beta_1 + \beta_2 X_t + u_t \qquad (5.20)$$

Alternatively, this can be rewritten as:

$$u_t = Y_t - \beta_1 + \beta_2 X_t \qquad (5.21)$$

Suppose we found, after an appropriate unit root test, that both Y_t and X_t are individually *I(1)*, that is, non-stationary of order one. We might suspect that the regression result of equation 5.20 may be spurious. However, if u_t is subjected to a unit root test and found to be *I(0)*, then we may conclude that, despite the non-stationarity of the series Y_t and X_t, the variables are cointegrated, and as such, the regression result of equation 5.20 is not spurious.

Like the unit root test, there are several techniques that can be used to test for cointegration. The first is the procedure introduced by the seminal work of Engle and Granger (1987). This method is generally more appropriate for single equations of one dependent and one independent variable. The Engle-Granger test involves two steps. First, the variables are

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[10] This is usually the case in a Box-Jenkins approach.

regressed (say, for example, equation 5.20). The second step involves running a unit root test on the error term. The DF or Augmented DF (ADF) unit root test can be used for this purpose, although the critical value of the DF is not appropriate for the test, instead, the critical values calculated by Engle and Granger (1987) should be employed. However, despite the usefulness of the Engle-Granger cointegration test, it is suitable only for models with one independent variable and may exhibit small-sample bias (Harris, 1995).

Another cointegration test that may be employed in cases where there is more than one independent variable is the Johansen cointegration technique introduced by Johansen (1988) and Johansen and Juselius (1990).

5.3.3   The Johansen VAR Cointegration technique

Johansen (1988) and Johansen and Juselius (1990) proposed a framework for considering the possibility of multiple cointegrating vectors. Despite the fact that there are several approaches to multivariate cointegration, the Johansen method is among the most widely employed applied techniques and is widely programmed in econometric software packages. The procedure uses a general vector error correction model and a reduced regression model through which the number of cointegrating vectors is determined by the rank of the long-run matrix. In the Johansen method, all the variables are treated as endogenous, with each expressed as a linear function of lagged values of themselves and all other variables (De Vita et al., 2006).

Consider an unrestricted form vector autoregression (VAR) of order *p*:

$$y_t = A_1 y_{t-1} + ... + A_p y_{t-p} + \mu + \varepsilon_t \qquad (5.22)$$

where y_t is a *k*-vector of I(1) variable and ε_t is white noise. We can rewrite this VAR as:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + \mu + \varepsilon_t \qquad (5.23)$$

where $\Gamma_i = -I + A_1 + ... + A_i$ and $\Pi = -(I - A_1 - ... - A_m)$

Πy_{t-1} represents the long-run equilibrium solution. Using the Johansen cointegration technique, cointegration is tested by estimating the rank of Π. The rank of the matrix Π is denoted by r, which is the maximum number of independent vectors it contains (the number of cointegration rank) while k represents the total number of variables in the equation. If $r = 0$, there is no cointegrating relationship among the variables. However, if $0 < r < k$, then there are r independent cointegration relationships in the equation. The rank of the matrix Π can be estimated using two tests proposed by the Johansen methodology: the trace test and the maximum eigenvalue test.

Despite the superiority of the Johansen cointegration test to the Engle-Granger cointegration approach, in cases where there are more than one independent variable, it has its limitations[11]. One of the demerits of this approach is that it may generate more than one single cointegrating vector of long-run coefficients and resultant ECMs, making interpretation of multiple cointegrating vectors difficult. Furthermore, an implicit assumption in the application of the Johansen's VAR cointegration technique is that all the variables are integrated of the same order (Pesaran et al., 2001). However, if the series are integrated of different order – a mixture of stationary and nonstationary series— the conventional likelihood ratio test may no longer be valid, and the test result of the trace and eigenvalue tests will be difficult to interpret since the combination of stationary and nonstationary series may yield a spurious cointegration relationship (Harris, 1995).

5.3.4   The ARDL bounds testing approach to cointegration

Given some of the aforementioned limitations of the Johansen and the Engle-Granger tests, the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration was formulated by Pesaran and Shin (1999) and Pesaran et al. (2001). Unlike the other cointegration tests, the ARDL approach is most appropriate for testing cointegration regardless of whether

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[11] First, the Johansen ML approach is a VAR-based technique, hence endogeneity is not a concern as the explanatory variables can be exogenous or endogenous. Second, restrictions can be applied to the cointegrating vectors, something which cannot be done with the Engle-Granger procedure. Third, the lags in the ECM can be jointly tested for statistical significance so as to establish any short-run 'Granger Causality'.

the independent variables are integrated of a different order. Another merit of the ARDL approach is that it involves an empirically tractable single-equation set-up, making it relatively easy to implement and interpret. Furthermore, it allows a flexible dynamic specification since the various series can be assigned different lag lengths as they are included in the model. These lags effectively act as instruments thus also alleviating any potential of both serial correlations among variables and endogeneity bias.

Consider a simple of form of an Autoregressive Distributed Lag (ARDL) regression model:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \ldots\ldots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + \ldots + \alpha_q x_{t-q} + \varepsilon_t, \qquad (5.24)$$

where ε_t is a white noise error.

The model above needs some manipulation if we are working with a mixture of differences and levels of the time series. Should all the variables be stationary, i.e. integrated of order zero, we could simply use an OLS regression for the variables in their levels, using OLS estimation. The ARDL bounds test for cointegration helps us to deal with the more complex case highlighted above, i.e. the case in which we wish to test for the presence of cointegration in the presence of a mixture of stationary and nonstationary variables.

Although it was mentioned earlier that the ARDL can be applied to a model with regressors of different integration, in practice, it is important to ensure that the order of the integration of the variables is known, that none of the variables is integrated of order 2 or higher, and that the dependent variable is $I(1)$. As pointed out by De Vita et al. (2006), if $I(2)$ variables are included in the regression, then the critical value calculated by Pesaran et al. (2001) will not be valid. Hence, in applying this test, the first step is to determine the time series properties of all the variables with appropriate unit root tests.

Next, we construct an unrestricted Error Correction Model (ECM). First, consider a typical ECM[12]

$$\Delta y_t = \delta_0 + \sum_{j=1}^{p} \delta_1 \Delta y_{t-1} + \sum_{i=0}^{q_1} \delta_2 \Delta x_{t-i} + \sum_{i=0}^{q_2} \delta_3 \Delta x_{t-i} + \varphi z_{t-1} + e_t \qquad (5.25)$$

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[12] Equation 5.25 can also include a time trend and/or dummy variables.

where $z_{t-1} = y_{t-1} - \beta_0 - \beta_1 x_{1_{t-1}} - \beta_2 x_{2_{t-1}}$ is the error correction term and the lagged residual from the long-run cointegration equation stated below

$$y_{t-1} = \beta_0 + \beta_1 x_{1_{t-1}} + \beta_2 x_{2_{t-1}} + v_t \qquad\qquad 5.26$$

Constructing an unrestricted ECM, we get

$$\Delta y_t = \delta_0 + \sum_{j=1}^{p} \delta_1 \Delta y_{t-1} + \sum_{i=0}^{q_1} \delta_2 \Delta x_{t-i} + \sum_{i=0}^{q_2} \delta_3 \Delta x_{t-i} + \theta_1 y_{t-1} + \theta_2 x_{1_{t-1}} + \theta_3 x_{2_{t-1}}$$
$$+ e_t \qquad\qquad (5.27)$$

where δ_0 is the constant term, while δ_i and θ_i are the long- and short-run parameters, respectively. Equation 5.27 is quite similar to equation 5.25, except that in equation 5.27 the lag of the error correction term, z_{t-1}, is replaced by the lagged values of the independent and dependent variables. The difference made by the unrestricted ECM is that, unlike the regular ECM, the lagged levels are included without a restriction on their coefficients.

The next step entails selecting the appropriate number of lags that is optimal for the model and estimating the equation using OLS. Lag selection is typically decided on the basis of one or more standard model information criteria such as the Akaike Information Criterion (AIC) or the Schwartz Bayesian Criterion (SBC).[13] We then proceed to test for the presence of cointegration among the variables.

As noted by De Vita and Trachanas (2016), we can perform the 'bounds testing' using any of the three statistics: the modified F-test (F_{PSS}), the Wald-test (W_{PSS}), and the t-test (t_{BDM}). The bounds test involves testing the null hypothesis that the lagged levels variables in equation 5.14

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[13] Both the AIC and SBC are measures of the relative quality of regression models for a given data set. Both model selection criteria are capable of estimating the quality of each model relative to each of the other models hence providing a means for model selection. For the relative merits of each criterion, see Burnham and Anderson (2004).

are jointly zero (that is, $H_0 : \theta_1 = \theta_2 = \theta_3 = 0$) against the alternative that it is not (that is, $H_0 : \theta_1 \neq 0, \theta_2 \neq 0, \theta_3 \neq 0$). As shown by Pesaran et al. (2001), this procedure uses two critical bounds: the upper and the lower bound. The null of 'no cointegration' is rejected if the estimated value of any of the statistics (F_{PSS}, W_{PSS} and t_{BDM}) falls above the upper critical bound. Conversely, the null hypothesis cannot be rejected if the estimated value of the test statistic falls below the lower critical bound. The test is inconclusive if the statistic falls between the critical bounds.

Once cointegration is proven to exist among the variables, then we can proceed to estimate the long-run cointegration regression (equation 5.26) and also the short-run dynamic among the variables can be estimated by regressing the ECM model (equation 5.25).

During the bound testing, it is important to ensure that, for the given autoregressive structure (lag specification selected), the model is dynamically stable. To assess the parameter constancy, Pesaran et al. (2001) suggest a critical diagnostic test which involves applying the cumulative sum of recursive residuals (CUSUM) and the CUSUM sum of squares (CUSUMSQ) tests.

Since its inception, the ARDL bounds testing approach to cointegration has proved to be very popular in the empirical literature [14] and continues to be seen as a very useful and reliable cointegration methodology.

5.4   Microeconometric Techniques

In addition to national time series, this study will also analyse the relationship between export and inward FDI using firm-level data. In this section, a brief overview of different firm-level microeconometric techniques is presented.

To model the exporting activities of firms, we follow the convention in the literature and treat a firm's exporting activity as involving two stages (see, for example, Kneller and Pisu, 2007; and Greenway et al. 2004). Primarily, because exporting activities involve sunk costs, we

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[14] For some early applications, see De Vita and Abbott (2002) and De Vita et al. (2006).

consider that before a firm enters the foreign market it decides: (a) whether to export or not and, (b) what proportion of their output they will export. Apart from the theoretical justification for the two-stage modelling, Heckman's (1979) work on sample selection bias shows that if OLS is used to estimate the FDI-export spillover in a single equation, then a specification error due to selection bias would occur. Since not all the firms in the sample export, estimating the impact of FDI on the export decision or intensity of only the firms that export will result in a selection bias, and will not provide a reliable estimate of the impact of FDI on the whole population. Consequently, Heckman (1979) developed the two-stage estimation technique that will correct for self-selection bias.

As noted by Kneller and Pisu (2007), the equation can be written as:

$$d_{it}^* = z_{it}\gamma + v_{it} \quad \text{(export decision regression)} \quad (5.28)$$
$$I_{it}^* = x_{it}\beta + u_{it} \quad \text{(export intensity regression)} \quad (5.29)$$

with

$$d_{it}^* = 1 \qquad if \qquad d_{it}^* > 0$$
$$d_{it}^* = 1 \qquad if \qquad d_{it}^* \leq 0$$

$$I_{it} = I_{it}^* \qquad if \qquad d_{it} = 1$$
$$I_{it} = 0 \qquad if \qquad d_{it} = 0$$

From the two equations, the observed export intensity of a firm (I_{it}^*) is zero when the firm does not export ($d_{it} = 0$) and takes a positive value when the firm begins exporting ($d_{it} = 1$). γ and β are vectors of the independent variables. The unobserved errors (u_{it} and v_{it}) are assumed to be normally distributed with a correlation ρ. The two equations are correlated if $\rho = 1$.

$$\begin{pmatrix} u_i \\ v_i \end{pmatrix} \sim N\left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho\sigma \\ \rho\sigma & \sigma^2 \end{pmatrix} \right]$$

The first step in the Heckman (1979) two-stage approach is to regress the probit model of the export decision (that is, equation 5.28), and then the inverse Mill's ratio is computed. Next, the inverse Mill's ratio is included as a regressor in the export intensity regression.

The Heckman selection model is widely applied in the literature by researchers investigating export spillover from FDI because of its ability to correct for sample selection bias and, because of this, its reliability in yielding reliable and efficient estimates (see, for example, Greenaway et al., 2004; Kneller and Pisu, 2007; and Chen et al., 2013). Consequently, we will adopt the Heckman selection model in our analysis.

5.5   Chapter summary

The econometric technique to be employed in this study were discussed in this chapter. Given that the study employs both time series and firm-level datasets, attention is paid to both time series and firm-level data econometric techniques. The importance of preliminary tests on time series data was explained and several time series approaches were critically reviewed. Based on their relative strength and weakness, and fitness for purpose, the appropriate time series techniques are selected. For the firm-level data estimations, the recurring problem found in the literature was the tendency for the occurrence of selection bias in the analysis. And from our review, the selection bias can be avoided by employing the Heckman two-stage procedure, where the two, instead of one, equations are estimated jointly.

CHAPTER SIX

EMPIRICAL RESULTS AND DISCUSSION

6.1 Chapter overview

In this chapter, the results of the econometric analysis of the direct and indirect impact of Foreign Direct Investment (FDI) on export performance are presented and discussed. First, the direct effect of aggregate and disaggregated FDI is examined using the appropriate time series econometric techniques discussed in the previous chapter. Next, the indirect effects of FDI on the export performance of domestic firms are examined. To test the indirect effect hypothesis, firm-level data is used, and the Heckman selection model is employed for the analysis. The chapter concludes with a discussion of the results and their significance.

6.2 Econometric analysis of the direct effect of aggregate FDI on export

In this section, we analyse how aggregate FDI affects export performance. As we have argued, convincingly, in the theoretical framework section of this study, aggregate FDI may have varied effects on total exports and across export categories. Hence, the first two hypotheses of this study are motivated by the intent of quantifying the impact of aggregate FDI on total exports and across oil and non-oil exports. The results of the empirical analysis are presented in this section.

6.2.1 Data description

Annual time series data were obtained from different sources. Data on FDI, REER and GDP were obtained from the World Development Indicators (WDI) database of the World Bank, while data on sector FDI and exports were collected from the Central Bank of Nigeria (CBN) statistical bulletins. For the first hypothesis involving total FDI, the sample period is from 1980 to 2015. For the second hypothesis covering disaggregated FDI, the sample period is limited to 1981-2009. Both sample periods are dictated by the availability of data. A detailed description of each variable and their source is presented in Table 6.1.

6.2.2 Variable Description

The variables included in the models for the first two hypotheses were chosen on the basis of the review of the theoretical and empirical literature on the FDI and export performance nexus undertaken in Chapters 3 and 4. The literature suggests that the size of the host country economy, the volume of inward FDI, the sectoral distribution of FDI, and the exchange rate, may influence the pattern and volume of exports of the host country.

Table 6.1: Variable Definition and Sources

Variables	Definition	Source
EXP	The volume of total exports (Naira)	Central Bank of Nigeria Statistical Bulletin
OEXP	Oil Exports (Naira)	Central Bank of Nigeria Statistical Bulletin
NEXP	The volume of Non-Oil Exports (Naira)	Central Bank of Nigeria Statistical Bulletin
GDP	Gross Domestic Product (real) (USD)	World Development Indicators (WDI)
REER	Real Effective Exchange Rate	World Development Indicators (WDI)
FDI	The volume of total Inward Foreign Direct Investment (USD)	World Development Indicators (WDI)
PFDI	The volume of Inward Foreign Direct Investment in the primary sector (Naira)	Central Bank of Nigeria Statistical Bulletin
MFDI	The volume of Inward Foreign Direct Investment in the manufacturing sector (Naira)	Central Bank of Nigeria Statistical Bulletin
SFDI	The volume of Inward Foreign Direct Investment in the service sector. (Naira)	Central Bank of Nigeria Statistical Bulletin

Source: Author's elaboration

6.2.3 Model Specification

Hypothesis 1: Aggregate inward FDI has a positive effect on the volume of exports in Nigeria.

$$lnEXP_t = \beta_0 + \beta_1 \, lnFDI_t + \beta_2 \, lnREER_t + \beta_3 \, lnGDP_t + \mu_t \qquad (6.1)$$

$$lnOEXPt = \alpha_0 + \alpha_1 \, lnFDI_t + \alpha_2 \, lnREER_t + \alpha_3 \, lnGDP_t + \varepsilon_t \qquad (6.2)$$

$$lnNEXPt = \delta_0 + \delta_1 \, lnFDI_t + \delta_2 \, lnREER_t + \delta_3 \, lnGDP_t + \eta_t \qquad (6.3)$$

In equations 1-3 above, the explanatory variables are the same while the dependent variable is different in each equation. *lnEXP* is the total amount of annual exports in log form, *lnOEXP* and *lnNEXP* stand for oil and non-oil exports in log form, respectively. *lnFDI, lnREER* and *lnGDP* represent aggregate FDI, the real effective exchange rate and gross domestic product, respectively, in log form.

6.2.4   Unit root test results

In the previous chapter, the appropriate time series techniques to be employed and the rationale behind the choice of such techniques were discussed in detail. The ARDL bounds testing approach to cointegration is chosen because of its ability to produce valid estimates in cases where the variables are integrated of different orders — that is, a mixture of *I(0)* and *I(1)* variables. The exception, however, is in cases where there are *I(2)* variables. According to De Vita et al. (2006), if *I(2)* variables are included in the equation, the F-statistics calculated by Pesaran et al. (2001) will not be valid. As a result, before applying the ARDL to any of the models, it is important to test the order of integration of the variables, using appropriate unit root techniques., in order to avoid running regressions with nonstationary time series data in the model. To this end, we apply the Ng and Perron (2001) and the augmented Dicky-Fuller (ADF) unit root tests (Dickey and Fuller, 1981).

The results of the unit root tests for the three models (equations 6.1 to 6.3) are reported in Table 6.2. Table 6.2 shows the results of the unit root tests on the levels and first difference of the variables. From the table, the results show that all the variables in the regression are stationary

in first difference at the 10 percent level of significance. Since we are concerned about not having a *I(2)* variable in the regressions and the unit root results confirm this, the ARDL cointegration model is appropriate for estimating the model in question.

Table 6.2: Ng and Perron (2001) and ADF unit root tests

6.2.5   ARDL cointegration results

Next, since, as shown in Table 6.2, the results of the unit root tests conducted show that none of the variables is integrated of order 2, we employ the Autoregressive Distributed Lag (ARDL) cointegration approach (Pesaran and Shin, 1999; Pesaran et al., 2001) to test for, and estimate, both the long- and short-run relationships between the variables. Unlike other cointegration methods, the ARDL approach is the most suitable for testing the long-run relationship among the variables when it is not known with certainty whether the regressors are purely I(0), purely I(I) or mutually cointegrated, as long as none of the regressors is integrated of order two (De Vita and Abbott, 2002). Fousekis et al. (2016) highlight several advantages of the ARDL approach to cointegration testing. It performs better in small samples compared to alternative multivariate cointegration procedures and is more efficient than the standard Engle and Granger two-step approach.

Pesaran et al. (2001) show that the null of 'no cointegration', i.e. H_0: $\theta_1 = \theta_2 = \theta_3 = \theta_4 = 0$ against the alternative hypothesis H_1: $\theta_1 \neq \theta_2 \neq \theta_3 \neq \theta_4 = 0$, can be tested by employing a modified F-test. Alternatively, the t-BDM test proposed by Banerjee et al. (1998), which tests the null of no cointegration $\rho = 0$ against the alternative $\rho < 0$, can be employed. The test procedure involves an upper bound and a lower bound. If the estimated value of the modified F or t-BDM statistic exceeds the upper critical bound then the null is rejected (i.e., y_t and x_t are cointegrated), if it lies below the lower critical bound the null cannot be rejected (i.e., y_t and x_t are not cointegrated), and if it lies between the critical bounds the test is inconclusive.

In terms of model selection, we apply the Akaike Information Criterion (AIC) rather than the Schwarz information criterion (SIC) since although by leading to lower order models for forecasting the latter has been found to be preferable judged on its ability to predict future values of the time series (see, e.g., Koehler and Murphree, 1988), if the chief objective is to explain the nature of the system generating the series – as in our case - the AIC is preferable given that SIC is stricter than AIC in penalising loss of degrees of freedom.

Table 6.3 presents the estimated values of the F and t-BDM statistics of all the models at the 1%, 2.5%, 5% and 10% level of significance. For the models relating to the first hypothesis (that is, models 6.1 to 6.3), the test statistics exceed the upper critical bounds at the 10% level of significance in the total export and the oil export models. However, for the non-oil export model, the t-BDM and F statistics fall below the lower critical bound value at the customary significance levels. We, therefore, conclude that there exists no long-run relationship between non-oil exports and the independent variables in the model.

There are possible reasons why there may be no cointegrating relationship between both aggregate and disaggregated FDI and non-oil exports in Nigeria. First, although FDI, especially FDI in the manufacturing sector, may be - at least in theory - expected to boost exports either through the exports of the MNE's affiliates or spillovers on the export capacity of domestic firms, the size of the investment and the motivation of the foreign investors matter in determining the impact of FDI on exports. If the level of FDI into the manufacturing sector is low, or the motivation for FDI is purely resource or market seeking or there are only a few linkages between the domestic firms and manufacturing FDI, then it is possible that even manufacturing FDI may not have any long-run relationship with non-oil exports.

Table 6.3: Bounds testing for cointegration (equations 6.1-6.3)

	Aggregate FDI					
	Total Export (1)		*Oil Export (2)*		*Non-Oil Export(3)*	
F-statistic	4.209		4.060		1.110	
	Critical Value (Pesaran et al. 2001) Bounds					
Significance	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound
10%	2.97	3.74	2.97	3.74	2.97	3.74
5%	3.38	4.23	3.38	4.23	3.38	4.23
2.5%	3.8	4.68	3.8	4.68	3.8	4.68
1%	4.3	5.23	4.3	5.23	4.3	5.23
t-BDM	-3.911		-3.924		-1.090	
	Critical Value (Pesaran et al. 2001) Bounds					
Significance	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound
10%	-3.13	-3.84	-3.13	-3.84	-3.13	-3.84
5%	-3.41	-4.16	-3.41	-4.16	-3.41	-4.16
2.5%	-3.65	-4.42	-3.65	-4.42	-3.65	-4.42
1%	-3.96	-4.73	-3.96	-4.73	-3.96	-4.73

6.2.6 Long-run and short-run estimation by the ARDL approach

Having confirmed the presence of a long-run relationship from the cointegration test and armed with a highly reassuring set of diagnostic test results, the short-run and long-run elasticities are estimated. Table 6.4 presents the estimates of the long-run relationships and of the error correction models (ECMs) of our cointegrating models (we, therefore, do not report the non-cointegrating models of equations 6.3).

The empirical results support the idea that FDI has different effects on different export categories. The cointegration tests suggest that there is a long-run relationship between aggregate FDI and oil export, however, we do not find evidence of a long-run relationship with non-oil export. The distinction between oil and non-oil exports was necessitated by the fact that oil plays a significant role in Nigeria's economy. A large portion of Nigeria's inward FDI goes to the oil sector and the sector's exports make up a large percentage of the total exports (Olayiwola and Okodua, 2013). Hence, it is not surprising that there will exist a long-run relationship between FDI and oil exports.

Looking at Table 6.4, in the first two models (6.1 and 6.2) pertaining to our first hypothesis (whether aggregate inward FDI has a positive effect on the volume of total exports and oil exports in Nigeria), we find that total FDI has a positive and highly statistically significant long-run relationship with both total exports as well as oil exports with estimated coefficients of 1.150 and 1.209, respectively. This is consistent with our *a priori* expectation that the inflow of FDI will increase the volume of exports in the host economy. This result is supported by the similar findings of Wang et al. (2007) for China, and Leichenko and Erickson (1997) for the U.S.

We also find that the estimated REER coefficient in both the total and oil export models, is not statistically significant, suggesting that in the case of Nigeria the exchange rate does not play a significant role in export performance. Contrary to *a priori* expectations, our results also suggest that there exists a long-run negative relationship between GDP and both total exports and oil exports, with highly statistically significant coefficients of -3.679 and -3.828, respectively. Dodaro (1993) argues that this may be because an increase in GDP could boost aggregate domestic demand, which in turn may make firms focus more on the domestic market

and less on international trade. This explanation bears relevance in the context of Nigeria, which is a very large and highly populated country. Also, in their analysis covering over 90 countries, Anwer and Sampath (2001) found that the relationship between GDP and exports, while positive in many countries, is negative for less developed economies.

The associated ECM results are presented in Panel B of Table 6.4. The short-run coefficients suggest that FDI has a short-run positive impact on total exports and oil exports while REER and GDP do not have a significant impact on total or oil exports in the short run. The Error Correction Term (ECT) of -0.569 and -0.543 for the total export and oil export models, respectively, are statistically significant and suggest that it takes just short of two years for the adjustment from short-run disequilibrium to long-run equilibrium to be achieved.

Table 6.4: Error correction and cointegration models

Panel A: Long-run coefficients		
Aggregate FDI		
Variable	Total Export (1)	Oil Export (2)
LNREER	-0.098	-0.117
	(0.681)	(0.652)
LNGDP	-3.679***	-3.828***
	(0.000)	(0.000)
LNFDI	1.150***	1.209***
	(0.001)	(0.002)
C	41.637***	41.211***
	(0.000)	(0.000)
Panel B: Short-run coefficients		
Variable	Total Export (1)	Oil Export (2)
D(LNREER)	-0.129	-0.144
	(0.431)	(0.392)
D(LNGDP)	0.008	0.073
	(0.992)	(0.938)
D(LNFDI)	0.251**	0.254*
	(0.048)	(0.051)
ECT(-1)	-0.569***	-0.543***

	(0.000)	(0.000)
Diagnostics		
SC	0.299 (0.589)	0.337 (0.566)
HETER	1.377 (0.254)	1.261 (0.306)
NORM	1.162 (0.559)	0.953 (0.620)

Notes: Probabilities values are presented in parenthesis. ***, ** and * denote the rejection of the null hypothesis of a unit root at the 1%, 5% and 10% significance level, respectively. The optimal lag structure is selected by AIC, starting with max 2 lags. SC denotes the Breusch and Godfrey serial correlation test, HETER denotes the Breusch and Pagan heteroscedasticity test, and NORM denotes the Jarque–Bera test for normality.

The results for the bound test, the Breusch (1978) and Godfrey (1978) serial correlation test and the Breush and Pagan (1979) heteroscedasticity test are presented in Table 6.4. Reassuringly, the diagnostic tests also suggest that there is no serial correlation or heteroscedasticity and that the variables included in the ARDL model specification are normally distributed. Furthermore, the graphs of the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMQ) diagnostic test for model stability, presented in Figure 6.1 to 6.6, show that the there is no evidence of parameter instability.
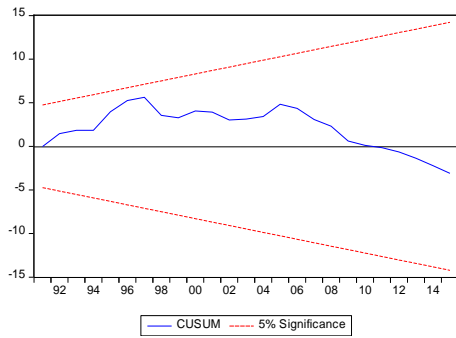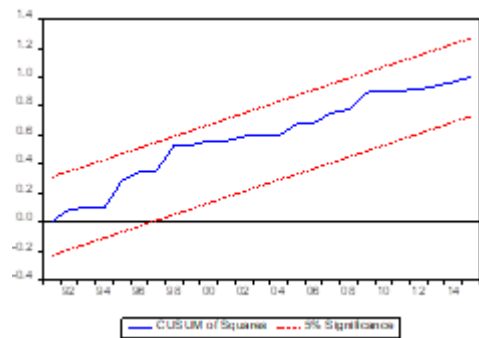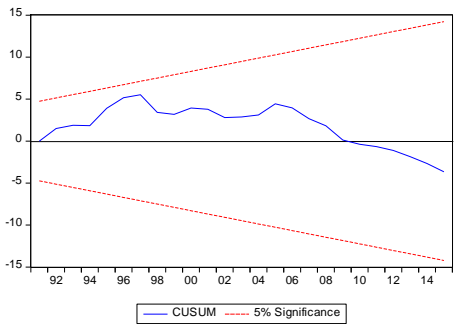
Figure 6.1

Figure 6.2

Figure 6.3
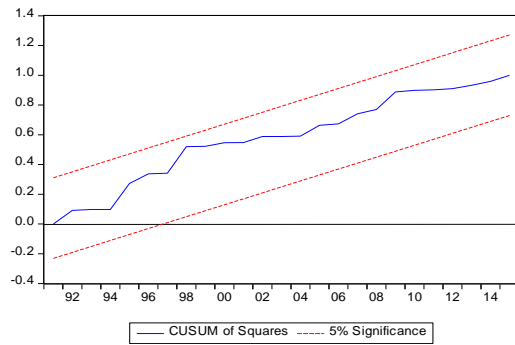
Figure 6.4
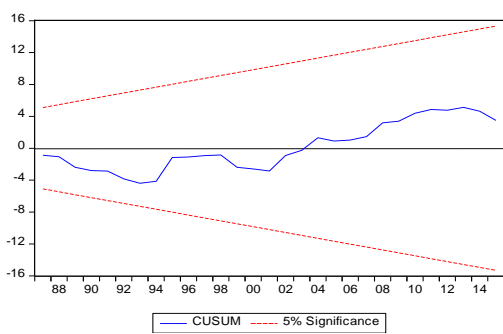
Figure 6.5
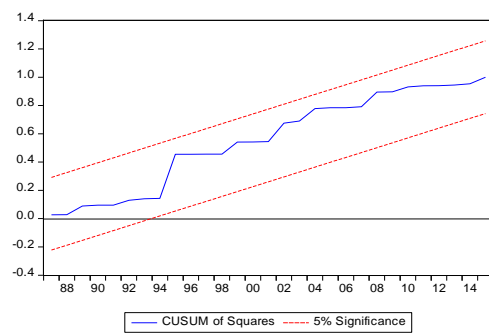
Figure 6.6

6.3   Econometric analysis of the direct effect of disaggregated FDI on exports

In the previous section, the impact of aggregate FDI on total exports and disaggregated exports was analysed. We proceed further here by examining the impact of sectoral FDI on export categories. As pointed out in the theoretical discussion, the type of FDI that a country or sector receives determines the type of impact the FDI will have on the economy. For example, a resource-seeking FDI (typically FDI in the primary sector) tends to have the least impact on the productivity of an economy – because of fewer linkages — yet, it is, in many cases, export-oriented. Also, there is evidence that manufacturing FDI tends to have the most impact on the host country's productivity (Moran et al., 2005), yet its impact on exports is dependent on the motivation of the FDI — whether it is market-seeking or seeking an export platform. Consequently, in this section, we analyse how sectoral FDI affects different export categories. The second hypothesis of this study is aimed at quantifying the effect of these sectoral FDI flows. The results of the analysis are presented in the sections below.

6.3.1   Data description

To carry out this empirical analysis, annual time series data of Nigeria's macroeconomic variables from 1981 to 2009 are employed. Once again, the choice of the time scale is determined by the earliest and latest year for which data on all the individual variables are available. These data have been collected from different sources including the Central Bank of Nigeria (CBN) statistical bulletins, the Nigeria Bureau of Statistics (NBS) and the World Development Indicators (WDI) database of the World Bank. For a more detailed description of each variable and their source, refer to Table 6.1.

6.3.2 Model Specification

Hypothesis 3: *The impact of FDI on exports is dependent on the sector that receives the FDI*

$$lnTEXP_t = \beta_0 + \beta_1 \, lnPFDI_t + \beta_2 \, lnMFDI_t + \beta_3 \, lnSFDI_t + \beta_4 \, lnREER_t + \beta_5 \, lnGDP_t + \mu_t \quad (6.4)$$

$$lnOEXP_t = \beta_0 + \beta_1 \, lnPFDI_t + \beta_2 \, lnMFDI_t + \beta_3 \, lnSFDI_t + \beta_4 \, lnREER_t + \beta_5 \, lnGDP_t + \mu_t \quad (6.5)$$

$$lnNEXP_t = \beta_0 + \beta_1 \, lnPFDI_t + \beta_2 \, lnMFDI_t + \beta_3 \, lnSFDI_t + \beta_4 \, lnREER_t + \beta_5 \, lnGDP_t + \mu_t \quad (6.6)$$

where:

$lnPFDI_t =$ Natural log of Primary Sector FDI

$lnMFDI_t =$ Natural log of Manufacturing sector FDI

$lnSFDI_t =$ Natural log of Service FDI

Besides the variables defined above, the remaining dependent and independent variables are identical to those in equations 6.1 to 6.3.

6.3.3 Unit root tests

Given that this hypothesis is for a shorter sample period, a new unit root test is carried out on all the variables. The results are presented in Table 6.5. From the table, we see that all the variables are stationary at the 10 percent significance level.

Table 6.5: Ng-Perron (2001) and ADF unit root tests

6.3.4   ARDL cointegration results

The results of the bounds test for the three models are presented in Table 6.6. As seen from the table, the F-statistics and the *t*-BDM statistics of the bounds tests exceed the upper critical bounds at the one percent level of significance in the total exports model and the oil exports model. This indicates the presence of cointegration in the two models. However, as in the previous hypothesis, in the non-oil exports model, the F-statistic and the *t*-BDM statistics fall between the lower and upper critical bound values, therefore, we cannot conclude that there exists a long-run relationship between the dependent variable and the independent variables.

The results of the bound tests suggest that there exists a long-run relationship between the independent variables and the dependent variables in all the models except the non-oil export model. The coefficients of the long-run parameters suggest that there is no significant relationship between the different sectoral FDI (in this case, primary sector, manufacturing sector and service sector FDI) and non-oil exports. This result confirms our previous findings that suggest that aggregate FDI does not have any statistically significant impact on non-oil exports. This finding that none of the sectoral FDI has a statistically significant positive effect on non-oil exports goes against our a priori expectation as we expect that, even if primary sector FDI does not influence non-oil exports, manufacturing FDI (and in some cases, service sector FDI) will boost the export of non-oil products. Although this result is surprising, it is not farfetched. If the level of FDI into the manufacturing sector is low, or the motivation of FDI is purely market seeking or the manufacturing FDI has few linkages with domestic firms, then it is possible that manufacturing FDI may not have any significant impact on non-oil exports.

Other diagnostic tests for normality, heteroscedasticity and serial correlation suggest that the models are normally distributed and do not suffer from serial correlation nor heteroscedasticity. Also, the models do not appear to suffer from parameter instability, as is evident from the plots of the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMQ).

Table 6.6: Bounds testing for cointegration (equations 6.4 – 6.6)

Sectoral FDI					
Total Export		*Oil Export*		*Non-Oil Export*	
7.081		7.148		1.122	
Critical Value (Pesaran et al. 2001) Bounds					
I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound
2.58	3.86	2.58	3.86	2.58	3.86
3.12	4.61	3.12	4.61	3.12	4.61
4.54	6.37	4.54	6.37	4.54	6.37
2.58	3.86	2.58	3.86	2.58	3.86
-5.926		-5.914		-2.477	
Critical Value (Pesaran et al. 2001) Bounds					
I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound
-2.57	-3.86	-2.57	-3.86	-2.57	-3.86
-2.86	-4.19	-2.86	-4.19	-2.86	-4.19
-3.13	-4.46	-3.13	-4.46	-3.13	-4.46
-3.43	-4.79	-3.43	-4.79	-3.43	-4.79

6.3.5 Long-run and short-run relationship

After carrying out the bounds test of cointegration and other diagnostic tests, we proceed to estimate the long-run and short-run coefficients of the variables in the three models. The results are displayed in Table 6.7. Since we do find evidence of a cointegrating relationship between non-oil export and sectoral FDI, we do not report the long-run and short-run coefficients of the model.

Our interest centres on the estimated long-run coefficients, which suggest that it is only primary sector FDI (LNPFDI) and manufacturing sector FDI (LNMFDI) that have a positive and statistically significant long-run impact on both total exports and oil exports. The effect is much more significant (at the 1% level) and more pronounced for LNMFDI, with an estimated coefficient of 1.486 and 1.526 in the total and oil export model, respectively. It is somewhat surprising that primary sector FDI has a positive long-run effect on total exports and oil exports only at the 10% significance level, with a coefficient of a smaller magnitude than

manufacturing sector FDI given that the oil sector receives the greatest share of primary sector FDI, and it is well documented that FDI in the primary sector in developing countries is usually export-oriented (see Hirschman, 1958; Alfaro, 2003). However, the much higher and more significant elasticities for manufacturing sector FDI may be explained by the fact that manufacturing FDI helps in facilitating or constructing infrastructure that facilitates exports of all commodities as well as oil (Aitken et al., 1997). This is probably the case from our data, as our results suggest that, in the case of Nigeria, manufacturing FDI has a strong positive effect on total exports in general, and oil exports in particular (though not for non-oil exports, which did not bear a cointegrating relationship).

The coefficient of service sector FDI (LNSFDI), on the other hand, suggests that there is no statistically significant long-run relationship between service sector FDI and total exports or oil exports (though the short-run coefficients are significant with a negative and positive effect in the total and oil export models, respectively). This result is not farfetched given that the service sector is still relatively underdeveloped in Nigeria. The estimated long-run REER coefficient is still negative but now statistically significant at the 10% level in the total and oil export model, while the estimated long-run GDP coefficient is statistically insignificant in the two models.

Taken together, our results suggest that while aggregate FDI has a positive long-run relationship with total exports in Nigeria, when disaggregated by export categories this relationship is significant only for oil exports. Moreover, when total FDI is disaggregated into sectors, the FDI-export nexus holds for primary and manufacturing FDI targeted at oil exports, not for non-oil exports. Services sector FDI does not bear any long-term relationship with Nigerian exports, whether oil or non-oil.

Table 6.7: Error correction and cointegration models

Panel A: Long-run coefficients

	Sectoral FDI	
Variable	Total Export (4)	Oil Export (5)
LNREER	-0.303*	-0.292*
	(0.060)	(0.073)
LNGDP	-0.5693	-0.648
	(0.544)	(0.497)
LNPFDI	0.268*	0.258*
	(0.070)	(0.085)
LNMFDI	1.486***	1.526***
	(0.000)	(0.000)
LNSFDI	-0.300	-0.306
	(0.242)	(0.240)
C	7.785	9.493
	(0.711)	(0.657)

Panel B: Short-run coefficients

Variable	Total Export (4)	Oil Export (5)
D(LNREER)	-0.226*	-0.217*
	(0.074)	(0.091)
D(LNGDP)	-0.503	-0.521
	(0.463)	(0.454)
D(LNPFDI)	-0.012	-0.011
	(0.851)	(0.864)
D(LNMFDI)	1.142***	-0.230***
	(0.000)	(0.005)
D(LNSFDI)	-0.624***	1.164***
	(0.003)	(0.000)
ECT(-1)	-0.903***	-0.633**
	(0.000)	(0.004)

Diagnostics

SC	2.179 (0.147)	2.1834 (0.147)
HETER	1.017 (0.464)	1.033 (0.454)
NORM	0.352 (0.838)	0.298 (0.861)

Notes: Probabilities values are presented in parenthesis. ***, ** and * denote the rejection of the null hypothesis of a unit root at the 1%, 5% and 10% significance level, respectively. The optimal lag structure is selected by AIC, starting with max two lags. SC denotes the Breusch and Godfrey serial correlation test, HETER denotes the Breusch and Pagan heteroscedasticity test, and NORM denotes the Jarque–Bera test for normality.

6.4 Econometric analysis of the indirect of FDI on export performance of domestic firms

Our earlier analyses have focused on examining the impact of FDI on export performance at the sectoral and national level. In this section, we conduct a micro-econometric analysis of the impact of FDI on the export performance of domestic firms (*Hypothesis 3*). As elaborated in depth in earlier chapters, theories of FDI spillover suggest that the effect of FDI on host country exports is not limited to the export activities of the foreign firms' subsidiaries. FDI can indirectly affect the impact of the host country's exports through different channels (for a fuller discussion, refer to the literature review). Hence, in this section, we test the last hypothesis of this study, which is aimed at investigating the impact of foreign-owned firms on the export performance of domestically-owned firms.

6.4.2 Model Specification

Hypothesis 3: *FDI increases the export performance of domestic firms via indirect spillover effects*

To estimate the effect of foreign presence on the export performance of domestic firms, we follow Kneller and Pisu (2007) and Greenaway et al. (2004) and model firms' exporting process as a process involving two steps: the decision to export and the proportion of total output to sell abroad. As a result of the sunk costs involved in entering the export market, firms first make the decision to bear this cost and enter the market, before deciding on the proportion of their output to export. To model this relationship, we estimate two equations.

$$Expdec = \beta_0 + \beta_1 Fspill_{it} + \beta_2 Age_{it} + \beta_3 Age^2{}_{it} + \beta_4 Turn_{it} + \beta_5 Emp_{it} + \beta_6 Exper_{it}$$
$$+ \beta_7 Controls_{it} + \mu_t \qquad\qquad (6.7)$$

$$Expint = \beta_0 + \beta_1\,Fspill_{it} + \beta_2 Age_{it} + \beta_3 Age^2{}_{it} + \beta_4 Turn_{it} + \beta_5 Emp_{it}$$
$$+ \beta_6\,Controls_{it} + \mu_t \qquad\qquad\qquad (6.8)$$

Subscripts i and t represent firm and time.

We estimate this model using the Heckman selection model, which allows us to estimate whether there has been a sample selection bias among firms that choose to enter the export market. By adopting the technique, we are able to analyse the impact of foreign-owned firms on all firms in the sample, not only on the firms that enter the export market. If the correlation between the error term of the two equations ρ is statistically different from zero, then an OLS and probit technique would not be appropriate.

Variables

The dependent variable in the first equation *Expdec* is a proxy for firms' decision to export. It is a dummy variable, which takes the value of 1 when firm i exports, and 0 when it does not. The second dependent variable measuring firms' export performance is *ExpInt*, which measures firms' export intensity. This variable captures the percentage of a firm's output that it exports.

Firm-specific variables

We include several firm-specific variables to capture the heterogeneity of firms. The variable Age_{it} is measured as the year of the survey minus the year the firm began operations. Age squared ($Age^2{}_{it}$) is included to allow for a nonlinear relationship between age of the firm and export performance. The variable *TURN* is a measure of the annual sales of the firms. This variable is to control for the influence of a firm's size/productivity on their export performance. There is also evidence that suggests that the attributes of business managers may influence the export performance of firms. The variable *EXPER* is measured as the years of experience that the managers of the firms have in the line of business. In order to control for possible sample selection, we include the variable *EXPER* only in the export decision equation. It is reasonable to expect that the experience of managers may influence the decision of firms to enter the export market, while the proportion of their total output to export would be affected by other firm-specific characteristics.

FDI Spillover variable

In this analysis, we examine the horizontal export spillover from foreign firms (we are unable to assess vertical export spillover due to data unavailability). We create an index for capturing the presence of foreign firms in each sector. Following Kneller and Pisu (2007) and Greenaway et al. (2004) and Kinuthia (2016), we compute the horizontal foreign presence as:

$$Horizontal\ FDI\ presence = \frac{\sum Y_{jt}^f}{\sum Y_{jt}}$$

where Y is the total output of sector j at time t. Meanwhile, Y^f represents the output of foreign firms. The horizontal FDI presence variable indicates the share of the total output in industry j that is produced by foreign firms. An increase in this variable indicates that foreign firms are expanding their output relative to domestic firms, or that domestic firms have reduced output.

6.4.1 Data description

For this micro-econometric analysis, we employ firm-level data from the World Bank Enterprise Survey (WBES). This survey is part of a World Bank's project based on collecting firm-level data in 135 countries, and currently covers over 130, 000 firms. The data we obtain for Nigeria is an unbalanced panel data set covering three waves of the survey: 2007, 2009 and 2014. The sample of firms for Nigeria is based on the international standard of industrial classification (ISIC) revision 3.1 and comprises firms from the non-agricultural economy. It includes firms from all manufacturing sector, construction sector and service sectors (the service sector excludes the financial intermediation, renting activities and real estate sectors). The 2007 and 2009 waves of the survey cover 26 States of the country, whereas the 2014 wave covers 19 States[15]. The survey sample was also selected using a stratified random sampling in order to get an unbiased estimate of the whole population. Information in the survey includes data on the structure of ownership, year of establishment, direct and indirect exports, the volume of annual output, and the experience of managers.

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[15] Because of the high attrition rate of the firms included in the surveys, we use the unbalanced panel as a pooled cross-sectional data.

To distinguish between foreign and domestic firms, we follow the literature and classify a firm as foreign if the share of ownership in the firm is up to 10% (as done, for example, in OECD, 1996; and Kimura and Kiyota, 2007).

Table 6.8 provides further information on the characteristics of the domestic firms and foreign firms and Table 6.9 the correlation matrix.

Table 6.8: Descriptive Statistics

Domestic firms					
Variable	Obs	Mean	Std.Dev.	Min	Max
ExpInt	7497	3.48	15.352	0	100
Expdec	7497	.068	.252	0	1
Age	7603	13.31	9.98	1	168
Age^2	7603	276.749	595.318	1	28224
Turn	7352	15.586	1.889	9.616	27.631
Emp	7723	21.426	75.791	1	3500
Exper	7672	11.492	8.049	0	60
Foreign firms					
Variable	Obs	Mean	Std.Dev.	Min	Max
ExpInt	341	37.015	33.932	0	100
Expdec	341	.642	.48	0	1
Age	369	20.07	19.586	1	157
Age^2	369	785.409	2042.338	1	24649
Turn	341	15.76	3.319	9.952	26.528
Emp	373	131.391	529.275	2	5000
Exper	370	11.681	8.396	1	54

Table 6.9: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)Expint	1.000								
(2)Expdec	0.860	1.000							
(3)Age	0.071	0.105	1.000						
(4)Age2	0.054	0.082	0.820	1.000					
(5)Fspill	0.039	0.047	0.125	0.058	1.000				
(6)Forshare	0.206	0.223	0.130	0.152	0.052	1.000			
(7)Turn	-0.137	-0.098	0.158	0.111	0.149	0.078	1.000		
(8)Emp	0.043	0.090	0.229	0.256	0.089	0.138	0.239	1.000	
(9)Exper	0.045	0.065	0.557	0.324	0.109	0.014	0.062	0.101	1.000

6.4.3   Discussion of the empirical results

As discussed in the previous chapter, we adopt the Heckman selection model in order to correct for sample selection bias. By employing the Heckman model, we can analyse the impact of foreign-owned firms on all firms in the sample, and not only on the firms that export.

It would have been ideal to model both the horizontal and vertical spillover effect of foreign-owned firms on domestically-owned firms. However, our data do not contain sufficient information about other potential spillover channels such as research and development, capital intensity, skills and service support from foreign firms to domestically-owned local firms. As a result, we focus only on horizontal spillover channel.

The Heckman selection model can be estimated either via the maximum likelihood (ML) technique or the standard two-step procedure. We estimated the two equations jointly using the ML technique. Kneller and Pisu (2007) argue that this technique is more efficient than the two-step method. The results of the models are presented in Table 6.10 below.

In the export decision equation (column 2), we find evidence of horizontal FDI spillover. The coefficient of the FDI spillover index is positive and statistically significant. This suggests that the presence of foreign firms in a sector increases the probability that domestic firms might venture into the export market. The coefficients for firm characteristics such as age and turnover are statistically insignificant. Although we expect older and larger firms to be more likely to export, this does not appear to be the case in Nigeria, as age and size of turnover do not appear to affect the exporting decision of domestic firms. Also, the number of employees a firm has, another measure of size, appears to have little effect on exports. Although the coefficient is positive and statistically significant, its effect is economically insignificant. Experience of managers is another variable that influences the export decision of domestic firms. The results show that experienced managers increase the possibility that domestic firms will export.

When domestic firms export, they also make a decision on the ratio of their output that will go abroad. Column (1) presents the result of factors that influence the export-to-sales ratio of domestic firms. The coefficient of our variable of interest, FDI spillover index, is not statistically significant. This result implies that although the presence of foreign-owned firms in a sector may increase the probability of domestic firms exporting, it does not have any significant impact on the export intensity of the domestically-owned firms in the same sector. This may be due to several factors. First, where the linkages between the foreign firms and domestic firms are limited, the possibility of a horizontal spillover is minimised. And of course, the problem of minimal linkages with foreign firms is more pronounced in developing countries like Nigeria. Also, there is evidence in the literature that points to the fact that vertical spillovers are more likely to occur than horizontal spillovers. As Javorcik (2004, p. 606) succinctly puts it, "…*multinationals have an incentive to prevent information leakage that would enhance the performance of their local competitors, but at the same time may benefit from transferring knowledge to their local suppliers*". Furthermore, while it is possible that domestic firms may decide to enter the export market due to information externality from foreign firms, the proportion of their output to export may be unaffected by the presence of foreign firms. Finally, as pointed out earlier, foreign firms may, through several spillover channels, improve the export value/volume of domestic firms without necessarily improving their export-to-sales ratio. A firm's export value/volume may increase due to increase in productivity. However, if such increase in productivity leads to a proportionate increase in both domestic and international sales, the firm's export-to-sales ratio remains unchanged.

We also find that the coefficient of the variable *Age* is not statistically significant. The coefficient of the firm output variable *TURN* is negative and statistically significant, thereby suggesting that an increase in firms' output does not increase domestic firms' export-to-sales ratio. This result is similar to the findings of Ahmed and Rock (2012) that there may exist a negative relationship between a firm's productivity and export. This result may be because the large firms may decide to consolidate on the domestic market, without increasing their export-to-sales ratio. Furthermore, we find that although the coefficient of the variable *Emp* is statistically significant, it has little economic significance with a reported estimated coefficient of very low magnitude. This can be interpreted to mean that the number of employees in domestic firms has little impact on the decision of the firm to enter into the international market and the proportion of output to export.

Table 6.10: Impact of FDI presence on domestic firms' export performance (Heckman Selection Model)

Variables	(1) Export intensity	(2) Export decision
Age	0.0843 (0.22)	0.00302 (0.57)
Age2	-0.00577 (-0.91)	-0.0000311 (-0.61)
FDI spill	80.04 (0.81)	6.281** (3.87)
Emp	-0.00780 (-1.64)	0.000763** (3.60)
Turn	-2.181** (-2.64)	0.00133 (0.09)
Exper		0.00804^{+} (1.89)
Industry Dummies	Yes	Yes
Size Dummies	Yes	Yes
Year Dummies	Yes	Yes
_cons	69.48* (2.00)	3.419** (54.61)
N	6992	6992

Notes: Robust Standard Error in parentheses. $^{+} p < 0.1$, $^{*} p < 0.05$, $^{**} p < 0.01$

Impact of foreign equity on the export performance firms.

To further test the impact of foreign ownership on firms' export performance, we examine the impact of the share of foreign ownership on the export performance – export decision and intensity—of all firms in the sample, domestic and foreign-owned.

$$Expdec = \beta_0 + \beta_1 ForShare_{it} + \beta_2 Age_{it} + \beta_3 Age^2{}_{it} + \beta_4 Turn_{it} + \beta_5 Emp_{it}$$
$$+ \beta_6 \, Controls_{it} + \mu_t \qquad\qquad (6.9)$$

$$ExpInt = \beta_0 + \beta_1 ForShare_{it} + \beta_2 Age_{it} + \beta_3 Age^2_{it} + \beta_4 Turn_{it} + \beta_5 Emp_{it}$$
$$+ \beta_6 Exper_{it} + \beta_7 Controls_{it} + \mu_t \qquad (6.10)$$

Table 6.11: Impact of foreign ownership on firms' export performance (OLS and Probit regressions)

Variables	(1) Export Intensity	(2) Export decision
Age	-0.0443	-0.000510
	(-1.38)	(-0.11)
Age2	0.000176	0.00000603
	(0.39)	(0.13)
Foreign	0.266**	0.0172**
	(13.79)	(9.95)
Emp	-0.00129	0.000122
	(-0.92)	(0.96)
Turn	-0.735**	-0.0120
	(-6.47)	(-0.91)
Exper		0.00595
		(1.63)
Industry Dummies	Yes	Yes
Size Dummies	Yes	Yes
Year Dummies	Yes	Yes
cons	12.51**	-1.902**
	(7.07)	(-8.81)
N	7344	7280
R^2	0.185	

Notes: Robust Standard Error in parentheses. $^+ p < 0.1$, $^* p < 0.05$, $^{**} p < 0.01$

The variables in equations 6.9 and 6.10 are the same as the variables in equations 6.7 and 6.8, with the exception of our variable of interest $ForShare$, which measures the percentage of a firm's equity owned by foreign investors.

The result, as shown in Table 6.11, indicates that an increase in foreign ownership increases the export performance of firms. The variable $ForShare$ is positive and statistically significant in both the export decision and export intensity equations, suggesting that an increase in the foreign equity share increases the probability that a firm will enter the export market and also the proportion of the firm's output that they decide to export. This result is consistent with the finding of Abor et al. (2008) for Ghana.

Other factors such as the age of the firm, turnover, and experience of the manager are not statistically significant in the two equations. Similar to the finding in the previous analyses, the coefficient of turnover is negative and statistically significant which suggests that an increase in firms' output may decrease their export intensity.

6.5   Further Discussion of the results

In Table 6.12 below, the three hypotheses of this study are restated and the main findings presented.

Table 6.12 Summary of Results						
Hypothesis	Findings					
1. The impact of aggregate FDI differs across export categories		LR		SR		
	Total	+		+		
	Oil	+		+		
	Non-oil	*		*		
2. The impact of sectoral FDI differs across export categories		PFDI		MFDI		SFDI
		LR	SR	LR	SR	LR	SR
	Total	+	*	+	+	*	+
	Oil	+	*	+	+	*	+
	Non-oil	*	*	*	*	*	*
3. The impact of foreign firms on the export performance of domestically-owned firms.		Export Decision		Export Intensity		
		+		*		
Notes: + represents positive. – represents negative. * represents insignificant.						

In the first hypothesis of the study, we find that total FDI has a positive and statistically significant long-run relationship with total exports. This is consistent with our a priori expectation as we expect that the inflow of more FDI will increase the export capacity of the host economy through the export activities of the foreign firms or by boosting the productive capacity of the host economy. This result is consistent with the findings of Wang et al. (2007) for China and Leichenko et al. (1997) for the US. We also find that the coefficient of REER is not statistically significant, suggesting that the exchange rate does not have a statistically significant relationship with total exports. Contrary to our a priori expectation, our results suggest that there exists a long-run negative relationship between GDP and total exports. Dodaro (1993) argues that this could be because an increase in GDP could boost aggregate domestic demand, which in turn may make firms focus more on the domestic market and less on international trade. In the analysis of over 96 countries, Anwar and Sampath (2001) found that the relationship between GDP and exports, while positive in many of the countries, is negative for less developed economies.

When exports are disaggregated into categories in the second hypothesis, we obtain a more nuanced result on the effect of total FDI. As mentioned earlier, given the prominent position of the oil sector in Nigeria's economy, it seems reasonable to disaggregate export categories between oil exports and non-oil exports. In our empirical analysis, we find that while aggregate (total) FDI has a positive and statistically significant long-run relationship with oil exports, we do not find any evidence that the relationship between total FDI and export is statistically significant. There are good explanations for why the relationship between FDI and non-oil exports in Nigeria is insignificant. First, although FDI, especially FDI in the manufacturing sector, is - at least in theory - expected to boost exports either through their own exports or by boosting the export capacity of domestic firms, the size and the motivation of the foreign investors matter in determining their impact. If the level of inward FDI is low, it is possible that it may not have a significant impact on non-oil exports. Similarly, even if the volume of the inward FDI is relatively high, if a large proportion of the FDI is resource-seeking or purely market-seeking, then it is likely that the FDI may not affect the non-oil exports positively.

To account for the heterogeneity of FDI effect, in the second hypothesis, we disaggregate FDI by sector and analyse the different sectoral impacts across different export categories. Similar

to the results we obtained in the first and second hypothesis, our bound tests for cointegration suggest that there exists a long-run relationship between the variables in the total exports model and the oil exports model, but we do not find evidence for the existence of a statistically significant relationship the non-oil exports model. From the estimated long-run and short-run equations we find that primary sector FDI and manufacturing sector FDI have a positive and statistically long-run relationship with total export and oil exports. The impact of service sector FDI on both the total export model and oil exports model is not statistically significant. Also, similar to the results we obtained for the previous hypotheses, REER appears to have a statistically insignificant effect in the two models, while GDP has a negative and statistically significant relationship with the dependent variable in the two models.

Taken together, what these results suggest is that while total FDI may have a positive effect on total export in Nigeria, this effect is significant only for oil exports. And when total FDI is disaggregated into sectors, only the primary sector FDI and Manufacturing FDI have a significant impact on oil exports. Hence, we can conclude that inward FDI (aggregate or disaggregated) in Nigeria does not boost the exports of the non-oil sector.

The third hypothesis is a microeconomic approach to analysing the effect of FDI on export performance in the host country. This approach is motivated by the fact that the effect of FDI on host country exports is not limited to the export activities of the foreign firms' subsidiaries but FDI can also have an impact on the host economy's exports by boosting the exporting capacity of domestically-owned firms. From our analysis, we find evidence of horizontal export spillover. Specifically, we find that the presence of foreign firms increases the probability that domestic firms will export. However, we do not find that the presence of foreign-owned firms affects the export intensity of domestically-owned firms.

6.6   Chapter summary

In this chapter, the impact of FDI on Nigeria's export performance was examined. We distinguished between the direct effect of FDI and the indirect effect of FDI through MNEs' host country affiliates. To examine the direct effect of FDI, we tested the effect of aggregate

and sectoral FDI on total and disaggregated exports. We outline the reasons why we expect different effects of aggregate and sectoral FDI on different export categories. Employing the ARDL bounds test cointegration technique, our empirical results show the varied effect of FDI. We find that aggregate FDI has a positive and statistically significant long-run relationship with total exports and oil exports. The evidence shows that there is no statistically significant impact of FDI on non-oil exports.

Also, when FDI is disaggregated by sector, we find a similar result. We find evidence that suggests the existence of a long-run relationship between sectoral FDI, total exports and oil exports. Again, we do not find evidence of a long-run relationship between non-oil exports and any of the explanatory variables. Having confirmed the presence of a long-run relationship, we find that both primary sector FDI and manufacturing sector FDI have a positive long-run relationship with total exports and oil exports. Service sector FDI, on the other hand, appears not to have a statistically significant long-run impact on either total exports or oil exports.

Next, we investigated the impact of foreign-owned firms on the export performance of domestically-owned firms. Due to the limitation of our data, we could not examine the inter-industry spillover of FDI, hence we focused on testing the intra-industry spillover effect. From our empirical analysis, we find that the presence of foreign firms in a sector appears to have a positive effect on the likelihood that domestic firms will export but, at the same time, does not have an effect on the proportion of output that domestic firms decide to export.

CHAPTER SEVEN

CONCLUSION

7.1   Chapter Overview

In this chapter, the conclusions of this thesis are presented. The next section summarises the key findings of the empirical analyses of this PhD study[16]. This is followed by a discussion of the contribution of these findings to the body of knowledge. The policy implications flowing from the findings are highlighted in the penultimate section. In the final section, the limitations of the study are discussed, and further potential extensions suggested.

7.2   Summary of findings

The primary aim of this research was to empirically investigate the impact of inward FDI on export performance in Nigeria at both aggregate and disaggregated level. In order to achieve the aim of the research, the following objectives, as stated in the 'Introduction' chapter (section 1.4, on p. 7), were set:

1. To conduct a comprehensive analysis of the Nigerian FDI and export position along with a thorough, up-to-date, critical review of relevant theoretical and empirical literature on the relationship between inward FDI and Nigerian exports;

2. To estimate the relationship between aggregate inward FDI and oil and non-oil exports in the Nigerian economy;

3. To empirically investigate the effect of disaggregated (sectoral) FDI on different export categories;

4. To empirically investigate the spillover effect of the presence of MNEs on domestically-owned manufacturing firms' exports;

5. To draw relevant policy implications.

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[16] Part of the original results presented in Chapter 6 underpins my article accepted for publication in Journal of Economic Studies, see Okechukwu et al. (2018).

In this section, we present a summary of the findings, structured according to each objective.

7.2.1 Objective 1 – *"To conduct a comprehensive analysis of the Nigerian FDI and export position along with a thorough, up-to-date, critical review of relevant theoretical and empirical literature on the relationship between inward FDI and Nigerian exports"*

The first objective of this study was to examine the evolution of FDI and exports in Nigeria and conduct a comprehensive review of relevant theoretical and empirical literature on the relationship between inward FDI and exports in order to inform our empirical analysis. This objective was comprehensively addressed in Chapter 2 ('Country profile'), Chapter 3 ('Review of the theoretical literature') and Chapter 4 ('Review of the empirical literature').

In this PhD thesis, we asked a crucial question underpinning this research: *Does inward FDI promote exports?* As concluded by our critical and thorough review of relevant literature, the answer to this question is neither obvious nor settled. Indeed, the way the question is framed may lead to answers that may not be very useful. Moran (2005) pointed out that the appropriate approach to getting a meaningful and policy-relevant answer to the above question is by asking: Which FDI? Which exports? Reframing the question this way underscores a crucial argument that we have developed in this thesis, that is, that there is a qualitative difference between the different types of FDI, and these differences determine the type and magnitude of the impact that FDI may have across different export categories. For example, primary sector FDIs to a developing country like Nigeria are often export-oriented and thus tend to have fewer linkages with the rest of the economy than, say, manufacturing and service sector FDI. These differences matter. Both for policy and academic theorisation. Yet, these analyses are absent in existing literature with respect to the experience of Nigeria. This is a significant gap that the work presented in this PhD thesis fills. In all the empirical analyses of this thesis, we account for these sectoral differences at a disaggregated level.

7.2.2 Objective 2 – *"To estimate the relationship between aggregate inward FDI and oil and non-oil exports in the Nigerian economy"*

The first *empirical* objective of this study (Objective 2 - see p. 7) was to examine the relationship between aggregate inward FDI and the volume of exports in the Nigerian economy from 1980 to 2015. To achieve this objective, we disaggregated exports into three categories: total exports, oil exports and non-oil exports. The focus of this analysis was to determine the effect of aggregate FDI across different export categories. Only a few previous studies have attempted to differentiate between oil exports and non-exports, with respect to how FDI's relationship with each category might differ (see, for example, Mohammed and Ekundayo, 2014; and Aigheyisi, 2016). Also, given that this is a time series analysis, we employ the ARDL cointegration technique, which is the most suitable technique for analysing the long-run relationship between variables in a multivariate model when their order of integration is not known with certainty *a priori*. The ARDL cointegration results suggest that a positive long-run relationship exists only between aggregate FDI and total exports. However, when export is subdivided into oil and non-oil exports, the ARDL cointegration results show that the long-run relationship between FDI and exports applies only to oil exports. There was no evidence that there is any long-run relationship between aggregate FDI and non-oil exports. Having confirmed the presence of long-run relationships in the total and oil exports models, the short-run and long-run elasticities were estimated. The results show that aggregate FDI has a positive and highly and statistically significant long-run relationship with both total exports and oil exports. In other words, we find that the inflow of FDI at the aggregate level is associated with increased total exports. However, when total exports are divided into oil and non-oil, the positive association between aggregate FDI and exports holds only for oil exports. There is no statistically significant relationship between aggregate FDI and non-oil exports.

7.2.3 Objective 3 – *"To empirically investigate the effect of disaggregated (sectoral) FDI on different export categories"*

The second *empirical* objective of this study (Objective 3, see p. 7) was to investigate the effect of *disaggregated* (sectoral) FDI on the volume of exports in Nigeria during the period 1981-2009. As argued extensively in this thesis, understanding the impact of sectoral FDI on different export categories is crucial to identifying the appropriate policy intervention.

Accordingly, in this study, FDI was divided into three broad sectors: primary sector FDI, manufacturing sector FDI and service sector FDI. Exports, on the other hand, is classified into total exports, oil exports and non-oil exports. The ARDL cointegration technique is also employed for this analysis. The results provide empirical support to the hypothesis that FDI, regardless of the sector, does not have any statistically significant effect on non-oil exports in Nigeria. The cointegration results indicate that there is cointegration (a long-run equilibrium relationship) in the total exports and oil exports models. However, we do not find evidence that there exists a long-run relationship between FDI and the independent variables in the non-oil export model. Having confirmed the presence of cointegration in the total and oil exports models, the long-run coefficients were estimated. The results suggest that primary sector FDI and manufacturing sector FDI have a positive long-run association with total exports and oil exports. We do not find evidence of a statistically significant long-run relationship between service sector FDI and total exports and oil exports. Taken together, these results suggest that when FDI is disaggregated by sector, only primary sector FDI and manufacturing sector FDI promote total exports. However, when exports are broken into oil and non-oil exports, these sectoral FDIs only promote oil exports, as the results show that they have no significant relationship with non-oil exports. This evidence suggests that despite the relatively high level of FDI that Nigeria attracts vis-à-vis other African countries, inward FDI has (and has had) no significant impact on Nigerian non-oil exports.

7.2.4 Objective 4 - *"To empirically investigate the spillover effect of the presence of MNEs on domestically-owned manufacturing firms' exports"*

Objective 4 (see p. 7) was to examine empirically the effect of FDI on domestic firms' export performance. Using firm-level survey data from the World Bank for the period 2007 to 2014, we investigated whether Nigerian local firms start to export and/or increase the intensity of their exporting when foreign firms enter the sector. This analysis of the indirect effect of FDI - also referred to as the spillover hypothesis - is important as it provides insights as to whether the contribution of FDI to the host country is as a result of the increased export activities of FDI by MNEs' affiliates or whether domestic firms themselves have increased their exporting capacity due to the presence and exporting activities of foreign-owned FDI firms. We model export performance as consisting of two distinct decisions: (i) the decision to enter the

international market; and (ii) the proportion of output to exports. The study found support for the existence of horizontal export spillover. The empirical results suggest that FDI presence increases the probability that domestic firms will export. However, FDI presence appears to have no effect on the export propensity or intensity of domestic firms.

7.2.5 Objective 5 - *"To draw relevant policy implications"*

The final objective of this PhD thesis (Objective 5, see p. 7), was to draw relevant policy implications. How this objective has been met, is best dealt with in a separate section. Accordingly, please see Section 7.4 (pp. 167-169) below solely devoted to 'Policy implications'.

7.3   Contributions to knowledge

The thesis made a number of contributions to the literature on the inward FDI-exports relationship. First, despite an increasing literature examining the effect of FDI on the host country's economy in general, and exports in particular, relatively few studies have examined this relationship in sub-Saharan African countries. This study makes a significant and novel contribution to this body of literature by examining the impact of inward FDI on exports, using the case study of Nigeria; one of Africa's top recipient of FDI and largest exporter. While the case of Nigeria may not be representative of the whole African experience, some characteristics of the Nigerian economy such as the excessive reliance on raw materials, a relatively underdeveloped manufacturing base and a large market, may provide some generalisable lessons for many African, and indeed, developing countries that share similar features.

Second, this study is the first to investigate the impact of FDI on exports in Nigeria, by employing sectoral FDI and disaggregated export data. Earlier studies such as Mohammed and Ekundayo (2014), Aigheyisi (2016), and Enimola (2011) have investigated the impact of FDI on export in Nigeria. Enimola (2011) explored this relationship by employing aggregate FDI and aggregate export data, while Mohammed and Ekundayo (2014) and Aigheyisi (2016) disaggregated export categories into oil and non-oil, accounting for the oil's oversized contributions to Nigeria's export. We went further than (beyond) these studies. As we argued

earlier, in order to make sense of FDI's contributions to exports, it is necessary to ask: which FDI? Which exports? We attempt to address this gap in the literature by employing sectoral FDI data, while also disaggregating exports into categories. We disaggregated FDI into primary sector, manufacturing sector FDI and service sector FDI, and investigated their impact across different export categories. Primary sector FDI in developing countries is mostly resource-seeking FDI, while service sector and manufacturing sector FDIs are either market-seeking or efficiency-seeking. Thus, by disaggregating FDI by sector, we are also able to infer how the 'FDI motivation' also affects its relationship with exports.

Also, in terms of methodology, this study is the first to apply the ARDL cointegration technique in analysing the relationship between inward FDI and exports in the Nigerian context. As we point out in our review of methodologies in Chapter 5, the ARDL cointegration technique is the most suitable for investigating the relationship between variables in a multivariate model, when they are integrated of different orders (so long as none of the variables is integrated of order 2 or higher).

Very few studies have examined the effect of FDI on domestic firms' exports in the African context. This strand of the literature has been scant partly because there is a dearth of granular and reliable firm-level data. However, recent business surveys by the World Bank have made available a detailed firm-level database that can be used to examine the interaction between foreign firms and domestic firms. This study was the first to make use of such data to the test the spillover effect in the context of developing countries and, in fact, the first to study how the presence of foreign firms affect the performance of domestic firms in the Nigerian context. This research provides insight into how the entry of foreign firms affects the export decision and export intensity of domestic (Nigerian) firms.

7.4   Policy implications

Having carried out the empirical analyses, the resulting findings have important policy implications that are worth highlighting.

First, this study's finding that FDI, regardless of the sector, does not promote non-oil exports may be an indication that Nigeria does not attract enough non-oil manufacturing FDI. Nigeria's

relatively large population of about 180 million and a monthly minimum wage of about £45 suggests that Nigeria has the potential to be an important manufacturing hub in the region. Emphasis on FDI promotion without distinction, or priority with respect to the type of FDI, does not produce the most desirable economic outcome, as our results suggest. Nigeria's FDI has been predominantly oil related, and as our study shows, despite the fact that previous empirical findings on this topic indicate that FDI promotes export, these mostly oil-related FDIs promote only oil exports, while non-oil FDI has had a negligible impact on non-oil exports. Thus, from a policy perspective, the efforts of Nigerian policymakers should refocus on attracting large manufacturing FDI that can take advantage of Nigeria's large market and supply of low-cost labour and raw materials.

Furthermore, there is a need to link Nigeria's economic strategies and industrial policies with FDI policies. A review of Nigeria's current economic plan titled 'Economic Recovery and Growth Plan 2017 – 2022' (hereafter ERGP) reveals little integration between FDI policies and industrial policies. If Nigeria will industrialise, given its current level of development and technological sophistication, then integrating FDI become crucial. FDI, as we have argued in this research, typically comes with a composite bundle of advantages that can benefit the host country. MNEs are the most powerful channel for the transfer of modern technologies, as they are often at the forefront of research and innovation, which typically makes them technologically more advanced and experienced than their domestic competitors. In the ERGP, the industrial strategy and diversification plans focus almost entirely on providing financial support to small- and medium-sized enterprises (SMEs). While this strategy is not misplaced, it is clearly insufficient. There is clear evidence in the literature that larger firms tend to be more productive, and tend to export more (see, for example, Lall and Mohammad, 1983). FDI firms are typically larger, often more productive and tend to export more. Hence, if the intended policy outcome is to reduce unemployment, increase domestic productivity and exports, then it is important to incorporate FDI into the industrial plans.

Another important contribution of FDI to industrial development is the possibility of spillover. If the conditions are right (including absorptive capacity in terms of education, infrastructure, financial development, etc.), SMEs in Nigeria are likely to benefit from positive externalities from FDI through their backward and forward linkages. Even smaller domestic firms within

166

the same industry can benefit from MNEs' affiliates due to information externality or through technological and managerial transfer through imitation or worker mobility. Many of the newly industrialised countries – for example, China, and India - used this strategy of industrialisation and achieved significant results.

This study's finding that the presence of foreign firms does not affect the export intensity of domestic firms indicates that more needs to be done in establishing the conditions that enable spillover effects to occur. The extent to which domestic firms can benefit from FDI spillover depends not only on the number of (foreign) FDI firms in the domestic sector but the absorptive capacity of the host country. The stock of the human capital in a host country is both a determinant and a condition for FDI spillover. For example, there is evidence that the labour force of a host country has to reach a minimum threshold before domestic firms can benefit from FDI spillover (see, for example, Borensztein et al., 1998). Hence, the government should invest heavily in providing quality education and technical training to the citizenry in order to attract FDI and ensure that when foreign firms invest, domestic workers and firms are in a better position to benefit from the FDI, directly and indirectly. Also, beyond promising to support SMEs financially, the government can improve the absorptive capacity of domestic firms by investing in research and development and helping domestic firms to develop strategic relationship and synergies with universities and research centres.

Finally, export promotion should go beyond financial incentives such as tax reliefs, the Manufacture In-Bond Scheme (MIBS) and the Export Expansion Grant Scheme (EEG). The poor state and high cost of critical infrastructure such as power and transportation facilities (especially ports and the rail service) contribute to the abysmal performance of the non-oil manufacturing sector exports. Hence, a sustained investment in this critical infrastructure can reasonably be expected to boost Nigeria's profile as a suitable FDI destination as well as enable its exporters to thrive. In addition, the government should provide other types of assistance to non-oil exporters such as direct coaching, matching with potential foreign clients and easing their purchase of foreign inputs.

7.5 Limitations and profitable avenues for further research

Notwithstanding the significant contribution of this study, a number of caveats are worth acknowledging, and so are several ways in which the research presented in this PhD thesis could be extended. First, the effect of aggregate and sectoral FDI on aggregate and sectoral exports deserves further investigation. The findings presented should not mark the endpoint of research into this area of study but a platform for further study. In this thesis, the analysis was limited to the years for which sectoral FDI data were available; and in the case of Nigeria, the last available data was at the year 2009. However, since 2009, there have been significant national and global economic phenomena - for example, the global financial crisis, the subsequent recession, and then the start of the economic recovery - that may have affected the FDI-export relationship in Nigeria. It follows that a more recent dataset would allow investigating if the relationship found in this research still holds and whether there has been any significant shift in the sectoral breakdown of FDI.

The indirect effect of FDI in Nigeria also warrants further investigation. As we have pointed out earlier, FDI spillover can either be vertical (inter-industry) or horizontal (intra-industry). There is evidence in the literature that suggests that the chances of occurrence and magnitude of vertical spillover may differ from horizontal spillover. According to Blalock and Gertler (2008), vertical spillover is more likely to occur, as FDI firms may provide direct coaching and financial and technical assistance to their domestic suppliers or clients. Horizontal spillover, on the other hand, is not guaranteed as FDI firms are not in the business of development per se but to maximise their shareholder value - they benefit the host country usually when their interests align. Hence, FDI firms have the incentive to protect their technology and other competitive assets from leakages to their domestic firm competitors within the same sector. Given the nature of our data, we could only investigate the presence of a horizontal FDI spillover on domestic firm's exports, which is a limitation. Data availability permitting, future empirical works might try to examine the inter-industry effects of FDI.

Another aspect of the inward FDI-export relationship that requires further attention is the behaviour of the foreign subsidiaries. Although MNEs increasingly undertake complex FDI strategies that often blur the traditional classification of FDI as vertical or horizontal, there is

evidence that the behaviour of foreign affiliates that can be classified as horizontal FDI differs from vertical FDI, and this invariably determines their effect on the host country (see, for example, Beugelsdijk et al., 2008; and Franco, 2013). In our analysis, we inferred, and with good reason, that vertical FDI is more likely to be primary sector FDI, while horizontal FDI is likely to be dominated in the manufacturing and service sector. This is a reasonable argument to make, although in some cases, manufacturing FDI can also be vertical FDI when the foreign affiliates are part of a global value chain or when the host country serves primarily as an export platform. Hence, future research could delineate carefully the distinction between horizontal and vertical FDI and their respective effects on exports (an analysis that, admittedly, was beyond the scope of this PhD thesis). Another aspect of foreign affiliate behaviour that has received increasing attention in the literature is the country-of-origin argument. From the rather nascent body of literature, it appears worth asking whether there is a difference in behaviours – such as investment pattern and relationship with domestic firms and institutions - between FDI from developed countries and FDI from emerging countries. Also, given the increasing volume of Chinese FDI in Africa, and to Nigeria in particular, this question appears to be particularly pertinent. Unfortunately, the data employed in this research did not contain information on the country of origin of investors, hence we could not make this distinction in our analysis. Future empirical research might help to answer this important question.

Another limitation of this research and an opportunity for further research has to do with the methodological choice. Although the study employed the latest and most appropriate econometrics methods suitable for answering our research questions, statistical analysis has its own limitations. The econometric techniques are useful in examining whether the presence of foreign affiliates in a sector correlates with an increase in export performance (decision to export and intensity of exports) of domestic firms. This insight is very useful, particularly as the data employed covers a large number of firms. However, despite the value of this approach, it does not clarify the channel through which spillover, if there is any, occurs. As we have pointed out in the literature review, there are different channels through which FDI could affect the export performance of domestic. Could it be that foreign firms are providing a direct coaching to supplier domestic firms on production techniques and international marketing? Or could it be that domestic firms are merely imitating the processes through which foreign firms penetrate the international market? Or could it be that workers who move from foreign affiliates to domestic firms transfer knowledge and expertise they gained from the foreign affiliates in

order to promote the productivity and exporting capability of domestic firms? The answers to these questions are important both theoretically and for designing appropriate policy interventions. This is where the econometric methodology is limited and requires complementing. A useful avenue for future research would be to incorporate other research methods such as interviews, business cases and firms' surveys in order to understand the 'how' of spillover transmission.

Despite the merits of the ARDL approach to cointegration employed, it is well known that it has low power and that Pesaran et al.'s critical values may suffer from size distortions in the direction of over rejection of the null hypothesis when the null is true. Future work may attempt to verify the extent of any size distortion in our application of the ARDL cointegration test by computing bootstrapped critical values for both the t and F statistics.

Another limitation of the analysis reported in this PhD thesis is that it assumes that no structural breaks occurred in the individual series or the relationship over the sample period. This assumption may not be plausible. Future research may, therefore, profitably re-examine the relationship in question by testing for such structural breaks.

Finally, it should be acknowledged that this research only tested for a linear cointegrating relationship between inward FDI and Nigerian exports. Nevertheless, recent developments in non-linear cointegration techniques make it possible for future studies to test whether any nonlinearities pertain to the data generation process (DGP) characterising such relationship. The recent non-linear autoregressive distributed lag (NARDL) estimation method developed by Shin et al. (2014) could be usefully employed to test for a non-linear relationship and it would constitute a novel line of investigation in this strand of literature since the assumption of a linear relationship is ubiquitous in prior studies of the inward FDI-export nexus. NARDL incorporates asymmetries both in the long- and short-run relationships and, at the same time, captures the asymmetries in the dynamic adjustment whilst also allowing the regressors to be of mixed order of integration in testing for cointegration.

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