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Impact of Foreign Direct Investment on Economic Growth: A Disaggregated Approach for Policy Discourse in Developing Countries

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ABSTRACT: The study examines the impact of foreign direct investment on economic growth in Nigeria spanning over 1984 to 2025. The study utilized a secondary data source and adapts the Augmented Dickey-Fuller Unit Root Test, the Granger causality technique, and the Autoregressive Distributed Lag model which is robust to heteroscedasticity and autocorrelation. The study divided foreign direct investment into inward foreign direct investment and outward foreign direct investment. Finding indicated that inward foreign direct investment was significant and positively influenced economic growth in Nigeria. However, outward foreign direct investment had significant and negative impact on economic growth in Nigeria. Further findings indicated that outward foreign direct investment is positive however, not significant on economic growth within the study period in Nigeria. The evidence indicate that foreign direct investment granger caused economic growth and also economic growth granger caused foreign direct investment. Therefore, the study recommended that Nigerian government should formulate and implement policies that can attract more foreign direct investment and policies that would discourage outflow of foreign direct investment.

INTRODUCTION

Foreign direct investment is today viewed as the critical catalyst in enhancing economic growth, by it potential to the transfer of capital, technology, and knowledge, promote entrepreneurship, enhance overall productivity, boost competitiveness and ultimately eradication of poverty. These said advantages has forced developing countries to implement policies geared toward foreign direct investment (FDI) attraction by the way of providing subsidies and tax reduction among others. FDI today remains the most reliable source growth-propelling technologies and the highest source of capital inflow, and this increases the efficiency of production and spur growth (Lee 2013, Das and Sethi 2020, Taylor 2020, Yeboua 2021). Foreign direct investment supplement and complement inadequate domestic investment in an economy through the provision of foreign sources of financing to domestic investment, these promotes investment and spur economic growth (Ajide and Raheem 2016).

FDI plays a crucial role in the economic growth and development of countries across the globe. As a significant emerging market, Nigeria has experienced a substantial inflow of FDI in recent years, along with an increasing outward FDI trend. Nigeria is a largest economy in Africa, endowed with vast natural resources, a large population, and a strategic geographical location. Over the past few decades, the country has witnessed a surge in FDI inflows due to its attractive investment climate, market potential, and government efforts to attract foreign investors. Additionally, Nigerian companies have also expanded their operations abroad, resulting in an increasing trend of outward FDI. Inward FDI are foreign investments made by multinational corporations (MMC) into Nigerian economy, such as establishing new business, acquiring existing companies, or injecting capital into existing ventures. These inflows bring capital, technology, managerial expertise, and access to global markets, which can stimulate economic growth, create employment opportunities, and enhance productivity. Outward FDI, on the other hand, are the Nigerian companies' investments in foreign countries. This trend has gained momentum due to the desire to access new markets, secure natural resources acquire advanced technologies, and diversify risks. Outward FDI can contribute to economic growth by expanding Nigeria firms' reach, improving their competitiveness, and promoting knowledge and technology transfers.

However, the impacts of inward and outward FDI on economic growth are not straightforward and can vary depending on several factors. These factors include the host country's institutional framework, market size, human capital, infrastructure, political stability, and the quality of governance, additionally, the sectoral composition of FDI inflows and outflows, as well as the nature of the investment (greenfield or mergers and acquisitions), can also influence the economic growth outcomes.

FDI is generally regarded as the engine of economic growth and development, particularly for developing countries. *FDI* is the stock of physical assets held in one country by investors of another country. It provides foreign capital to close the investment gap, generates economic activities and facilitates economic development. Apart from its anticipated contribution to economic growth by making foreign capital available, *FDI* is expected to further stimulate domestic investment through forward and backward linkages

with the domestic economy to generate more economic activities (Jenkins & Thomas, 2002). Similarly, Masron and Yusop (2012) maintained that *FDI* provides some multiple benefits to the host country which include transfer of managerial skills and technology, generation of domestic investment in the form of marching funds, increase in domestic market competition, boosting of global market access particularly for export commodities and generation of modern job opportunities. Furthermore, *FDI* has the ability to close three developmental gaps which are investment gap, foreign exchange gap and tax revenue gap (Quazi, Vemuri & Soliman, 2014).

Numerous studies both theoretical and empirical, have emphasis the positive influence of foreign direct investment on the receiving economy. These is viewed as catalyst for job creation, innovation, and capital accumulation. FDI is today more desirable in developing countries, where foreign capital is needed to bridge the savings-investment gap in an economy. According to Saidi (2018), economies which are attractive to foreign direct investment flow, permits them to further enhance investor confidence and become even more attractive. Bannaga et al. (2013) asserts that, FDI is a significant factor in economic development and a substantial source of technology transfer from nations with advanced technology to those with less advanced technology. Its numerous knock-on effects boost economic growth by generating jobs, increasing capital formation, boosting the economy's productivity, upgrading managerial and leadership abilities, boosting competitiveness, and promoting macroeconomic stability in the host nation.

The fundamental tenet of the neoclassical and endogenous growth theories is that FDI generates growth through human capital development and capital accumulation. According to neoclassical views, the growth effect is temporary because of the declining rate of return on investment (Solow 1956). Due to the endogenous nature of growth variables like human capital and technological advancement, the effect is long-lasting under endogenous models (Romer 1986). For the last three decades, the general enthusiasm for the attraction of foreign direct investment (FDI) has increased (Alfaro et al., 2004). The economic importance of FDI has influenced countries to embrace it as part of their economic development strategy (Ayanwale, 2007). Several countries have made conscious efforts by creating a conducive investment environment, offering incentives and pursuing investment policies to attract FDI.

According to Różański and Sekuła (2016), the growing significance of *FDI* in the modern global economy is associated with globalisation which has enabled the flow of investment, goods, and services between individual economies. Globalisation has contributed to improving universal capital transmissions as well as the change in the composition of their distribution. This development has led to an expansion in the amount of capital investment in the world. For instance, in the 1980s, the global capital flow grew by about 30 percent on the average, which at the time was more than three times the world rate of export, with additional capital investment growth observed during the 1990s due to increased globalization (Kosteletou & Liargovas, 2000). As a result of this development, most of the SSA countries have been focusing on attracting *FDI* to provide employment and impact on economic growth to enhance the living standard of their people, but regrettably, their deliberate efforts have not yielded the desired result (Zangina & Hassan, 2020; Morris & Aziz, 2011).

Foreign direct investment is regarded as significant for stimulating economic growth and sustainable development of developing countries such as capital deficient like Nigeria. The ability of Nigeria to attract investment varies due to numerous reasons. Several economic factors such as FDI, market size, government tax incentives, human capital, and trade openness, have been found by previous studies to have significant influence on economic growth. However, Nigeria have been focusing on providing incentives and adjustment of their macroeconomic environment to facilitate foreign and domestic investment in an attempt to achieve economic growth however, without achieving the desired results.

The influx of FDI in Nigeria should have been rapidly increasing the rate of economic growth, as observed in the overview, the inflows of FDI from 1980 - 2004 was steadily increases while the rate of growth was sharply declining and fluctuating. Besides, the fast-increasing trend of FDI in 2005 - 2010 this should have accelerated the economic growth, but the rate of growth decline sharply in the same period. Finally, FDI inflows show a decreasing pattern from 2009 – 2022. On contrary to the growth rate, the steady trend instead of declining. These inconsistence patterns should be investigated. However, Nigeria has recorded a low rate of economic growth in 2016 and 2022 (Freeman, 2017: Haruna et al. 2023). In contrast, Nigeria shows the low volatility of the economic growth despite an increase in FDI. In another study, Alfaro (2003) found that FDI alone plays an ambiguous role in accelerating economic growth. The concern of this research is to find the empirical evidence on the nature of the effect of FDI on economic growth, in the context of Nigeria. For the purpose of better utilization of FDI inflows towards improving the economic growth. The increase in FDI and volatility in economic growth might affect poverty. The responsiveness of FDI to poverty reduction in Nigeria is not clear. In Nigeria, poverty is on high alert despite the inflows of FDI, as in discussed in the overview, the increasing number of populations living below poverty line of USD1.90 from 1980 - 1995. It shows the increasing pattern of FDI. However, in 2005 - 2010 it shows increasing trend of FDI, the information demonstrates an increasing number of people living below USD1.90.

Besides, the studies by other scholars on FDI on economic growth show inconsistent results may be because of various reasons such as different methodology used or different sampling methods applied. Therefore, the result of one country cannot be generalized in another country because of different economic factors. In Nigeria, less concerned is given to FDI on growth. Therefore, this study

is expected to investigate the direction of the causal association among the variables aimed at filling this gap. To our knowledge, few studies in Nigeria, have conducted a study taking into consideration these variables. On the basis of this, the effect of inward and outward of FDI on economic growth would remain examined. Disaggregating FDI into inward and outward investment is an important area that needs further exploration.

FDI is crucial component of global economic integration, understanding the specific dynamic of inward and outward investments can provide valuable insights for policy makes, researchers, and investors. One significant reason for disaggregating FDI into inward and outward investments is to gain a comprehensive understanding of the drivers and impacts of FDI flows. By examining inward investments, researchers can identify the factors that attracts foreign investors to a particular country. This analysis can shed light on the host country's competitiveness, investment climate, and potential areas for improvement.

Additionally, understanding the motivations and strategies behind outward investments can provide insights into the home country's economic development, competitiveness, and global business strategies. Analyzing the disaggregated data on inward and outward investments can provide valuable insights into the spillover effects of FDI. Inward investments have the potential to generate positive spillovers, such as technology transfer, knowledge diffusion, and productivity improvements which can benefit the host country's domestic firms. By understanding the sectors and industries that attract inward investments, policy makers can design policies to maximize any potential negative effects.

Similarly, studying outward investments can help identify the spillover effects on the home country's economy, such as knowledge, and skill development. The gap in disaggregating FDI into inward and outward investments is an important area that needs further exploration. Understanding the drivers, impacts and spillover effects of inward and outward investments can provide valuable insights for policy makers, researches, and investors. By analyzing the specific dynamics of inward and outward investment, policy makers can design targeted policies to attract and retain foreign investors, promote domestic firms' internationalization, and maximize the positive spillovers of FDI.

LITERATURE REVIEW

This chapter examines the literature related to this study. In specific terms, the concept, types of *FDI* and poverty are examined. The mainstream theories of *FDI* related to the study were also surveyed. The empirical literature on the relationship of FDI and economic. Also, empirical literature on the association between poverty and economic growth in Nigeria. Finally, the gap in the literature, as well as the conclusion of the chapter are stated.

The Concept of Foreign Direct Investment

FDI is an investment in tangible assets in a particular country by a resident of another country. The Balance of Payments Manual of IMF defines *FDI* as an investment undertaken in acquiring a long-lasting interest in a firm situated in an economy which is different from that of the investor. According to UNCTAD (2009), *FDI* is '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)'. The use of the term 'long-term relationship' signifies the presence of a long-run relationship between the investment enterprise and the direct investor, while the lasting interest indicates control or high level of influence on the enterprise management. *FDI* primarily relates to capital transfer to a host economy from the source country. As such, foreign investment activities are regarded as *FDI* when considerable equity shareholding of the enterprise is controlled. It can also involve the relocation of some aspect of the assets of the firm or part of its operational activities such as production or distribution and sales to the host country. Though, funds wholly borrowed or sourced from the host country may be used by the foreign investor to finance the *FDI* project (Moosa, 2002).

One common element of the *FDI* definitions is the issue of control or 'controlling interest' which distinguishes *FDI* from portfolio investment. This is because the portfolio investor is not after control or enduring interest. Although, there is no consensus on what determines controlling interest, holding a minimum of 10 percent of the shares usually allow a foreign investor to wield some significant influence on crucial policies or strategic issues in the enterprise (Moosa, 2002). Also, *FDI* investor is more concern with long term relationship and lasting interest, whereas, in portfolio investment, the significant component is the short-term instrument. As a result of the long relationship and lasting interest, liquidating *FDI* is not all that easy, but when the confidence of the portfolio investor is lost in the operations of the enterprise, the investment is liquidated.

FDI generally takes different forms. Its classification is mostly viewed from either the perspective of the source country (the investor) or host country. Caves (1971) provided the distinction between vertical *FDI*, horizontal *FDI* and conglomerate *FDI*. Vertical *FDI* is carried out to exploit raw materials available in the hosting country. This is 'backward vertical *FDI'*. However, 'forward vertical *FDI*' is undertaken when distribution outlets are acquired to get closer to the consumers.

On the other hand, horizontal *FDI* is in the form of expansion horizontally in order to manufacture similar or the same kind of goods in the host country as is being produced in the home country. Horizontal *FDI* enables the firm to fully utilize oligopolistic advantage

or monopolistic advantage relating to product differentiation or patents. Conglomerate *FDI* combines both the vertical and horizontal *FDI*.

The classifications of *FDI* from the host country perspective are broadly three, 'import-substituting *FDI*', 'export increasing *FDI*' and 'government initiated *FDI*'. When *FDI* enables the host country to produce goods that were hitherto imported, it is regarded as import-substituting *FDI*. In this regard, trade barriers, costs of transportation and market size available in the host country are considered to be the likely determinants of this particular form of *FDI*. Conversely, export increasing *FDI* leads to exportation of raw materials and intermediate goods from the host country to the investor's home country as well as other different countries hosting the subsidiaries of the MNCs. The government initiated *FDI* can be prompted by incentives offered to foreign investors by the authorities in the host country to stimulate investment to resolve the balance of payment deficit.

Economic Growth

Economic growth is the surge in the capacity of a country's economy in terms of producing goods and services, based on a comparison of one period of time to another. It is measured in real or nominal terms, which is adjusted for inflation. Traditionally, aggregate economic growth is measured in terms of gross national product (GNP) or gross domestic product (GDP), although alternative metrics are sometimes used. Economic growth is the aggregate value added by domestic producers in the economy plus product taxes minus subsidies, not which are included in the value of products. This measure is used in Stiglitz (2000), Levine (2001), and Bekaert et al. (2005) investigate the impact of financial liberalization on growth. This study utilized the GDP per capita as the dependent variable and is measured in millions of dollars.

THEORETICAL REVIEW

Foreign direct investment (FDI) is a form of cross-border investment that involves a long-term and lasting interest in a foreign enterprise. FDI can have significant effects on the economic growth of the host country, both directly and indirectly. The theoretical literature on the impact of FDI on economic growth can be broadly divided into two strands: exogenous growth theory and endogenous growth theory.

Exogenous growth theory, also known as neoclassical growth theory, assumes that technological progress is determined by factors outside the economic system, such as population growth, natural resources, or government policies. According to this theory, FDI can affect economic growth by increasing the amount of physical capital available in the host country, and by introducing new products and processes that can improve productivity and efficiency. However, the marginal returns to capital are diminishing, and therefore the growth effects of FDI are limited in the long run. Moreover, FDI may crowd out domestic investment or create negative externalities, such as environmental degradation or income inequality, that can offset the positive effects of FDI. Some examples of exogenous growth models that incorporate FDI are the Solow-Swan model, the Harrod-Domar model, and the product lifecycle model (Kondyan & Yenokyan 2019).

Endogenous growth theory, also known as new growth theory, assumes that technological progress is determined by factors within the economic system, such as human capital, research and development (R&D), innovation, and learning by doing. According to this theory, FDI can affect economic growth by enhancing the stock of knowledge and technology in the host country, and by creating positive spillovers that can benefit domestic firms and workers. FDI can also stimulate competition, trade integration, institutional development, and policy reforms that can foster a more conducive environment for growth. The marginal returns to capital are constant or increasing, and therefore the growth effects of FDI are persistent and cumulative in the long run. Some examples of endogenous growth models that incorporate FDI are the Romer model, the Lucas model, and the Aghion-Howitt model (Mahembe and Odhiambo, 2014).

Theories of Foreign Direct Investment

The foundation of the theories of *FDI* can be linked to the initial notion of mercantilists on capital accumulation. Prior to 1800, the mercantilists believed that a nation's wealth depends on the treasure amassed in terms of gold and silver (Carbaugh, 2004). Exploration was undertaken by mercantilists and governments to realize this, marking the beginning of *FDI* flow through exploration across the globe.

The demand for land and raw materials by European merchants following the growth of the industrial revolution necessitated the acquisition of colonies where surplus capital can be invested (Yelda, 1991). Besides, the acquisition of colonies was believed to be the source of having strong national pride by European powers. Accordingly, the Berlin Conference of 1885 culminated in the partitioning of Africa into colonies of the European powers, thereby marking the commencement of *FDI* inflow to SSA and other parts of Africa. Furthermore, the amassing of territories was believed by the merchants to enhance trade surplus from exports and minimization of imports through quotas and tariffs. This led to the drive by countries to maximize exports with a view to accumulating wealth instead of imports which depletes the wealth of the country. The model of mercantilist was unsustainable due to its unilateral and unequal relationships. Nevertheless, it explains the background of *FDI*.

Several theoretical models were developed to explain *FDI* and decisions of the MNCs to locate their investment in other countries different from the home country. These theories provide some insights on the determinants of *FDI,* which are either based on micro or macro dimensions (Dunning & Lundan, 2008). The micro side relates to the organizational aspect which has to do with inherent factors to the company itself like, cost reduction, economies of scale and ownership advantages. On the other hand, the macro dimension involves resource-allocation relating to market-specific factors such as availability of resources, barriers to entry, market size, political stability, country risk, institutional environment and others (Faeth, 2009). The mainstream theories of *FDI* related to this study are reviewed in subsequent sub-sections.

International Trade Theory

The initial theoretical model which tried to provide a theoretical explanation of *FDI* was Heckscher-Ohlin theorem by Heckscher (1919) and Ohlin (1933) based on the neoclassical theory of trade (Faeth, 2009). The model treated *FDI* as an aspect of international capital trade hinging on a 2×2×2 general equilibrium context with two nations, two factors of production (labour and capital) and two products. The theory assumed the factor and product market to be perfectly competitive, production functions with identical constant returns to scale, transport cost that is zero and factor endowments which exclude specialization. In addition, international trade model also assumed that relatively commodities vary in terms of factor intensities and countries relatively vary in terms of factor endowments, resulting in international factor price disparities. Thus, a comparatively capital-abundant economy would either export the capital-intensive goods overseas or shift capital to a location abroad where yields on capital are more, and returns in respect of labour are less until it achieves equalization of factor price. The Heckscher-Ohlin theory did not elaborate on *FDI*; it, however, provided the groundwork for *FDI* theories.

Foreign Direct Investment Capital Theory

MacDougall (1960) and Kemp (1964) proposed the capital theory, also known as the rate of return theory anchored on a perfectly competitive market assumption (Choudhury & Nayak, 2014). The MacDougall-Kemp model considered only one good and two factors of production, assuming perfect competition, full employment as well as constant returns to scale. They also expected capital to be moved to a capital deficient country with higher returns on capital. This implies that capital such as *FDI*, flow to countries with scarce capital and high returns from countries with abundant capital and low returns (Sheibani, 2008). Hence, if the marginal return is equal or higher than the marginal cost, there is an attraction for investors to invest. The capital theory could be used to explain the establishment of import substitution firms in developing economies such as SSA. *FDI* projects were attracted to developing countries during the early 1960s as a result of demand for essential commodities like clothing, safety matches, sugar and detergents which were being imported, thereby taking advantage of the existence of high returns.

According to Caves (1982), horizontal integration is related to the expectation of high return. This is because the high return is linked to low marginal costs associated with technology which is available to the MNCs. This view was expanded by Aliber (1970) who argued that though capital tends to move as a result of variation in capital returns, the difference was because of variance in terms of capital endowments as well as currency risks since interest rates contain a premium which is charged based on the anticipated currency depreciation.

Nonetheless, some empirical investigations like Bandera and White (1968), and Agarwal (1980) failed to validate the capital theory of *FDI*. In the first place, human capital is critical for equating capital rate of return in developing countries. Secondly, capital tends to flow from developed to developing countries and not necessarily from high to low income countries in the light of the overlapping demand theory of Linder (1961). Thirdly, a return is insufficient as a prerequisite for the explanation of *FDI*. In spite of these criticisms, the theory provided insight on *FDI* inflow to SSA.

Internalization Theory

Buckley and Casson (1976) whose work was an expansion of Coase (1937) concept of internalization, pioneered the formalization of several thoughts into a theory of MNCs (Faeth, 2009). Buckley and Casson held that Coase's concept applies to MNCs as well, believing that intermediate goods market, like techniques of production as well as marketing and management skills were not perfect and often related to substantial risk and uncertainties, resulting in high costs of the transaction. Internalization involves an enterprise using its structure of governance and common ownership for international operations (Shenkar, Luo & Yeheskel, 2008).

Building on Heckscher-Ohlin theory which provided the foundation of the theory of firm proposed by Coase (1937), Buckley and Casson (1976) developed the theory of internalization. The theory indicates that a firm's internal transaction can be managed by management, but the firm cannot control factors which are external affecting operations. The theory holds that the existence of five kinds of market imperfections as a result of market failure allow internalization and operations of MNCs locally as well as in the international market. The first is the time lag from initiation to production process completion, which is long, leading to the inability of future markets to be satisfied. The second is that firms that control intermediate goods which gives them market power utilize such advantage sometimes to discriminate prices in a different market. Thirdly, the absence of knowledge on nature, quality and value of the product by the buyer and seller facilitate forward integration through the control of factor input supply and sales. The

fourth is that the intervention of government by using fiscal policies like tariffs, taxation discrepancies, and capital movement restriction causes imperfection resulting in transfer pricing. Lastly, MNCs can use monopoly power to have control of various markets using transfer pricing, predatory pricing and cross-subsidization. The internalization theory tried to explain the growth of MNCs and their motivations for *FDI* activities (Denisia, 2010).

These factors enable market imperfection, making firms to establish definite advantages that describe *FDI* inflow. Thus, internalizing decision, according to Buckley and Casson was presume to depend on four factors. First, factors that are industry-specific (like the structure of the market, economies of scale and type of product). Second, factors that are region-specific (like differences in culture and distance) can allow a firm to utilize resources in markets of several regions. Third, factors that are nation-specific (like financial and political issues). Finally, factors that are firm-specific (like management skills) which enhances competitiveness. According to Denisia (2010), internalization enables MNCs to organize their internal processes and activities to develop specific advantages which can be exploited. Based on internalization premise, vertical integration, horizontal integration as well as transaction cost were used to explain *FDI* inflow around the globe.

Channels through which FDI Impacts on Economic Growth

The theoretical and empirical literature offer contradictory predictions on the effects of FDI on the host country's economy. Using both the neoclassical (or exogenous) growth models and the new endogenous growth models, scholars have examined the relationship between FDI and growth in four broad ways: (i) The determinants of growth, where FDI is put as one of the explanatory variables; (i) the explanatory variables; (iii) channels through which FDI affects growth; and (iv) the causal relation between the two variables. Seminal studies, which have attempted to investigate all the four fields of study include the research done by Balasubramanyam et al. (1997, 1999); Borensztein et al. (1998); De Mello (1997, 1999); Hansen and Rand (2006) and Al Nasser (2010), among others.

The first three research areas listed above broadly examine the role, or channel through which FDI affects economic growth, or vice versa. A large body of this literature supports the view that FDI has a significant positive impact on growth. These studies show that FDI has a positive effect on the economic growth and welfare of the host country through the benefits it brings, such as increased investible financial resources, new innovation and technology, new managerial skills, skills development, the creation of job opportunities, and an improvement in the working conditions of employees and the development of the industrial sector in the host country, in addition to increased global exposure and restructuring for domestic firms.

FDI is also associated with positive spill-overs or externalities, which can boost the economies of host countries (De Mello, 1997, 1999 and Chowdhury & Mavrotas, 2006). However, there are other theoretical studies, such as Body and Smith (1992), Aitken and Harrison (1999), Carkovic and Levine (2002), Alfaro (2003), and Alfaro et al. (2004), which have shown conflicting results. For example, the Carkovic and Levine (2002) study, which covered 72 countries over the period 1960-1995, found that the exogenous element of FDI does not have any positive effect on growth; and they found no evidence to support the assertion that FDI, on its own, can influence the host country's economic growth.

Furthermore, Alfaro (2003) used the crosscountry data for the period 1981-1999; and this author concluded that FDI has an ambiguous effect on economic growth. A review of several theoretical studies sheds some light on the contradictory relationship between FDI and economic growth. Liu (2008) explained that the level and rate of effects of spill-overs or externalities can go in opposite directions. As explained below, there are several channels through which FDI affects economic growth. According to the OECD (2002), UNCTAD (1999); Moura and Forte (2010); and various other studies sighted below, the impact of FDI on a host country's economic growth can either be positive or negative. This issue will be further discussed below.

Linkages Between FDI and Growth in the Exogenous-Growth Model

The exogenous-growth theory, usually referred to as the neo-classical growth model or the Solow-Swan growth model, was pioneered by Solow (1956 and 1957). The theory assumes that economic growth is generated through the accumulation of exogenous factors of production, such as the stock of capital and labour. Empirical studies on economic growth using the exogenous model normally employ the aggregate production function, as developed by Cobb and Douglas (1928). Following Hicks (1932), the Cobb Douglas production function, or the aggregate production function is modelled against: capital input (both domestic and foreign), labour input, and the rate of technological progress, which changes over time.

It has been shown that through this framework, capital accumulation contributes directly to economic growth in proportion to capital's share of the national output. Furthermore, the growth of the economy depends on the augmentation of the labour force and technological progress. According to this theory, FDI increases the capital stock in the host country; and this would, in turn, affect economic growth. De Jager (2004) explains that if FDI introduces new technology, which leads to increased labour and capital productivity, this would then lead further to more consistent returns on investment, and labour would grow exogenously. Barro and Sala-I-Martin (1995) demonstrated that there is a positive relationship between capital accumulation and output; while Herzer, et al. (2008) have recently established that FDI stimulates economic growth by augmenting domestic investment. Through the exogenous or neo-classical growth model, it has been shown that FDI can impact economic growth directly through capital

accumulation and the inclusion of new inputs and foreign technologies in the production function of the host country. Thus, the neo-classical growth model shows that FDI promotes economic growth by increasing the amount and/or the efficiency of investment in the host country.

Linkages between FDI and Growth in the Endogenous Growth Model

Unlike neoclassical growth models, which assume technological progress to be exogenous, the new growth models postulate that economic growth is driven by two main factors: the stock of human capital and technological changes (Romer, 1986, 1990 and 1994; Lucas, 1988). Nair-Reichert and Weinhold (2001:154) argue that the new endogenous growth models take into account long-run growth as a function of technological progress; and hence they offer a framework in which FDI can perpetually increase the rate of economic growth in the host country via technology transfer, diffusion, and spill over effects.

Although both the exogenous and endogenous growth theories argue that capital accumulation or formation is an important determinant of economic growth, they differ in their treatment of technological progress. The former treats technological progress as exogenous to the model; while the latter argues that technological progress is improved endogenously – by the increase in knowledge and innovation (Borensztein et al., 1998; de Mello, 1999; Elboiashi, 2011 and Al Nasser, 2010). FDI by multinational corporations (MNCs) assumed to bring research and development (R&D), in addition to human capital accumulation, which creates positive or negative externalities (growth spill-overs), which would affect the host country's firms and the economy (Barro and Sala-I-Martin, 1995). These growth factors, or FDI spill-overs, are assumed to arise from tangible capital, human capital, or R&D development expenditures.

The two growth theories and the FDI-economic growth illustration above reveal that FDI can contribute to economic growth through both direct impact and indirect impact. In theory, FDI can boost the host country's economy via capital accumulation, the introduction of new goods and foreign technology (according to the exogenous-growth theory view), and also by enhancing the stock of knowledge in the host country by way of the transfer of skills according to the endogenous growth theory (Elboiashi, 2011). Herzer et al. (2008) highlight the fact that FDI plays an important role in the host country's economic growth – by increasing the amount of investable capital, and by way of technological spill overs. The OECD (2002:5) further elucidates that FDI represents a potential source for sustainable growth and development, given its assumed ability to: (i) Generate technology spill-overs; (ii) assist in the formation of human capital and development; (iii) help the host to integrate into global economic trade integration; and (iv) assist in the creation of a more competitive business environment and enhance enterprise development.

EMPIRICAL REVIEW

According to Ahmed (2012) who examined the impact of FDI inflow spillover on economic growth of Malaysia spanning from 1999 to 2008. The study utilized gross domestic product (GDP), FDI, physical and human capital and labour force as variables and the paper used Ordinary Least Squares (OLS) technique. Evidence indicates that FDI inflows affects total factor productivity (TEP), however, FDI is found to be enhancing growth. Similarly, Hong (2014) utilized the General Moment Method technique to analyze the influence of FDI o economic growth in China from 1994 to 2010, using a panel of 254 prefecture-level cities in Chine. Outcome reveal that exert positive influence on economic growth. the study further states that, FDI has a crowded effect on domestic capital. Similarly, Sokhanvar (2019) toed in the same direction by examining the impact of FDI on overall development in seven European Union (EU) economies 1995 to 2014. The study utilized the Vector Error Correction technique, evidence shows that FDI accelerating growth.

Similarly, in the same line, Eudelle & Shrestha (2017) test the nexus between foreign direct investment and economic growth in Singapore and Oman. The study suggests that FDI stimulates growth by filling the needed investment gap. Similarly, to this research, Agbloyor et al. (2016) measured the association between FDI, institutions, and growth in Sub-Saharan Africa (SSA) utilizing a two-step generalized method of moments estimator with orthogonal deviation and Weidmeijer corrected standard errors. Results indicate that FDI enhances growth in the sample with abundant natural resources. Furthermore, relying on annual panel data from 1980 to 2016 for 45 African nations, Acquah & Ibrahim (2020) analyzed the influence of FDI on growth and financial sector development. Using the two-step generalized method moments, evidence indicates that higher FDI is linked with higher growth.

More so, while analyzing the influence of FDI, financial development and growth, Kais Saidi (2018) used the error correction model (ECM) and covered 16 low-income economies from 1990 to 2015. The study found that FDI stimulates growth. Also, Opoku et al. (2019) also investigated the impact of FDI, sectoral effects and growth utilizing the GMM approach in 38 African economies from 1960 to 2014. Evidence shows FDI spur growth. Similarly, towing toward the same line, Sakyi et al. (2015) utilized the ARDL bound method in testing the influence of FDI, trade openness and growth from 1970 to 2011 in Ghana. Result suggests that FDI foster growth. Umer et al. (2020) examined the influence of FDI, trade openness and growth from 1990 to 2018 in 5 BRICS economies. Adopted the panel ARDL technique, and evidence indicate that it fosters growth.

Also, Yao and Wei (2007) analyzed the impact of FDI on growth using the Random, Fixed effect and GMM techniques for 29 provinces from 1979 to 2003 in China. Evidence indicates that FDI is a driver of economic growth for newly industrialist countries.

Similarly, Kouassi Yeboua (2020) tests the nexus between foreign direct investment and growth in Africa: examining the role of institutional development from 1990 to 2017. Utilized the panel smooth transition regression technique, evidence indicates that FDI promotes growth and concludes that the quality of institutional development determines the influence of FDI on growth. Furthermore, Taylor (2020) studied the link between FDI and growth based on general and sectoral foreign direct investment in Tanzania from 1988 to 2017 using the Autoregressive Distributive Lag Bound method. Evidence reveals that sectoral FDI stimulates economic growth. Using the ARDL bound testing technique to measure the causal link between FDI and growth in Kenya from 1980 to 2018, Odhiambo (2021) reported that foreign direct investment is related to growth.

Additionally, Globerman and Shapiro (2003) find that countries with a better legal system and stronger protection of property rights tend to attract more FDI. Dunning and Lundan (2008) update the eclectic approach by adding consideration of the macro institutional environment. While these studies have greatly enriched our understanding of the institutional determinants of foreign investment, several major gaps still exist. In the case of countries in SSA, Tee, Larbi, and Johnson (2017) reveal a significant effect of FDI on growth with channels stemming from boosting capital formation and enhancing the quality of capital stock in the economy. Buchanan et al. (2012) investigate the institutional antecedents of FDI volatility. They find that institutional quality has a positive and significant effect on FDI, whereby a one-standard-deviation change in institutional quality changes FDI by a factor of 1.69. Further, they show that institutional quality has a negative and significant effect on the volatility of FDI.

Also, Buchanan et al. (2012) confirm that institutions promote FDI flows while identifying a new realization that institutions reduce the volatility of FDI flows. Okada (2013) suggests that financial openness alone may not be sufficient to attract foreign investments. They show that the effect of financial globalization on international capital inflows depends on a country's institutional quality. They find that although financial openness and institutional quality do not individually have a significant impact on international capital inflows, their interaction effects are found to be significant. Therefore, countries with stronger institutions seem to benefit more from financial openness and globalization. Rjoub et al. (2016) report a positive FDI impact on growth in Latin American countries. In another study, Rjoub et al. (2017b) found a positive and significant effect of FDI on growth in landlocked SSA countries.

In the context of Africa specifically, Agbloyor et al. (2016) examine the influence of institutional development on FDI-growth nexus in Sub-Saharan African countries for the period 1996–2010. They employ a linear interaction model (linear interaction between FDI and the institutional indicators) and the system generalized method of moments (SYS-GMM) estimators, and the results did not show robust evidence concerning the moderating effect of institutions in FDI-growth nexus. However, they find a direct positive effect of institutions on economic growth. Adams and Opoku (2015) also examine the impact of the regulatory regime, namely, credit market regulations, business regulations, and labor market regulations, on FDI-growth nexus in 22 sub-Saharan African countries over the period 1980–2011. Based on general methods of moments (GMM) estimation approach, they find that FDI does not affect directly economic growth; it affects positively growth when interacted linearly with regulatory regime variables.

MATERIALS AND METHODS

This section presents the models that will be used for stating the objectives of the study. The aim of this is to guide and help in achieving the set objectives. The research limits its scope to the impact of FDI on economic growth in Nigeria. The study uses secondary data on economic growth (GDP), foreign direct investment (FDI), labor force total (L) as control variable, Capital stock (K) as control variable. These enable the study to focus on a particular aspect of areas of the issue. Therefore, the study covers the period of 39 years (1984 – 2022). The time period selected is influenced by the availability of data of each of the variables. The data of these variables are collected from the World Development Indicators (WDI).

To empirically assess the impact of foreign direct investment on economic growth in Nigeria. Therefore, the study employs the following Equation:

GDPPER = F (*K, L, FDI_INFLOW, FDI_OUTFLOW)* (1)

Where GDPPER denotes economic growth, K denotes gross capital formation, L is the labour force total, FDI_INFLOW represents a foreign direct investment net inflow to Nigeria, FDI_INFLOW represents a foreign direct investment net outflow out of Nigeria. Therefore, the econometric specification of equation is written as:

$$GDP_t = \beta_0 + \beta_1 K_t + \beta_2 L_t + \beta_3 FDI_INFLOW_t + \beta_4 FDI_OUTFLOW_t + \varepsilon_t \quad (2)$$

where β_0 and β represents coefficients, t stands for a time span, and ε indicates the error term.

To conduct analysis, the ARDL-bounds testing method is deployed to probe the existence of a long-run connection with the variables. Pesaran and Shin (1999) introduced the ARDL bounds modeling technique and afterward lengthened it by Pesaran, Shin, and Smith (2001). ARDL-bounds co-integration method has many benefits when equated with other procedures of co-integration. For instance, the assumption of restricting all the variables to be integrated in the same order ARDL bounds test does not say this, which was contrary to other techniques of co-integration. Thus, the ARDL method can be employed without regarding whether the variables are integrated of order zero or order one. Secondly, ARDL test is appropriate for the even small size sample, whereas other

techniques of co-integration are responsive to the sample size. Finally, ARDL method proposes an unbiased long-run model and valid t-statistics estimates even when some of the variables are endogenous (Harris & Sollis, 2003).

Scholars are using ARDL techniques for a stretched period. Nevertheless, it provides an esteemed means of analyzing the long-term interactions amongst economic time series data. The method was recently improved by the work of Pesaran and Shin (1999) and widened further by the work of Pesaran, Shin, and Smith (2001) and Narayan (2005) was lately. One of the benefits of ARDL techniques is irrespective of the degree of integration of the sequence it offers robust outcomes for the smallest sample sizes as well as reliable estimates of the long-run coefficients (Pesaran & Shin, 1999). ARDL model is represented in Equation [3.14]

$$\Delta Y_t = \beta_0 + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \cdots + \beta_n \Delta Y_{t-k} + \gamma_1 Y_{t-1} + \gamma_2 Y_{t-2} + \cdots + \gamma_n Y_{y-k} + \varepsilon_t \quad [3]$$

where ε_t stand for white noise error term, and the model is autoregressive, hence Y_t represents a vector of the variables employed in the model. The ΔY_t can be explained (in part) by change and lagged values of itself. It also has a distributed lag component, in the form of successive lags of the other independent variable. However, these methods are regarded as weak because they do not provide robust results for small samples, structural shocks, or breaks.

EMPIRICAL RESULTS

Descriptive Statistics

This sub-section provides a descriptive analysis to describe the main characteristics of the data utilized for the study. The summary statistics includes the mean, minimum, maximum, standard deviation, and observations in the analysis. The summary statistics for all the variables utilized in the study for Nigeria spanning from 1984 to 2018 are shown in Table 1.

Table 1: ***Descriptive Statistics***

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
FDI_INFLOW	1.525056	1.15907	5.790847	-0.03913	1.250128	39
FDI_OUTFLOW	0.362043	0.243256	1.919487	-0.01498	0.445712	39
GDPPER	1340.836	903.4494	3200.953	270.0275	900.8516	39
K	4.75E+10	3.48E+10	1.46E+11	1.23E+10	3.16E+10	38
LABOUR	46303322	45276845	73272344	26520337	13206909	39

Note: GDPPER denotes GDP per capita as economic growth, K is gross fixed capital formation, FDI_INFLOW represents foreign direct investment inflow. FDI_OUTFLOW denotes foreign direct investment outflow, Labour is labour force total.
Source Authors' computation, 2026.

As observed in the summary statistics, GDPPER is the dependent variable, GDPPER is having high dispersion from it mean values, with minimum and maximum values as 3200.953 and 270.0275. Whereas FDI_INFLOW have a low deviation from the mean value, with a minimum and maximum at 5.7908 and -0.0391. FDI_OUTFLOW is having low deviation from the mean value, with a minimum and maximum values at 1.9194 and -0.0149. The variable K indicates low deviation from the mean value, with minimum and maximum values of 1.46 and 1.23. LABOUR as a variable reveals a high deviation from the mean value.

Correlation Analysis

The use of correlation analysis establishes the intensity and direction of the association between independent variables. Table 2 exhibits the correlation results among the variables.

Table 2: Correlation Analysis

Variabes	GDPPER	logGDPPER	logFDI_OUT	logLabour	logK	LogFDI_INFLOW
GDPPER	1					
logGDPPER	-0.8786	1				
logFDI_OUT	-0.2332	0.4021	1			
logLabour	-0.6363	0.8017	0.6518	1		

logK	-0.8807	0.8461	0.3723	0.7893	1	
LogFDI_INFLOW	-0.4809	0.7363	0.5211	0.6229	0.6477	1

Note: GDPPER denotes GDP per capita as economic growth, K is gross fixed capital formation, FDI_INFLOW represents foreign direct investment inflow. FDI_OUTFLOW denotes foreign direct investment outflow, Labour is labour force total.
Source Authors' computation, 2026

The correlation between K and FDI_OUT indicates a low and positive coefficient. This implies a direct association. The correlation between LABOUR and FDI reveals a moderate correlation and positive coefficient. The correlation between FDI_INFLOW and LABOUR indicates a moderate and positive coefficient. The correlation between FDI_INFLOW and K reveals a positive and average coefficient. This implies a direct association. Based on the correlation coefficient in Table 2, all the variables are within an acceptable correlation degree.

Unit root test for Stationarity

In order to achieve a meaningful regression with time series data, it is necessary to test the existence of unit roots in the variables. The variables used in the analysis need to be stationary and/or should be co-integrated in order to infer meaningful relationship from the regression. The unit root test provides the order of integration at which the variables can be stationary. The tests were performed on all series (GDPPER, FDI_INFLOW, FDI_OUTFLOW, LABOUR, and K) using the Augmented Dickey-Fuller Unit Root Test. The results of the Phillips-Perron test unit root tests are presented in Table 3 as follows:

Table 3 Augmented Dickey-Fuller Unit Root Test

Variable	Level t-Stat	First Difference t-Stat	Order of Integration 0 or I
GDPPER	-0.3594	-4.7866 ***	I(I)
FDI_INFLOW	-3.7789**	-3.7789***	I(0)
FDI_OUTFLOW	-4.0433***	-9.4470***	I(0)
LABOUR	2.3515	-2.8850*	I(I)
K	1.7054	-4.1343***	I(I)

***, **, * denotes the level of significance at 1%, 5% & 10% respectively.
Source: Author's computation 2026.

Based on the unit root test result presented in table 3, FDI_INFLOW and FDI_OUTFLOW variables are stationary at levels, whereas the variables of GDPPER, LABOUR, and K were found to be stationary at first difference I(I).

The Optimal ARDL Model

Based on the unit root results, which indicate that the series are integrated at both level and first difference. These imply that the model has an amalgamated order of integration, which suggests the utilization of the ARDL Bound approach. The appropriate lag selection for the dependent and independent variables is to be determined first. The optimal lag selection based on the ARDL Bound method is automatically specified following the Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC), as observed in Table 4.

The Optimal ARDL Model

Table 4 Selected Model: ARDL(1, 3, 3, 3, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGGDPPER_CUR(-1)	0.364773	0.123992	2.941912	0.0114
LOGLABOR	-1.866400	1.489338	-1.253175	0.2322
LOGLABOR(-1)	0.361099	1.976624	0.182685	0.8579

LOGLABOR(-2)	-0.387748	1.338257	-0.289741	0.7766
LOGLABOR(-3)	2.824042	0.875952	3.223969	0.0067
LOGFDIOUT_CUR	0.010934	0.025744	0.424730	0.6780
LOGFDIOUT_CUR(-1)	-0.039655	0.021654	-1.831330	0.0901
LOGFDIOUT_CUR(-2)	-0.044066	0.022587	-1.950909	0.0730
LOGFDIOUT_CUR(-3)	-0.029507	0.021101	-1.398324	0.1854
K_GDP	-0.009102	0.008309	-1.095447	0.2932
K_GDP(-1)	-0.004900	0.012418	-0.394584	0.6995
K_GDP(-2)	0.006059	0.011872	0.510382	0.6183
K_GDP(-3)	-0.029247	0.010984	-2.662751	0.0195
FDIIN_GDP	0.027207	0.021535	1.263406	0.2286
FDIIN_GDP(-1)	0.052031	0.021499	2.420152	0.0309
FDIIN_GDP(-2)	0.016890	0.021999	0.767756	0.4564
FDIIN_GDP(-3)	0.062510	0.019595	3.190060	0.0071
C	-8.988115	6.927070	-1.297535	0.2170

R-squared	0.994917	Mean dependent var	7.032058
Adjusted R-squared	0.988270	S.D. dependent var	0.784971
S.E. of regression	0.085017	Akaike info criterion	-1.799686
Sum squared resid	0.093962	Schwarz criterion	-0.967049
Log likelihood	45.89514	Hannan-Quinn criter.	-1.528267
F-statistic	149.6782	Durbin-Watson stat	2.059283
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model

Source Authors' computation, 2026.

The ARDL Bounds Test

As observed in Table 3, the unit root estimations result for variables in model one, the variables are integrated of different order i.e. stationary at a level and first different I(0) and I(1). Based on the unit root result, the study utilized ARDL Bound in an attempt to explore the likelihood of the presence (or otherwise) of a long-run association between the variables. Having utilized the ARDL Bound technique, the cointegration test does not apply. Based on the Bound test results in Table 4 the F-statistics estimate (value) is compared with the upper Bound value at a 5% critical level. The result indicates the presence of a long-run association within the model.

Table 5: ARDL Bounds Test

Test Statistics	Value	K	Significance	I_O	I_1
F-Statistics	14.21250	4	10%	2.45	3.52
			5%	2.86	4.01
			2.5%	3.25	4.49
			1%	3.74	5.06

***Source** Authors' computation, 2026.*

The Long-Run Estimates

Based on the results of the Bound test which indicate that the variables are cointegrated as observed in Table 6. Below are the long-run coefficient results of the ARDL method presented in Table 6.

Table 6: The ARDL Long Run Cointegration

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGLABOR	1.465606	0.608232	2.409617	0.0315
LOGFDI_OUTFLOW	-0.161034	0.068916	-2.336678	0.0361
K	-0.058544	0.009158	-6.392453	0.0000
FDI_INFLOW	0.249734	0.069332	3.602002	0.0032
C	-14.149442	10.779057	-1.312679	0.2120

Note: *** and ** denotes the level of significance at one percent and five percent, respectively.
Source: Authors' computation, 2026

The estimation result on labor indicates a positive and significant coefficient at 5 percent level of significant. This means a unit increase in labor results in a 1.46 percent increase in economic growth in Nigeria. These imply that rise labor stimulate economic growth in Nigeria in the long run. Our results lend support to studies by Hye and Wizarat (2013) who found positive influence of labour on economic growth. It goes against studies by Law and Azman-Saini (2013), Haruna and Bakar (2020) and Naveed and Mahmood (2017) who found labour to be discouraging economic growth. The results on FDI_OUTFLOW reveal a significant coefficient at 5 percent, and a negative coefficient. These imply that a one percent increase in FDI_OUTFLOW leads to -0.16 percent decrease in economic growth in Nigeria in the long run. These means that FDI_OUTFLOW influence economic growth in Nigeria. This means when there is high FDI flowing out of the economy, economic growth is affected negatively.

The result of capital stock indicates a significant and a negative coefficient at 1 percent level of significant. This means that a one percent increase in capital stock results in -0.05 decrease in economic growth in Nigeria. This implies that capital hampered growth in the five selected SSA countries in the long run. The negative coefficient of capital signifies the paucity of capital needed to drive growth in the sampled countries. This implies that Nigerian level of capital is insufficient to accelerate the necessary investment. These imply that capital stock reduces economic growth in Nigeria in a long run. This will engage more labour in the productive sector. The outcome is in line with studies by Haruna and Bakar (2020) and Owusu and Odhiambo (2015) who found negative impact of capital stock on economic growth. It runs contrary to studies by Naveed and Mahmood (2017) and Law and Azman-Saini (2013) who found positive influence of capital stock on economic growth.

The result of FDI_INFLOW indicates positive and significant coefficient at 1 percent level of significant. This implies that a one percent increase in FDI_INFLOW results to 0.25 percent rise in economic growth. This means that FDI_INFLOW does enhance economic growth in Nigeria in the long run. The finding is supported by Shittu et al. (2020) and Opoku, Ibrahim et al. (2019) who finds positive influence of FDI on economic growth. It runs in disagreement with studies by Adams and Opoku (2015) and Sokhanvar (2019) who reported negative influence of FDI on economic growth.

The ARDL Short Run

The short-run estimation coefficients are depicted in Table 7. The short-run estimation presents the convergence condition of the model to the equilibrium position. The conditions for the convergence ECT to the equilibrium is that the cointegration equation coefficient must be less than one, negative and significant. As observed, the coefficient of ECT is significant, less than one, and negative. These imply that the speed of adjustment for Nigeria back to equilibrium position is 63%.

Table 7: *ARDL Short Run Cointegration*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(logLABOR)	-1.866400	1.489338	-1.253175	0.2322
D(logLABOR(-1))	0.387748	1.338257	0.289741	0.7766
D(logLABOR(-2))	-2.824042	0.875952	-3.223969	0.0067
D(logFDIOUT)	0.010934	0.025744	0.424730	0.6780
D(logFDIOUT(-1))	0.044066	0.022587	1.950909	0.0730

D(logFDIOUT(-2))	0.029507	0.021101	1.398324	0.1854
D(K_GDP)	-0.009102	0.008309	-1.095447	0.2932
D(K(-1))	-0.006059	0.011872	-0.510382	0.6183
D(K(-2))	0.029247	0.010984	2.662751	0.0195
D(FDIIN)	0.027207	0.021535	1.263406	0.2286
D(FDIIN(-1))	-0.016890	0.021999	-0.767756	0.4564
D(FDIIN(-2))	-0.062510	0.019595	-3.190060	0.0071
CointEq(-1)	-0.635227	0.123992	-5.123148	0.0002

NOTE: *, **, and * denote the level of significance at one percent, five percent, and ten percent, respectively.**
Source *Authors' computation, 2026.*

As observed in Table 7. In the short-run, the estimation result of labor suggests a negative and significant coefficient at lag 2. This means that one percent increase in labor leads to -2.82 percent in the short-run. This implies that labor reduces economic growth. The estimation result of FDI_OUTFLOW indicates a positive and significant coefficient at 10 percent significant level. This means that a one percent increase in FDI_OUTFLOW level results in an 0.04 percent increase in economic growth in Nigeria in the short run. This implies that FDI net outflow enhance growth. The estimation result on capital stock indicates a positive and significant coefficient at 1 percent significant level. This means that a one percent increase in capital stock leads to 0.02 percent increase in economic growth in Nigeria in the short run. The result on FDI_INFLOW indicates a negative and positive coefficient at lag 2. This means that a one percent increase in FDI_INFLOW leads to -0.06 percent decrease in economic growth in Nigeria in the short run. The cointegration equation indicates the speed at which the economy can recover back to equilibrium position. The coefficient indicates that the economy will recover at 63% speed of adjustment to equilibrium position.

Diagnostic Checking

The study conducts various post-estimation diagnostic checks to prove the authenticity of the estimation results above. The study employed the Breusch-Godfrey autocorrelation LM test to check for the presence of serial correlation in the series, and the Breusch-Pagan test for heteroskedasticity to check whether the model is homoscedastic or heteroskedastic.

Table 8: Diagnostic Tests

Test	F-statistic	Chi-square	Probability
Breusch-Godfrey LM Test	0.392796		0.6843
Breusch-Pagan	0.561363		0.8686
Jarque-Bera			0.428

Note: *, **, and * denotes the level of significance at one, five, and ten percent, respectively.**
Source: *Authors' computation. 2026.*

As observed in Table 8, the estimation results of Breusch-Godfrey LM indicate that the series is free from the problem of serial correlation based on the insignificant probability value at 0.6843. Furthermore, the model is free from the heteroskedasticity problem with an insignificant probability value at 0.8686. Moreover, the series is normally distributed with an insignificant Jarque-Bera probability value at 0.428.

The results of the study have provided some important insides. Firstly, evidence has shown that the inflow of foreign direct investment encourages economic growth in Nigeria. In view of the fact that FDI remains the highest source of capital inflow and the most reliable source of growth-propelling technologies and FDI fills the needed investment gap, this raises the efficiency of production and spurs growth. The study lend support to studies by Eudelle & Shrestha (2017), Shittu, W. O., et al. (2020), Sokhanvar, A. (2019), and Taylor, (2020) who also reported positive impact of foreign direct investment on economic growth. The neoclassical theory maintains that FDI impacts the economy's growth via per person capita accumulation and efficiency of investment. According to neoclassical theory, FDI brings new technology, which improves capital and labor; increased productivity brings returns on investment and economic growth. Secondly, the result indicate that outward FDI is negatively affecting economic growth in Nigeria. This finding is consistent with numerous literature which classified outward FDI as capital flight. Capital flight is a term that

describes the movement of capital or financial assets from one country to another, usually due to negative events or policies that affect investor confidence or returns (Boyce & Ndikumana, 2015; Nosrati, et al, 2023; Tamiru, 2019).

CONCLUSION AND RECOMMENDATIONS

The study examined the impact of foreign direct investment on economic growth in Nigeria. Also, the study investigates the impact of foreign direct investment on economic in Nigeria. The study was able to examine foreign direct based inward and outward of Nigeria on economic growth. The section provides a summary of the findings, policy implication, limitations and recommendations for future study. Results of our research reveal that foreign direct investment inflow have a greater influence on the economic growth in Nigeria. Also, foreign direct investment inflow has a positive influence on output growth. Whereas, foreign direct investment outflow has a negative influence on economic growth in Nigeria.

The outcome reveals that foreign direct investment inflow is critical to improving the economic growth in Nigeria. Therefore, foreign direct investment inflow should be enhanced, in order to stimulate the economic growth in Nigeria.

1. Foreign direct investment outflow should be discouraged, in order to enhance economic growth in Nigeria.
2. The outcome reveals that foreign direct investment inflow is critical to reducing poverty. Therefore, foreign direct investment inflow should be enhanced, in order to stimulate the economic growth in Nigeria.

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