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# Foreign Direct Investment and Economic Growth in Nigeria from 1991 to 2021

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**Abstract:** This research investigates the impact of Foreign Direct Investment (FDI) in developing economies growth, with a specific emphasis on Nigeria. The rate to which FDI affects the Gross Domestic Product (GDP) of Nigeria is evaluated. Utilizing the VECM (Vector Error Correction Model), the study examines both the short and long-term relationship of the dependent variable and key macroeconomic factors such as unemployment, interest rate, gross domestic investment (independent variables) amongst others. Additionally, test for normality and stability inclusive of residual autocorrelation test were performed adopting the Jarque-Bera and Lagrange Multiplier. Increase in the awareness of numerous opportunities of investment and stock market activity to enhance the capital market that will bring about a reduction in the petroleum industry reliance were recommended by the paper.

**Keywords:** gross domestic product; real exchange rate; vector error correction

**JEL Classification:** according to the JEL Classification System

## 1. Introduction

Foreign capital inflows enable less developed countries to generate foreign revenue through commercial activities, investments and financial support from more developed nations. Makao (2021) viewed it as a highly valued resource for financing and building capital, facilitating technology transfer. Investment is the process of

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suspending immediate consumption in the expectation of greater and better consumption in the future (Okereke, 1997). Meanwhile, investment serves as human development and economic growth brainbox (Liesbeth et al., 2009; Torabi, 2015).

International investment has been widely acknowledged in significantly contributing to the GDP growth and economic development of many developing economies, including those in ASEAN, by facilitating increased income, employment, technology transfer, skill development, and savings. These inflows have led to higher productivity and industrial output, which are critical drivers of GDP growth (Alfaro, 2017). To this end, it is instructive to note that investment in Nigeria territory comprises of local and international investments.

According to the World Bank Statistical Atlas Data (2023), Nigeria is one of the most populated Africa countries with a population of about 219 million, a high demand for products and one of the most developed in West Africa with a Gross Domestic Product (GDP) of $1.085 Trillion as at 2022 Nigeria attracting foreign direct investment (FDI) over the years. However, international investment in Nigeria has experienced fluctuations with a notable decline in recent years due to factors like security concerns, economic instability, and regulatory obstacles. UNCTAD (2020) reported that FDI inflows to Nigeria dropped from $4.9 billion it had 2016 to $3.3 billion as at 2019 and further to $2.3 billion in 2020. Despite efforts to diversify the economy, the country's FDI remains heavily concentrated in the energy sector, which has faced worldwide price volatility. Nevertheless, Nigeria remains a significant investment destination in Africa, offering potential for growth with reforms aimed at improving the business environment.

Anyaehie and Areji (2015) highlighted that despite this advantage, 97.5% foreign exchange earnings and budgetary revenues of 80% are derived from the nations over dependence on its oil sector. Moreover, despite its burgeoning population, good environment and land mass, the Nigerian economy still encounters significant economic challenges such as erratic power supply, poor infrastructural facilities and socio-economic hemorrhaging (Ogbonna, 2012). This suggests that the level of FDI to Nigeria may not have translated to economic growth. Therefore, this study aims to examine the influence of FDI on economic growth in Nigeria over a span of three decades.

## 1.1. Statement of Problem

Nigeria is a well-positioned country for attracting international investment from advanced economies due to its vast human and natural resources. With a large population, abundant natural resources, a skilled labor force, and entrepreneurial spirit, Nigeria holds great potential to attract significant FDI inflows.

The Nigerian government, through its economic development programs, aims to create an environment that fosters FDI inflows to stimulate economic growth and enhance the nation's GDP. By attracting FDI, Nigeria can improve infrastructure, enhance domestic industries, and promote innovation, all of which contribute to higher national output and economic resilience. However, challenges such as political instability, corruption, economic crises, inflation, exchange rate fluctuations, and insecurity have hindered the consistent flow of FDI, limiting its potential to boost Nigeria's GDP. These issues significantly hinder FDI inflows, thereby limiting economic growth. Empirical studies, such as Yusuf and Mohd (2021), show that political instability and insecurity increase investment risks, discouraging long-term capital commitments. High inflation, as observed in Nigeria and Argentina, erodes purchasing power and raises operational costs, reducing investor confidence. Corruption increases business costs and deters investors, as evidenced by studies linking high corruption levels in sub-Saharan Africa to lower FDI inflows (Donaubauer, Kannen & Steglich, 2022). Exchange rate volatility, seen in emerging markets like Brazil and Turkey, creates financial uncertainty, affecting profit repatriation and deterring investors (Zafar, 2023). Collectively, these factors reduce capital accumulation, slow industrialization, and hinder productivity growth, ultimately stalling GDP expansion. Without addressing these issues, the full rewards of FDI such as employment creation, technological adoption, an increase in domestic savings remain constrained, thereby affecting the country's overall economic performance.

## 2. Conceptual Framework

The Nigerian economy grapples with daunting economic challenges such as insufficient resources for sustained development, prevalent poverty, underutilization of capacity and elevated unemployment which makes it increasingly difficult to fulfill the Sustainable Development Goals (SDGs). Anyanwu (2017) discovered that policymakers at local, national, and international levels now prioritize technology transfer through foreign investment as a cornerstone for economic recovery and growth. This strategy is vital for closing the technology and resource gaps in underdeveloped countries and for preventing additional debt. In countries such as Nigeria, international capital is crucial for enhancing labor productivity and driving employment (Li & Tanna, 2019).

### 2.1. Concept of Economic Growth

Josu and Ezun (2015) opined that since the era of Adam Smith stemming down to keynes and Karl Marx, economists have been intrigued by the concept of economic growth. Economic growth refers to a consistent and measurable rise in national

income or capital output, alongside growth in a country's working population, consumption levels and trade volume. In simple terms, it means an expansion in national income arising from an increment in overall production within an economy. While it typically results in overall improvements in the production process, these gains are not guaranteed. This brings about an increase in incomes, inspiring consumers to open their purse to buy more, which indicates a higher material quality life and an improved standard of living (Jones, 2016).

Economic growth is typically represented as a function of physical capital, human capital, labor force and an improved level of technology. As a result, it leads to a rise in both the standard and capacity of working age, improved materials to work with due to an advanced level of technology and when it continues over a long period of time it yields economic development. Hlaváček and Bal-Domańska (2016) described economic growth as an increase in national income per capita analyzed quantitatively by examining the correlation amongst endogenous variables. To be more explanatory, national wealth and production strength are augmented due to an increment in national income, gross domestic product and gross national product expressed in absolute terms per capita.

## 2.2. Concept of Foreign Direct Investment

Foreign direct investment (FDI) has been defined in various ways by different institutions and scholars, but the core concept remains consistent. FDI is defined as an investment of capital and finances in ventures by individuals in a country into another overseas country according to The United Nations (2011) which not only views foreign capital as a form of investment but also emphasizes the aspect of incorporated benchmark. FDI is defined by the United Nations Conference on Trade and Development (UNCTAD, 2011) as a situation whereby foreigners whether individuals, organizations or governments manage and control their business ventures in other economies.

In a similar vein, the Organization for Economic Cooperation and Development (OECD, 1992) proposed that an investment where a shareholder owning at least 10% of a company's stocks exerts significant influence over its management can be related to foreign direct investment. Corroborating the definitions above, Borin and Mancini (2016), disclosed that international capital encompasses organizations that both operate and oversee productive activities across multiple countries. Additionally, Contractor et al. (2020) states that foreign capital involves investing in companies located in a foreign country through a process that typically entails acquiring an existing business or establishing a local production facility.

## 2.3. Rationale for the Attraction of FDI by Developing Countries

The Less Developed Countries (LCDs) now must depend very much on FDI for so many reasons, some of which are highlighted by Asiedu (2002), Long et al. (2017) and Pavlínek (2022). The influx of foreign capital, especially FDI, plays a crucial task in enhancing labor productivity while also enabling the employment of a larger workforce. Numerous nations, thus aim to enhance their business environment, driven by the goal of attracting these vital investments. Resource mobilization, structural reforms, the creation of a conducive environment for FDI are among the core elements of the New Partnership for Africa's Development (NEPAD). One of its key objectives is boosting the pool of available capital to $64 billion, ensuring that African economies have the necessary financial resources for sustainable growth.

Nigeria's abundance in natural resources and large market size, stands as a prime destination for investment influx in Africa. Over the past decade, it frequently positioned within the top three Sub-Saharan countries receiving significant foreign investments. Studies, such as those by Adeniyi (2020) and Alhassan et al. (2024), have demonstrated attracting international capital is among the quickest and most effective strategies to accelerate economic, infrastructural, and social development in emerging markets. A nation with a high population and an active working force holds strong potential to attract multinational enterprises seeking to leverage abundant, low-cost labor and a vast consumer base. This phenomenon is exemplified by China's dominant position in global manufacturing and production. Similarly, in less developed countries (LDCs), capital influx serves as a critical driver of development by facilitating capital inflows, improving the business environment, and optimizing natural resources and market opportunities. In the case of Nigeria, its vast resources, expanding market, and dynamic workforce position it as a strategic hub for FDI. This underscores the significance of FDI in enhancing productivity, infrastructure, and overall economic development, aligning with the core focus of this study examines the connection between international capital influx and economic growth of Nigeria.

In today's globalized landscape, Pigato (2001) asserts that traditional determinants of investment namely, political and macroeconomic stability, the presence of natural resources, and access to a large, growing market continue to play a crucial role. According to Javorcik, Turco and Maggioni (2018), there are new international finance determinants inclusive of favorable conditions for FDI, reduced transaction and business costs, robust supplier networks, as well as cost-effective infrastructure and skilled human capital. A positive foreign direct investment environment is characterized by a clear and non-discriminatory governing framework, robust competition policies and a streamlined legal system, all of which contribute to creating an attractive investment climate. This environment also benefits from

minimal transaction and operational costs which include favorable investment, regulations on trade, and efficient tax and legal systems. Moreover, countries with dynamic local firms can attract higher-quality FDI, as foreign companies often outsource services and parts of their production processes to these domestic businesses. In addition, the growing demand for skilled labor with diverse modern skills, rather than low-cost, unskilled workers, further enhances a country's appeal. Finally, the presence of low-cost infrastructure, such as efficient communication systems and transportation networks, both within and beyond the country, is essential for attracting foreign investment (Biglaiser & Lee, 2019).

### 2.4. FDI and the Nigerian Economy

Throughout the years, Nigerian political leaders have regarded investment of expatriates as a key tool for the nation's growth economically and politically. Consequently, government policies have emphasized indigenization through the Nigeria Enterprise Promotion Decree (NEPD), which seeks to regulate investments by capping foreign ownership participation at 40%. Economic growth results from accumulation of factors of production or from improvements in technology or both (Zamann & Goschin, 2010).

Economic theory provides 2 approaches to analysing the linkage between FDI and the host countries economic growth (Bermejo & Werner, 2018). Approach 1 is baseds on the international trade theory used by MacDougall (1960) who utilized a comparative-static analysis within a partial equilibrium framework to analyze how incremental increases in foreign investment are allocated. According to this approach, inflows of foreign capital whether FDI or portfolio capital are expected to boost the $MP_L$ while decreasing the $MP_C$ in the recipient country.

Approach 2 moves away from theory of trade and shifts toward industrial organization theory, a concept pioneered by Hymer (1976). It starts by analyzing why companies decide to invest overseas to manufacture the products they produce domestically. Kindleberger (1966) contended that the success of direct investment depends on the presence of imperfections in markets for goods and production factors (including technology) or on market separations caused by government interventions or firm actions that disrupt competition. Firms funding overseas go beyond just importing assets into a recipient economy; widespread innovations and technical know-how are contributed thus influencing competition and market systems inside recipient nations which account for the secondary effects generated by FDI influxes.

Rozen-Bakher (2017) observed that more expectations are placed on foreign capital to lessen skills and resource limitations of developing economies. Incidentally, Mariotti and Marzano (2021) points out different principal restrictions to the

expectation that FDI will have a positive impact on host countries. Firstly, countries with higher growth prospects tend to attract more investment because of greater returns they offer due to the observed positive relationship between FDI and economic growth in cross-country regressions. This suggests that causality may flow between the economy's growth to FDI influx, emphasizing the necessity for a simultaneous equation approach model to determine which factor drives the other. Second, multinational corporations often raise the necessary capital for their investments, which may not always directly benefit the host country's financial system or economy.

## 3. Materials and Methods

The study employed the Ordinary Least Squares (OLS) regression method and utilized secondary data spanning from 1991 to 2021, sourced from the World Data Index (WDI).

Model Specification

The framework for this study was adopted from findings of Njie and Badjie (2021). The econometrics model for the findings is given as:

GDP = INT + FDI + GDI + UNEM + INF+ EXR…………………………………1

In linear form, equation (1) can be transformed as:

$GDP_t = \beta_{0+} \beta_1 INT_t + \beta_2 GDI_t + \beta_3 FDI_t + \beta_4 UNEM_t + \beta_5 INF_t + \beta_6 EXR_t$ …..……..2

which is the mathematical form of the equation.

$GDP_t = \beta_{0+} \beta_1 INT_t + \beta_2 GDI_t + \beta_3 FDI_t + \beta_4 UNEM_t + \beta_5 INF_t + \beta_6 EXR_{t+}\mu_t$……..3

Equation 3 above shows the econometric form of the equation and the error term ($\mu t$) which is a random variable that has well defined probabilistic properties. It is assumed to capture other exogenous factors that are capable of influencing investment growth.

## 4. Data Analysis and Discussion

**Table 1. Macroeconomic Indicators**

| Year | GDP | INT | FDI | EXR | GDI | UNEM | INF |
|------|-----|-----|-----|-----|-----|------|-----|
| 1991 | 0.3583526 | 0.9908473 | 1.4503178 | 8.04 | 59.877847 | 4.1220002 | 13.006973 |
| 1992 | 4.6311929 | -14.987168 | 1.8760177 | 9.91 | 53.501501 | 4.0890002 | 44.588843 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1993 | -2.0351188 | -7.0524747 | 4.84779 | 17.3 | 50.902185 | 4.1020002 | 57.165253 |
| 1994 | -1.8149245 | -15.920233 | 5.7908473 | 22.33 | 46.122877 | 4.085 | 57.031709 |
| 1995 | -0.0726648 | -31.452566 | 0.7621956 | 71.7 | 46.02292 | 4.0609999 | 72.835502 |
| 1996 | 4.195924 | -5.2607841 | 0.977521 | 84.58 | 42.417227 | 4.027 | 29.268293 |
| 1997 | 2.9370994 | 12.126612 | 0.8622763 | 84.58 | 44.315956 | 4.0149999 | 8.5298742 |
| 1998 | 2.5812541 | 11.484669 | 0.5486162 | 84.7 | 37.624523 | 3.9990001 | 9.9963781 |
| 1999 | 0.5841269 | 6.0472483 | 1.6925575 | 84.7 | 46.552643 | 3.99 | 6.6183734 |
| 2000 | 5.0159348 | -1.1408886 | 1.6417393 | 85.98 | 57.160473 | 3.954 | 6.9332922 |
| 2001 | 5.9176847 | 12.138702 | 1.6082842 | 99 | 37.747306 | 3.9349999 | 18.873646 |
| 2002 | 15.329156 | 3.0235423 | 1.9647268 | 109 | 34.02678 | 3.882 | 12.876579 |
| 2003 | 7.347195 | 9.9357134 | 1.9114635 | 114 | 33.554596 | 3.8989999 | 14.031784 |
| 2004 | 9.2505582 | -2.6048471 | 1.3740862 | 127 | 35.729702 | 3.8759999 | 14.998034 |
| 2005 | 6.4385165 | -1.5936805 | 2.82883 | 132 | 35.19804 | 3.8710001 | 17.863493 |
| 2006 | 6.059428 | -5.627968 | 2.0560238 | 128.5 | 44.331283 | 3.8559999 | 8.2252215 |
| 2007 | 6.5911304 | 9.1871712 | 2.1899343 | 120 | 24.38035 | 3.8369999 | 5.388008 |
| 2008 | 6.7644728 | 6.6849086 | 2.4312191 | 115.5 | 30.440305 | 3.819 | 11.581075 |
| 2009 | 8.0369251 | 18.180002 | 2.9313362 | 145 | 23.251508 | 3.796 | 12.55496 |
| 2010 | 8.0056559 | 1.0677361 | 1.6584806 | 148.21 | 23.993166 | 3.7780001 | 13.720202 |
| 2011 | 5.3079242 | 5.6855799 | 2.1545983 | 151.05 | 25.399993 | 3.77 | 10.840028 |
| 2012 | 4.2300612 | 6.2248086 | 1.5390242 | 155.09 | 33.176616 | 3.7420001 | 12.217782 |
| 2013 | 6.6713354 | 11.201622 | 1.0802373 | 153.21 | 19.954859 | 3.7 | 8.4758273 |

| 2014 | 6.3097187 | 11.356213 | 0.825653 | 170 | 21.787761 | 4.5599999 | 8.0624858 |
| 2015 | 2.6526933 | 13.596153 | 0.6195457 | 199 | 15.490071 | 4.3099999 | 9.0093872 |
| 2016 | -1.6168689 | 6.6862336 | 1.099404 | 390 | 13.080437 | 7.0599999 | 15.675341 |
| 2017 | 0.8058866 | 5.7905669 | 0.9322798 | 331.71 | 15.469853 | 8.3900003 | 16.52354 |
| 2018 | 1.9227573 | 6.0559772 | 0.5016785 | 360 | 17.79972 | 8.4560003 | 12.094732 |
| 2019 | 2.2084293 | 4.5221885 | 0.7362051 | 305 | 19.833867 | 8.5299997 | 11.396795 |
| 2020 | -1.7942531 | 5.3712802 | 0.514393 | 361 | 27.381553 | 9.7139997 | 13.246023 |
| 2021 | 3.6471865 | 1.2277185 | 0.551772 | 435 | 32.735066 | 9.7880001 | 16.952846 |

*Source: WDI Bulletin*

ECM Results

Method: OLS Sample (adjusted):1991-2021

Included observations: 30 after adjustments

**Table 2. Short-run Relationship Results**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(FDI) | 0.011761 | 0.484270 | 0.024285 | 0.9808 |
| D(GDI) | -0.173228 | 0.086097 | -2.012011 | 0.0566 |
| D(INF) | -0.164412 | 0.061897 | -2.656216 | 0.0144 |
| D(INT) | -0.223520 | 0.082722 | -2.702049 | 0.0130 |
| D(UNEM) | -2.041224 | 1.196739 | -1.705655 | 0.1022 |
| D(EXCH) | -0.002335 | 0.016204 | -0.144086 | 0.8867 |
| ECT (-1) | -0.666869 | 0.211209 | -3.157387 | 0.0046 |
| C | 0.289285 | 0.563663 | 0.513222 | 0.6129 |
| R-squared | 0.520084 | Mean dependent var | | 0.109628 |
| Adjusted R-squared | 0.367383 | S.D. dependent var | | 3.594306 |
| S.E. of regression | 2.858810 | Akaike info criterion | | 5.161866 |
| Sum squared resid | 179.8015 | Schwarz criterion | | 5.535519 |
| Log likelihood | -69.42800 | Hannan-Quinn criter. | | 5.281401 |
| F-statistic | 3.405908 | Durbin-Watson stat | | 1.534877 |
| Prob(F-statistic) | 0.012815 | | | |

The absolute value of the ECM shows how equilibrium is regained in the system ensuing a provisional shock. The size of the error term indicates the rate at which the system corrects any disequilibrium, returning to long-run equilibrium through short-

run adjustments. The ECT coefficient (-1), which is negative (-0.666869), suggests that 66.69% of the disequilibrium is corrected each year in the short run to restore the long-run equilibrium. This means that the system adjusts to equilibrium in the subsequent year 2021 after the sampled period at a speed of 66.69%.

Thus, by estimating the results of the ECM, we have

$\Delta GDPt = 0.289285 + 0.011761\ \Delta\text{FDI}t - 0.17328\ \Delta\text{GDI}t - 0.164412\ \Delta\text{INF}t - 0.223520\ \Delta\text{INT}t - 2.041224\ \Delta\text{UNEM}t - 0.002335\ \Delta\text{EXCH}t - 0.666869\ ECTt + \varepsilon t$ ……………………………………………………………………………….. 4

As such, this shows that in the short-run, only FDI among the variables positively affects the Gross Domestic Product while GDI, INT, INF, UNEM and EXCH are negatively affecting the GDP in Nigeria between 1991-2021. Thus, the result indicates that a 1% increase in the interest rate will lead to a 22.5% decrease in the economy's GDP which tends to be significant.

It was also noticed that 1% change in FDI, will help increase GDP by 1.17% in the short run, though not statistically significant. Likewise, a 1% increase in GDI brought about a decrease of 17.32% in the GDP of the Nigeria economy. Also, rate of inflation increments by 1%, lowered Nigeria's GDP by 16.44% but not significant. For unemployment a 1% increase in it tends to bring about a reduction in the GDP at about 200.04% but not significant and for Exchange rate, a 1% increase in it brought about 0.23% decrease in the level of GDP but not statistically significant at all in the short run.

Also, the probability of the F-statistic suggests that the variables are not jointly significant in the short run. As a result, the R-squared value indicates that, in the short run, fluctuations in the independent variables affect the dependent variable by 34.05%. This shows that the remaining 65.95% are explained in other variables not specified in the short-run ECM.

However, there is also a need to evaluate the long run correlation amongst the variables using the ARDL model having the dependent variable, GDP. As such, the model considers a variable ideal number of lags to seizure series generation techniques from general to specific modeling, as revealed by Pesaran, Yongcheol and Richard (2001), which is one of the benefits that led to the selection of the ARDL model for the current investigation (Laurenceson & Chai, 2003). Therefore, in the long-run term, the ARDL explains the relationship between the independent variable and dependent variable. The ARDL also permits the use of unique optimal delays inside the model (Nkoro & Uko, 2016; Adenomon & Ojo, 2020). The ARDL model is also suitable for variables with varying orders of cointegration when analyzing long-run relationships.

ARDL Long-run results

Method: ARDL Sample (adjusted): 1994-2021 Included observations: 29 after adjustment Dynamic regressors (4 lags, automatic)

**Table 3. Long-run Relationship Results**

| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
|---|---|---|---|---|
| GDP(-1) | 0.427796 | 0.182987 | 2.337844 | 0.0360 |
| FDI | 0.329047 | 0.510043 | 0.645136 | 0.5301 |
| FDI(-1) | 0.581969 | 0.730901 | 0.796235 | 0.4402 |
| FDI(-2) | 1.925885 | 0.839303 | 2.294624 | 0.0390 |
| GDI | 0.115433 | 0.109825 | 1.051066 | 0.3124 |
| GDI(-1) | 0.203735 | 0.097745 | 2.084342 | 0.0574 |
| GDI(-2) | 0.252921 | 0.092177 | 2.743872 | 0.0167 |
| INF | -0.086398 | 0.086930 | -0.993879 | 0.3384 |
| INF(-1) | 0.119031 | 0.079623 | 1.494932 | 0.1588 |
| INT | 0.063256 | 0.125463 | 0.504179 | 0.6226 |
| INT(-1) | 0.289481 | 0.114204 | 2.534774 | 0.0249 |
| UNEM | -3.311175 | 1.458591 | -2.270119 | 0.0409 |
| EXCH | 0.036380 | 0.018709 | 1.944574 | 0.0738 |
| EXCH(-1) | 0.065224 | 0.019236 | 3.390692 | 0.0048 |
| EXCH(-2) | 0.015759 | 0.014833 | 1.062471 | 0.3074 |
| C | -25.01428 | 8.329981 | -3.002921 | 0.0102 |
| R-squared | 0.852905 | Mean dependent var | | 4.188870 |
| Adjusted R-squared | 0.683180 | S.D. dependent var | | 3.911423 |
| S.E. of regression | 2.201612 | Akaike info criterion | | 4.717358 |
| Sum squared resid | 63.01223 | Schwarz criterion | | 5.471729 |
| Log likelihood | -52.40170 | Hannan-Quinn criter. | | 4.953618 |
| F-statistic | 5.025226 | Durbin-Watson stat | | 2.751583 |
| Prob(F-statistic) | 0.002868 | | | |

*Note: The p-values and any other subsequent tests do not account for model selection.*

The long-run relationship can be estimated below as:

$GDPt = \beta0 + \sum \beta1 GDPt-1 + \sum \beta2 FDIt-1 + \sum \beta3 FDIt-2 + \sum \beta4\ GDIt-1 + \sum \beta3 FDIt-2 + \sum \beta4\ GDIt-1 + \sum \beta5 GDIt-2 + \sum \beta6 INFt-1 + \sum \beta7 INTt-1 + \sum \beta8 EXCHt-1 + \sum \beta9 EXCHt-2$…………………………………………………...5

Since, the model adopts the selected model of the 1, 2, 2, 1, 1 and 2 model, it can be estimated below:

$GDPt = \beta0 + \sum \beta1 GDPt-1 + \sum \beta3 FDIt-2 + \sum \beta5 GDIt-2 + \sum \beta6 INFt-1 + \sum \beta7 INTt-1 + \sum \beta9 EXCHt-2 + \varepsilon t$ ………………………………………………… 6

$GDPt = -25.01428 - 0.427796\ GDPt-1 + 1.925885\ FDIt-2 + 0.252921\ GDIt-2 +$

$0.119031\ INF_{t-1} + .0.289481 + INT_{t-1} + 0.015759\ EXCH_{t-2} + \varepsilon_t$ ……………...7

Table 3 provides evidence of a long-term relationship between Nigeria's GDP and key economic variables namely, Foreign Direct Investment (FDI), Gross Domestic Investment (GDI), inflation, interest rate, unemployment, and exchange rate from 1991 to 2021. The analysis reveals that FDI has a positive long-run impact on economic growth, with a 1% increase in FDI correlating with a 95% rise in GDP. Additionally, the effect of FDI is statistically significant at the 5% level.

The analysis reveals that interest rates have a positive relationship with GDP. Specifically, a 1% increase in interest rates is associated with a 28.94% rise in Nigeria's GDP, a result that is statistically significant at the 5% level in the long run. Similarly, Gross Domestic Investment (GDI) exhibits a positive correlation with GDP, where a 1% increase in GDI results in a 25.23% increase in GDP, also significant at the 5% level. Additionally, the inflation rate is observed to trend positively with GDP over the long term which shows that any 1% increase in the level of INF will bring about an 11.9% increase in the level of GDP but not significant at 5%.

Unemployment has a detrimental effect on Nigeria's GDP in the long run; specifically, a 1% increase in unemployment is associated with a reduction in GDP of over 300%, and this relationship is statistically significant at 5% level. In contrast, while the exchange rate has a positive effect—where a 1% rise in the exchange rate corresponds to a 1.58% increase in GDP—this impact is not statistically significant at the 5% level. Furthermore, the R-squared value indicates that 85.29% of the variation in GDP is explained by the independent variables in the model, with the remaining 14.71% attributed to other factors not included in the ARDL long-run model, suggesting that the model fits well. Additionally, an F-statistic of 5.025 with a p-value of 0.002868 demonstrates a strong linear relationship among interest rates, FDI, GDI, inflation, unemployment, exchange rate, and GDP for Nigeria from 1991 to 2021. There exists confirmation that autocorrelation is not present among the parameters thus indicating that the parameter estimates are efficient and reliable for forecasting Nigeria's economic productivity according to the Durbin-Watson statistic of 2.792096.

## 5. Conclusion and Recommendations

This study investigated the influence of Foreign Direct Investment (FDI) on Nigeria's economic development from 1991 to 2021. Findings reveal that well-managed FDI can stimulate economic activity, driving both short- and long-term growth and ultimately contributing to overall economic development. FDI is thus strategically important for developing and emerging economies, as these countries actively seek to attract FDI to overcome low domestic savings and insufficient

capital formation, thereby narrowing the investment gap with advanced economies. In summary, FDI, along with Gross Domestic Investment (GDI), interest rates, and inflation, significantly drives Nigeria's GDP growth, while unemployment remains a major obstacle to productivity. The study suggests that policies aimed at boosting FDI and addressing unemployment are crucial for sustaining economic growth in Nigeria. To achieve this, improving the investment climate through enhanced infrastructure, more favourable regulations, and greater political stability is essential. Policies that encourage domestic investment, such as facilitating access to finance and supporting key industries, will also be important in driving growth. Addressing unemployment through job creation programs and skill development initiatives is essential, as it significantly impacts GDP. Furthermore, while inflation's effect on GDP is minor, maintaining price stability through sound monetary and fiscal policies is necessary. The government should also ensure stable and manageable interest rates to encourage investment and monitor the exchange rate to prevent volatility. Finally, strengthening macroeconomic stability by reducing public debt and implementing prudent fiscal policies will help sustain long-term growth and economic resilience. By concentrating on these areas, Nigeria can foster an environment that supports long-term economic development.

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