

#### EFFECT OF FOREIGN DIRECT INVESTMENT ON GROSS NATIONAL INCOME IN NIGERIA, 2006-2017

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#### ABSTRACT

The study analyzed the effect of foreign direct investment on gross national income over the period of 2006- 2019. The main type of data used in this study is secondary; which were sourced from various publications of Central Bank of Nigeria, such as; Statistical Bulletin, Annual Reports and Statement of Accounts. The regression analysis of the ordinary least square (OLS) is the estimation technique that was employed in this study to determine the effect of the Direct Foreign Investment on gross national income in Nigeria. The cointegration test showed existence of a long run relationship and an indication that 1 cointegrating vectors exist at 5% level of significance among the variables which was corrected with error correction mode (ECM). The result showed that foreign direct investment had a positive effect on gross national income during the period 2006 - 2019. It also revealed that gross domestic product, exchange rate and unemployment rate has a positive effect on gross national income in Nigeria during the same period. The study recommends that government should try to develop trade zones, which are solely based on free economic movements and policies. The study recommends official re-consideration of different determinants of gross national income (GNI) attractions. Government incentives, infrastructure and policies should be put in place to make it easy for general foreign investors, to find Nigeria safe and reliable to invest. Finally, unique fiscal and monetary policies should be formed to strengthen the other macroeconomic variables which will help to overcome the situation of shocks in Nigeria while hosting Foreign Direct Investment inflow for future sustainable economic development.

**Key Words:** Foreign Direct Investment, Gross National Income, Exchange rate, Gross Domestic Product, Unemployment rate, Economy and Nigeria



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# 1. INTRODUCTION

Foreign direct investment (FDI) is a collection investment within a country that influences national economy. National output of national economy is the whole production of a country including the flow between sectors. It is often assessed using official system of accounting, which is present in every country. Although calculating vast number of each transaction is impossible for governments, but most of the fairly used systems produce accurate results. There is a direct connection between FDI and gross domestic product (GDP). Gross Domestic Product is method of calculating the market prices of all the final goods and services produced during a year, and adding all of them as a sum, minus the income of the non-resident population. GDP as income is the sum of all the income produced by the different sectors of economy in a country (Boyes & Melvin, 2012).

Furthermore, gross national income is a recently used term by different firms, like World Bank and other international organizations, as the substitute of the Gross National Product, which is the sum of GDP plus non-resident income from abroad. They are mainly used as yardstick for measuring economic developments. Conceptually, GNI and GNP are considered same (Peng, 2010).

There is a vast difference in the income per capita and the output per worker in between world's top rich countries, from other poor countries, while some of the poor countries have around 30% lower income values than their rich counterparts. Now, the question arises in the mind asking why is economic growth so important. This can be deduced from the fact that the higher the income rates of the country per capita, the higher the standard of living the country has. Although economic development is often seen as directly correlated to exploitation of natural habitats; it cannot be denied that those factors on the other hand improves the development of human life, living conditions and overall health status (Acemoglu, 2008).

In 1980s, it was seen that those countries which saw declining trend in commercial banking sought to attract foreign direct investment through tax incentives and sub diaries. Although it was not clear what is the direct effect of foreign investment on the economic growth of a reign, but many countries adopt mechanisms to attract foreign direct investment in their countries. Some theories suggest that the technological and business practices can be easily transferred to the poorer countries through foreign direct investment. On the other hand, some theorists suggest that foreign direct investment may slow down the resource allocation process and growth, if those economies already have trade, financial and business resources (Carkovic





& Levine, 2002). This study therefore focuses on the effect of foreign direct investment on the gross national income in Nigeria during the period.

#### 2. Literature Review

Foreign direct investment is a means, by which the residents of one country (base country) purchases the assets, in order to control the flow of production, distribution and other activities of a firm or an organization in a foreign country. The key point that differentiates foreign direct investment from portfolio investment is that foreign direct investment includes control interest. Foreign direct investment plays a vital role in transformation of economies because it substitutes the domestic savings and contributes to national capital (Moosa, 2002).

Foreign investment has always been of important support to Nigeria in bridging the gap in some macroeconomic fundamentals like Gross National Income, Gross Domestic product, exchange rate and Balance of Payment. It plays a crucial role in exchange rate, especially in determining the growth and the income level of the economy (Divya & Devi, 2014). It is classified as one of the most suitable inputs which give instant relief to a developing economy. It plays the role of stabilizing economy in the long run. The extent of the flow of foreign aid varies due to policy restriction of the different countries.

The emerging economies have a significant impact on foreign investment on their domestic investment levels as indicated by Shah, et al. (2019). As a part of foreign investment, Foreign Direct Investment (FDI) assists emerging economies with providing a significant impact on different macroeconomic variables and institutional variables in it (Uddin, *et al.* 2019). Also, the assistance in technological support in developing economies is always a factor in attracting FDI in different countries. Apart from that, it aids the governance of national economies (Kayalvizhi, *et al.* 2018). It should be noted that sector-specific usage of FDI has also been observed in recent times.

#### 2.1. Gross National Income

Gross National Income is a recently used term by different firms, like World Bank and other international organizations, as the substitute of the Gross National Product, which is the sum of GDP plus non-resident income from abroad. They are mainly used as a yardstick for measuring economic developments. Conceptually GNI and GNP are considered same (Peng, 2010).





The monetary income element is also captured by the Gross National Income (GNI), which is often regarded as an either complementary or alternative measure with respect to the GDP. In recent years, the GNI has been largely used, but we will show that contrary to the held view that GNI is the best indicator for a population's monetary income, as it fails to account for some key elements.

The GNI takes into account the fact that some incomes are generated in another country but accrue to the economy at stake and vice versa. However, what the GNI does not record are the so-called unilateral transfers, most importantly remittances. Their value in current prices has increased by seven times between 1990 and 2010 (see the World Bank Database) and they represent by far one of the largest types of monetary inflows for developing countries.

Studies are focusing on geographical incomes measured by GDP and their impact on FDI, but the concept of national income in Nigeria is ignored. The total income earned by residents of a country, whether staying in the own geographical region or overseas is measured by Gross National Income (GNI). The optimal progress of the country is measured by the growth in GNI. In Nigeria, GNI plays a vital role in the time of the business cycle. Especially, at the recession, the situation of economy becomes serious as it requires strong economic policies to overcome that period. Except for the help of foreign inflows, it is very difficult to adjust the shocks recurring from the economic cycle in a given country.

## 2.2. The GNI and the mobility of factors of production

As explained by the UN Systems of National Accounts (SNA) in the 2008 handbook (UN, 2008: 105), Some of the production of a resident producer may take place abroad, while some of the production taking place within the geographical boundary of the economy may be carried out by non-resident producer units (UN, 2008). In other words, a country's factors of production are not necessarily employed domestically, but may be hired abroad for foreign production process.

However, their remunerations will be (mainly) used in the domestic economy, where the factors of production dwell. This point was stressed among others by Sweeney (1999). He questioned the formativeness of GDP, given the weight of multinational corporation profits that were generated in Ireland, but repatriated to the head offices abroad (Sweeney, 1999). His claim was that the GNI was a much better indicator for living standards, as it measures of the





income generated by the resident factors of production, regardless of the country where they are employed.

# 3. THEORETICAL REVIEW

# 3.1. The Classic Theory of International Capital Flow

The Classic Theory of International Capital Flow Drawing an analogy with the pure theory of trade argues that if the rate of return on capital under autarchy varies across countries, the opening up of trade in capital will lead to a flow of capital from countries with lower returns to those with higher returns. Thus, FDI is a function of international differences in the rates of return on capital.

This theory suggests that if the rates of return on various investment projects across countries have a less than perfect correlation, a firm can reduce its overall risk exposure by diversifying its investment internationally. This theory, however, has been criticized over the fact that in a perfect capital market, firms need not diversify their portfolio internationally to reduce risk for their shareholders because individual investors can do so by directly diversifying their individual port- folios. Thus, under the assumption of perfect competition, the portfolio approach cannot explain international capital flow.

## 3.2. Empirical Review

Matthew and Ogunlusi (2017) examined the relationship between foreign direct investment and employment generation in Nigeria between 1981 and 2014. The study employed Johansen co-integration to detect the long run relationship among exchange rate, foreign direct investment, employment rate, trade openness, interest rate and total factor productivity. The result revealed that foreign direct investment had a positive and significant relationship with employment generation in Nigeria.

Pegkas (2015) found a positive long-run association between FDI flow and growth of the economy. Doytch and Narayan (2016) explored the causation between economic growth energy consumption and FDI flows. The analysis found that in the non-renewable energy sector, the effect is less and in the renewable sector, the impact is more.

Völlmecke, et al. (2016) explained the relationship of FDI with income in European economies. The results showed that there was less association of income with FDI, but a higher association with human capital. The study found more important input for income convergence



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as skilled labor. Goh (2017) examined the cointegration between FDI, GDP in Asian economies. The study found there are other factors than GDP to influence FDI in these economies.

Demir and Duan, (2018) analyzed the effectiveness of FDI flows into host country's economic growth in terms of productivity. The study showed that there was no significant impact of bilateral FDI on the growth. Gnangnon (2018) found a positive impact of FDI inflows on economic development in developing economies. The lower the extent of economic development, the higher is the extent of the impact of FDI.

Kumari and Sharma (2018) explained the causal relationship between FDI, economic growth and energy consumption in India. The study indicated that energy plays an important role in the valuation of GDP and GDP creates a vital role in attracting FDI in India. Mimouni and Temimi (2018) analyzed the influence of FDI on imports and gross capital formation. The study revealed that the impact is inconclusive. Also, the developing economies were having less regulation over the economic environment.

Sayari, et al. (2018) discussed the relationship between FDI and economic freedom. The result showed that there exists a long run association between these two variables. Brada, et al. (2019) examined the level of corruption and FDI inflows across countries. The result showed that home country economies are capable enough to deal with the corruption levels of host countries.

Harb and Hall (2019) analyzed the relationship between FDI inflow and economic growth in developing countries. The study revealed that the impact of FDI is positive on economic growth with diminishing returns. Ketteni and Kottaridi (2019) explained the effect of FDI on economic growth with the background of Multinational Enterprises (MNEs). The study explored the growth in economies if correct policies are implemented for expanding MNEs.

Nasir, et al. (2019) analyzed the relation between FDI, economic growth and financial development in Southeast Asian countries. The result showed a positive integration between them. Sarkodie and Strezov (2019) explored the positive correlation between FDI and economic growth in the presence of technology transfer and labor management in developing countries. Shi (2019) discussed the impact of FDI is more resilient in the long run than





preferably a short run impact. Uddin, et al. (2019) analyzed different factors imposing an effect on FDI in Pakistan.

The factors which were influential in recent times were properties rights, the infrastructural facilities and trade liberalization. Based on the empirical evidences, it was found that various studies have been formulated on the interrelation between FDI and the impact on different macroeconomic variables. Also, a considerable amount of studies is analyzed on exploring a relationship between FDI and economic growth at the background of other macroeconomic variables.

But no such study evaluated the relationship of FDI and economic growth taking the growth variable as Gross National Income (GNI) in Nigeria. Thus, the present study is specified on finding the effect of foreign direct investment on Gross national income nexus using current and expanded empirical evidence from Nigeria. The results will not only domesticate the effect but has established that the manifestation of the effects of the variables can be influenced by data characteristics of the geographical/economic setting of the study. The Nigerian market indices and other economic indicators constituted the variables of interest.

#### 4. METHODOLOGY

The study adopts the *ex post facto* which is a very common and ideal method in conducting research in business and social sciences. Simon and Goes (2013) sees *ex post facto* research as one which is based on a fact or event that has already happened and at the same time employs the investigation and basic logic of enquiry like the experimental method.

As for this work, there are two key reasons for the choice of the ex post facto method. Firstly, the data is *ex post* from the Central Bank of Nigeria sources. Secondly, the reported figures or proxies for the variables of interest are not susceptible to the manipulations or doctoring of the researcher because they are information in public domain and are easily verifiable.

Time series data used in this study is secondary; sourced from various publications of Central Bank of Nigeria, such as; Statistical Bulletin, Annual Reports and Statement of Accounts. The models used in this study are estimated using data on Direct Foreign Investment (DFI) and some macro-economic indicators, which include: Gross National Income (GNI) and Gross domestic product (GDP) for the period 2006 – 2019.





# 4.1. Model specification

To prove the long-run effect of the variables as identified in the literature, the presence of cointegration needs to be tested. The cointegrating regression focused on the level series of the reported FDI inflows and GNI stated as follows:

$$FDI_t = \alpha + \beta IGNIt + \mu_t \tag{1}$$

Where:

 $FDI_t$  = Annual foreign direct investment inflows (t)

 $GNI_t$  = Gross national income annually (t)

 $\beta$  = Coefficient of the parameter estimate

 $\alpha$  = Constant.

The model for the residual based test following Engel and Granger (1987) and Lee (1993) is stated thus:

$$\Delta y_t = \alpha_1 y_{t-1} + \varepsilon_t \tag{2}$$

 $\Delta u_t$  = estimated first differenced residual

 $\alpha u_{t-1}$  = estimated lagged residuals

 $\alpha_1$  = coefficient of parameter estimates

 $\varepsilon_t = \text{error term}$ 

The Error Correction Model after a confirmation of the existence of a cointegrating relationship amongst the variables is specified thus:

$$\Delta FDI_t = \alpha_0 + \alpha_1 \Delta GNI + \alpha_2 \, \mu_{t-1} + \varepsilon_t$$

 $\Delta$  = change in first difference operator

 $\alpha_1, \alpha_2$  = coefficient of the parameter estimates

 $u_{t-1}$  = error correction term

 $\varepsilon_t$  = random error term

The Model for the Pairwise Granger Causality Test is stated following Gujarati and Porter (2009) thus:

$$FDI_{t} = \sum \alpha GNI_{-t} + \sum \alpha_{I} FDI_{1-t} + \boldsymbol{u}_{It}$$



(3)



For  $FDI \rightarrow GNI$   $FDI_t = \sum \alpha_{IGNI_{1-t}} + \sum \alpha_{IFDI_{1-t}} + u_{2t}$ For  $GNI \rightarrow FDI$ 

(5)

 $\mathfrak{U}_{1 t}$  and  $\mathfrak{U}_{2 t}$  are the error terms

The regression analysis of the ordinary least square (OLS) is the estimation technique that is being employed in this study to determine the effect of foreign direct investment on Gross National Income in Nigeria (2006 - 2019).

The study modifies the model adopted by Shaar, Hussain and Halim (2012) who examined the relationship between foreign direct investment and unemployment rate in Malaysia from 1980 to 2010. GDP = f (unt, FDIt), where t is time trend, Unt, GDPt, FDIt are unemployment rate, gross domestic product and foreign direct investment respectively. In modifying the model, this study adds two variables which are gross national income and exchange rate. The empirical model of the study, therefore, is specified as follows:

 $\log GNI = \beta 0 + \beta 1 f dit + \beta 2 GDPt + EXR\beta 3 + UNR\beta 4 + \varepsilon.$ (6)

All the variables used in this study are converted to natural logarithms so as to minimize the impact of outliers and to obtain elasticity coefficients of these variables. Therefore, the model to be estimated is as follows: Gross national income (GNI) is positively and significantly influenced by the Foreign Direct Investment indices (Direct foreign investment, Gross domestic product, Unemployment rate and exchange rate from 2006 - 2019), which are formulated as follows;

GNI = f (FDI, GDP, EXR, UNR)

 $lnGNI = \beta 0 + \beta 1LnFDI + \beta 2LnGDP + \beta 3LnEXR + \beta 4LnUNR$ 

LnGNI = Gross National Income

LnDFI = Foreign Direct Investment

LnGDP = Gross Domestic Product

LnEXR = Exchange rate

UNR = Unemployment rate

 $\beta = intercept$ 





 $\beta 1 - \beta 4 =$  Coefficient of the independent variables



Figure 1: Graphic Analysis of the Variables

The above showed the movement of foreign direct investment inflow and gross national income of the country. It showed if inflows increase it will increase the volume of gross national income and verse versa. The trend in Foreign Direct Investment (FDI) is clearly showing the accelerated growth in FDI inflow in Nigeria within 2006 -2019.

| Table 1: Descriptive Statistics of the Variables |          |          |          |          |          |  |
|--|----------|----------|----------|----------|----------|--|
|  | FDI      | RGDP     | EXR      | UNR      | GNI      |  |
| Mean   | 5.52E+09 | 1.32E+11 | 196.7800 | 13.31000 | 3.83E+11 |  |
| Median   | 5.79E+09 | 28018885 | 158.7250 | 12.50000 | 3.84E+11 |  |
| Maximum  | 8.84E+09 | 5.68E+11 | 306.9500 | 23.90000 | 5.50E+11 |  |
| Minimum  | 2.00E+09 | 521.8000 | 117.9700 | 6.000000 | 2.31E+11 |  |
| Std. Dev.  | 2.15E+09 | 2.20E+11 | 74.50098 | 5.410262 | 9.12E+10 |  |
| Skewness   | 0.062753 | 1.071515 | 0.725994 | 0.614481 | 0.052483 |  |
| Kurtosis   | 1.940263 | 2.323312 | 1.793554 | 2.290936 | 2.247586 |  |
|  |          |          |          |          |          |  |
| Jarque-Bera                                      | 0.664296 | 2.946114 | 2.078871 | 1.174319 | 0.336667 |  |
| Probability                                      | 0.717381 | 0.229224 | 0.353654 | 0.555904 | 0.845072 |  |
|  |          |          |          |          |          |  |
| Sum  | 7.73E+10 | 1.84E+12 | 2754.920 | 186.3400 | 5.36E+12 |  |
| Sum Sq. Dev.                                     | 5.99E+19 | 6.30E+23 | 72155.15 | 380.5222 | 1.08E+23 |  |
|  |          |          |          |          |          |  |
| Observations                                     | 14       | 14       | 14       | 14       | 14       |  |
| Same Anthon's Estimated in                       |          |          |          |          |          |  |

Source: Author's Eviews Computation

The descriptive statistics above shows the basic aggregative averages like mean, median and mode for all the observations. The spread and variations in the series are also indicated using the standard deviation. Significantly, kurtosis which shows the degree of peakedness is also shown together with skewness which is a reflection of the degree of or departure from symmetry of the given series.





From the table above, the Jacque Bera Statistics which is a test for normality (a combined test of skewness and kurtosis) shows that all the distributions are not normally distributed. There is a very strong evidence to reject the null hypothesis that the variables are normally distributed. Some the variables have JB statistics with p-values greater than 0.05 respectively. With some of the variable having kurtosis in excess of 2, there is evidence of playtykurtic. Though this suggests a departure from normality, it is still consistent with behaviour of most economic and financial time series (Brooks 2010).

| VARIABLES | ADF Test  | CRITICAL     | PVALUE | Order of    |
|-----------|-----------|--------------|--------|-------------|
|           | Statistic | VALUES at 5% |        | Integration |
| FDI       | -1.808808 | -3.685068    | 0.0062 | 1(1)        |
| RGDP      | -1.045788 | -3.310543    | 0.007  | I(1)        |
| EXR       | -1.061941 | -3.439275    | 0.0063 | I(1)        |
| UNR       | -0.634115 | -2.162069    | 0.053  | 1(0)        |
| GNI       | -0.719565 | -2.323360    | 0.043  | 1(1)        |

| Table 2:  | Summary     | v of the | ADF | Unit  | Root | Test |
|-----------|-------------|----------|-----|-------|------|------|
| 1 4010 2. | N GATTITUGE | ,        |     | CIIIC | 1000 | 1000 |

Source: Author's computation from e-view8

The test for stationarity properties of the series following the Augmented Dickey Fuller statistics showed that FDI was stationary at 1 level, RGDP was at 1 level too and GNI was not stationary, EXR was stationary at 1 level and UNR was stationary at level.at all level. The ADF statistics for the respective variables were more negative than the critical values at 5% level of significance. The reported p-values are all less than 0.05 for which cause, the null hypothesis of the presence of unit root in all the variables is convincingly rejected.

| Unrestricted Cointegration Rank Test (Trace) |                                  |                                  |                                  |                            |  |  |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------|--|--|
| Hypothesized<br>No. of CE(s)                 | Eigenvalue                       | Trace<br>Statistic               | 0.05<br>Critical Value           | Prob.**                    |  |  |
| None *<br>At most 1<br>At most 2             | 0.905483<br>0.681199<br>0.030658 | 42.39968<br>14.09192<br>0.373649 | 29.79707<br>15.49471<br>3.841466 | 0.0011<br>0.0804<br>0.5410 |  |  |

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*MacKinnon-Haug-Michelis (1999) p-values

Source: Author's computation from e-view8

From Table there is a confirmation of the existence of a long run relationship and an indication that 1 cointegrating vectors exist at 5% level of significance since we cannot reject the null at almost 1 in the Trace Test table.





| Jnrestricted Cointegration Rank Test (Maximum Eigenvalue) |                                  |                                  |                                  |                            |  |  |  |
|---|----------------------------------|----------------------------------|----------------------------------|----------------------------|--|--|--|
| Hypothesized<br>No. of CE(s)                              | Eigenvalue                       | Max-Eigen<br>Statistic           | 0.05<br>Critical Value           | Prob.**                    |  |  |  |
| None *<br>At most 1<br>At most 2                          | 0.905483<br>0.681199<br>0.030658 | 28.30776<br>13.71827<br>0.373649 | 21.13162<br>14.26460<br>3.841466 | 0.0041<br>0.0608<br>0.5410 |  |  |  |

Table 4: johansen cointegration test (trace test)

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level \* denotes rejection of the hypothesis at the 0.05 level \*\*MacKinnon-Haug-Michelis (1999) p-values

Source: (Author's Computation Extract from eview)

The stands of Engel and Granger as well as Trace Statistics are further confirmed by Maximum Eigen Value Test which did not only show evidence of cointegration but also confirmed the existence of one cointegrating vectors. Since long run relationship has been established by the foregoing tests, it is now expedient to test for the speed of adjustment. This is done through the Error Correction Model.

| Ľ | Table 5: Error Correction Model (dingni = $c + dinidi + ect(-1)$ ) |              |           |           |              |  |  |
|---|--|--------------|-----------|-----------|--------------|--|--|
|   | Variable   | Co-efficient | Std Error | T-Stat    | Significance |  |  |
|   | D(LnFDI)   | -0.64072     | 0.76579   | -0.628664 | 0.0027       |  |  |
|   | D(lnGNI)   | -0.000060    | 0.76579   | -0.000020 | 0.0033       |  |  |
|   | ECT(-1)  | -0.6408      | 1.53158   | -0.628684 | 0.0060       |  |  |
|   | $D^{2}(0, CT) + 1$ $(1, D^{2}(0, C2T)) DW(1, 0.12) = 0$            |              |           |           |              |  |  |

m 11 **7 D** 

 $R^2$  (0.67), Adjusted  $R^2$  (0.6353), DW (1.812 approx. 2) Source: Author's computation from Eviews

This section presents the results of the ECM and the estimates of the short-run and longrun movements, as well as the error correction term. The table shows useful long-run information. The equilibrium adjustment coefficient (-0.6408) enters with a correct sign (negative). This suggests that FDI and GNI series converge to long-run equilibrium; deviations from this equilibrium It can also be observed that ECT(-1) coefficient tends to one, indicating that the speed of adjustment to equilibrium is fast. It follows that about 64% of the deviation from equilibrium path is corrected on a monthly basis.

## 5. RESULT AND DISCUSSIONS

The above regression analysis showed the result of the effect of foreign direct investment on gross national income.

| Dependent Variable: GNI    |  |  |
|----------------------------|--|--|
| Method: Least Squares      |  |  |
| Date: 12/17/20 Time: 03:02 |  |  |
| Sample: 2006 2019          |  |  |
| Included observations: 14  |  |  |
|                            |  |  |
|                            |  |  |





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| Variable           | Coefficien | Std. Error            | t-Statistic | Prob.    |
|--------------------|------------|-----------------------|-------------|----------|
|                    | t          |                       |             |          |
|                    |            |                       |             |          |
| С                  | 3.60E+11   | 1.81E+11              | 1.983958    | 0.0786   |
| FDI                | 9.499788   | 21.41799              | 0.443543    | 0.6678   |
| RGDP               | 0.209814   | 0.118843              | 1.765470    | 0.1113   |
| EXR                | 2.02E+08   | 4.96E+08              | 0.407185    | 0.6934   |
| UNR                | -7.28E+09  | 5.49E+09              | -1.325934   | 0.2175   |
|                    |            |                       |             |          |
| R-squared          | 0.429834   | Mean depe             | ndent var   | 3.83E+11 |
| Adjusted R-squared | 0.176427   | S.D. dependent var    |             | 9.12E+10 |
| S.E. of regression | 8.27E+10   | Akaike info criterion |             | 53.38842 |
| Sum squared resid  | 6.16E+22   | Schwarz criterion     |             | 53.61666 |
| Log likelihood     | -368.7190  | Hannan-Quinn criter.  |             | 53.36730 |
| F-statistic        | 1.696222   | Durbin-Watson stat    |             | 0.727281 |
| Prob(F-statistic)  | 0.234154   |                       |             |          |
|                    |            |                       |             |          |

Source: Author's computation from Eviews

### $GNI{=}\ 3.60 + 9.499 FDI + 0.2098 RGDP + 2.02 EXR - 7.28 UNR$

From the table foreign direct investment shows positive effect on gross national income. This is indicated by the t-value (9.499 with a p-value 0.67 > 0.05). It shows that if the volume of foreign direct investment inflows increases 1%, gross national income will increase at 3.60. The R<sup>2</sup> which is a show of the goodness of fit of the model is 42% which means that 42% of variation in GNI was explained by the regressors and about 58% of the relationship is explained by factors not captured by the model. The adjusted R<sup>2</sup> of about 17% takes account of a greater number of regressors if included and it still explains 42% variation in the dependent variable.

The F-statistics of (1.696, Pvalue of F-stat. = 0.234) at a critical value of 0.05 shows that the overall regressors are not significant during the period of study. This showed an inverse finding with the work of Shaar, Hussain and Halim (2012) where they examined the relationship between foreign direct investment and unemployment rate in Malaysia from 1980 to 2010. Gross domestic product, foreign direct investment and unemployment rate were used as variables. The result from the ordinary least square indicated a negative relationship between foreign direct investment rate in Malaysia.

The finding of this study is similar to the finding of Gnangnon (2018), he found out a positive impact of FDI inflows on economic development in developing economies. The lower the extent of economic development, the higher is the extent of the impact of FDI.

## 6. CONCLUSION AND RECOMMENDATIONS





The study analyzed the effect of foreign direct investment on gross national income over the period of 2006- 2019. The result showed that foreign direct investment had a positive effect on gross national income during the period 2006 - 2019. It also revealed that gross domestic product, exchange rate and unemployment rate has a positive effect on gross national income in Nigeria during the same period.

The study concluded that existence of a long run relationship and an indication that 1 cointegrating vectors exist at 5% level of significance among the variables. Therefore, the regression analysis found that as foreign direct investment increases, gross national income of the country also increased within the period of study. In other words, foreign direct investment is positively related to gross national income. The study recommends that government should try making zones which are solely based on free economic movements. The different determinants of GNI attractions should be investigated.

The infrastructure, government incentives and policy making should make it acceptable for general foreign investors to find the country secure to invest. Finally, unique fiscal and monetary policies should be formed strengthening the other macroeconomic variables which will help to overcome the situation of shocks in Nigeria while hosting Foreign Direct Investment inflow for future sustainable economic development.

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