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Abstract
The study examined the impact of foreign direct investment on unemployment rate in Nigeria from 1980 to 2015. The study used two explanatory variables (foreign direct investment and capital formation) and one explained variable (unemployment rate). Test carried out include unit root test, co-integration test, and ordinary least square. The study revealed that: There is a negative and insignificant relationship between foreign direct investment and unemployment rate in Nigeria, there is a positive and significant relationship between capital formation and unemployment rate in Nigeria. Based on the findings, the study recommends that, government should implement policies that will attract foreign investors to Nigeria in order to make more investments and should also ensure that all resources for productive activities are fully employed before going into any form of savings.

Keywords: Unemployment Rate, Foreign Direct Investment and Capital Formation.

Introduction
Foreign direct investment is one of the key components of an open and efficient international economic system, as opposed to strictly regulated economies. Foreign direct investment is a direct investment made by individual or company in another country into a production or business interest, either by directly establishing a business or expanding the operations of an existing business or by buying a company in the target nation. Foreign direct investment consists of mergers and acquisitions, building new facilities, reinvesting profits earned from the operations of the foreign business (Adeleke, Olowe and Fasesin 2014). Foreign direct investment can be made in many ways, which include the opening of a subsidiary, acquiring an existing foreign business, or through a means of merger or joint venture with a foreign company.

The maximizing benefits of foreign direct investment for the host economy could be enormous including technological skill transfer, capital formation support, aid to competitive
business environment, enhancement to boast international trade integration, etc. These benefits could in turn promote our key economic sectors such as petroleum, mining, manufacturing, agriculture, transportation, communication, construction, etc. which are the elements for achieving high rate of employment and economic growth and development. But benefits of foreign direct investment to countries could differ, depending on the economic environment and the availability of resources. Nigerian economy is in a critical condition that needs improvement. The unemployment rate is still high, economic growth rate is low, etc. As a debate, due to Nigeria’s less availability of capital, low level of industrialization, high rate unemployment, etc. many analyst are of the opinion that foreign direct investment could be a pivot channel to the growth of the Nigerian economy.

Several studies have focused on the relationship between foreign direct investment and economic growth. And most have been establishing some kind of relationship between the foreign direct investment and its influence on economic growth. Silvia and Nguyen (2017); Okafor, Ezeaku and Izuuchukwu (2015); Odili (2015) found a negative relationship between FDI and exchange rate while Ugwuwebe, Okorie and John (2013); Olusuyi, Samuel, Oluyomi and Akinbola (2016); Mounkaila (2017) found a positive and significant relationship between FDI and economic growth. However, there is no consensus regarding how significant and the relative impact (positive or negative), thus scaring foreign investors from investing in the country, also keeping off the minds of the policy makers to make the right policies that can promote economic growth.

More so, low level of foreign direct investment and capital formation could led to low economic activities which can be attributed to the reason of high unemployment rate in Nigeria. This study is significant in the light that, previous studies have researched the relationship between foreign direct investment and economic growth, foreign direct investment and exchange rate, interest rate among others, but this work to the best of our knowledge is the first to examine the relationship between foreign direct investment, capital formation and unemployment rate in Nigeria.

As a result of the above, it becomes imperative for a study such as this to investigate if there is significant relationship between foreign direct investment, capital formation and unemployment rate in Nigeria. The rest of the paper is divided into four parts; which include: literature review, methodology, presentation of data and analysis, and results, discussion and conclusion.

**Literature Review**

Developing economies such as Nigeria is known with limited availability of financial resources, low level of industrial base, lack of technical skills, high level of unemployment etc. Foreign direct investment could be a source of bridging the gap in order to foster development and growth. But this is never certain, since foreign direct investment is not a free lunch; not something for nothing, but something for something big. Meaning, foreign investors invest to make returns, their primary aim is not to help any country bridge their budgetary gap or to aid their host country’s development aspiration but the investors aim is to make maximum returns for their stakeholders.

Several studies have focused the link between foreign direct investment and economic growth, yet to reach a consensus in the issue. The Neo-liberal school is of the view that through
foreign direct investment much of the needed economic fortune can be achieved. It can provide crucial aid in modernizing the industrial order for developing countries. That through foreign direct investment the country’s economy can be expanded by its capital, employment and technology (Ugwuegbe, Okorie and John 2013). Opposed to this school is the Dependency theory which believes that foreign direct investment can lead to transfer of economic power and wealth to foreign investors ultimately thereby leading to economic marginalization of the host economies. Those benefits advocated by the Neo-liberal school to recipient firm and host economies is not a reality, that the disadvantages outweigh the advantages. Aremu (2005), maintained that developing nations are known to be poor because they have been systematically exploited through foreign investors malpractices, foreign firms control of key economic sectors with crowding-out effect of domestic firms; implantation of inappropriate technology in developing countries and distortion of the domestic labor force through indiscriminate remuneration. In view of this (Umah 2007) also maintain that distortion include the crowding-out of national firms, rising unemployment related to the use of capital intensive technology and a marked loss of political sovereignty.

Empirical Review
In view of this, Shaar, Hussain and Halim (2012) 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 and unemployment rate in Malaysia. A percent increase in foreign direct investment shows 0.009 percent decrease of unemployment rate. Matthew and Ogunlusi (2017) also 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.

Osinubi and Amaghionyeodiwe (2009) analyzed the relationship between foreign direct investment and exchange rate volatility in Nigeria from 1970 to 2004 using ECM and OLS in measuring FDI, exchange rate, exchange rate volatility, interest rate and real gross domestic product. The result revealed a significant positive relationship between the variables. Alobari, Paago, Igbara and Emmah (2016) descriptively analyzed the exchange rate and foreign direct investment and their implication on the growth of the Nigeria economy between 2007 and 2016 by descriptive analysis and the result found a relationship between foreign direct investment, exchange rate and economic growth. In GMM application; Olusuyi, Samuel, Oluyomi and Akinbola (2016), evaluate the integrative effects of exchange rate volatility and foreign capital inflows on the growth of the Nigerian economy. The result indicates significant positive effect of foreign direct investment, foreign debt interaction of foreign direct investment with foreign debt and interaction of exchange rate volatility with foreign debt on economic growth. Omorokunwa and Ikponmwosa (2014) search the performance of the exchange rate volatility and foreign private investment from 1980 to 2011 using ECM and OLS. The result shows that exchange rate volatility has a weak effect on the inflows of foreign direct investment to Nigeria in both short and long run. In another study, Ugwuegbe, Okorie and John (2013) investigated the impact of
foreign direct investment the Nigerian economy between 1981 and 2009 using OLS method in measuring foreign direct investment and economic growth. The result indicated a positive but insignificant impact of foreign direct investment on economic growth. Akinwunmi and Adekoya (2016) also evaluated the effect of external reserves management on economic growth in Nigeria covering 1985 to 2013 using OLS. The result from the study shows; an external reserve has a positive significant relationship with foreign direct investment, gross domestic product and monetary policy rate but has negative relationship with inflation and exchange rate. Muhammad, Muhammad, Amjad, Muhammed, Mansoor, Iitaf and Tehreem (2014) evaluated on the Pakistan economy to know the exchange rate relationship with foreign direct investment from 1982 to 2013 with the use of OLS method. The result revealed a positive significant relationship between exchange rate and foreign direct investment. In a similar vein; Alie and Hongliang (2015) studied the impact of interest rates on foreign direct investment in Sierra Leone from 1985 to 2012 with the use of multiple regressions. The study found trade openness and exchange rate to be positively significant with foreign direct investment. The studies of Nadia, Ambar and Faiza (2015), Mounkaila (2017) and Takagi and Shi (2011) also indicated a positive significant impact between foreign direct investment and economic growth.

In another development, Okafor, Ezeaku and Izuchukwu (2015) from their disaggregated analysis between 1987 and 2012 on the effects of foreign investment inflows on exchange rate in Nigeria with the use of OLS and granger causality test; exchange rate follows foreign portfolio but foreign direct investment has an insignificant inverse relationship with exchange rate. Odili Okwuchukwu (2015) evaluated the exchange rate volatility, stock market performance and foreign direct investment in Nigeria from 1980 to 2013 using OLS. The result shows, exchange rate volatility has negative and significant effect on the inflows of foreign direct investment both in short and long run. Adelowokan, Adesoye and Balogun (2015) empirically analyzed the impact of exchange rate volatility on investment and growth in Nigeria covering 1986 and 2014; using VECM, impulse responses function and OLS. The findings revealed that exchange rate volatility has a negative effect with investment and growth. Also, Silva and Nguyen (2017), analyze foreign direct investment inflows, price and exchange rate volatility Latin America from 1990 to 2012 with the use of GARCH method and a statistically significant negative effect of exchange rate on foreign direct investment was found. The studies of Sajjad (2017) and Osei, Baba and Ofori (2015) also indicated negative relationship between foreign direct investment and economic growth.

From the forgoing, there is no consensus regarding how significant and the relative impact whether negative or positive, thus becomes imperative for a study such as this to employ more variables to verify the claims of the previous scholars.

Methodology
Research Design

The study adopted an ex-post facto research design which is a form of descriptive research in which investigator starts with the observation of the dependent variable then studies the independent variable in retrospect for possible relationship and effects on the dependent variable.
Data Collection Method

This study collected data from secondary sources. Secondary data were collected from the central bank of Nigeria, National Bureau of statistics, World Bank data base and as well as journal publications with the scope of 1980 to 2015.

Model Specification

In order to achieve the objectives of this work, a linear regression model was formulated and the Granger causality tests were conducted on the formulated model. The model is stated as follows:

\[ UER = f(FDI, CF, ...) \]  

(I)

This equation can be transformed into a linear function thus:

\[ UER = b_0 + b_1 FDI + b_2 CF + U \]  

(2)

where;

FDI = Foreign Direct Investment
UER= Unemployment rate
CF= Capital Formation
b0 = the constant
b1 - b2 = the coefficients of the explanatory variables
U = Error term

ESTIMATION METHODS

Different econometric analysis tools have been employed in this study to analyze the effect of foreign direct investment on the growth of the Nigerian economy.

Descriptive Statistic

The study employed descriptive statistics for the calculation of mean, median, mode, frequencies, variances and standard deviations.

Linear Regression

The linear regression is an econometric technique which correlates the changes in the variables to other variables. Regression analysis is used to show the accuracy and appropriateness of model and how much independent variable influence on the dependent variable in our study.

Correlation Analysis

This shows the direction of the relation. The signs – or + will show whether the relationship is in positive direction or in the negative direction.

Unit Root Test

This test is a pre test that shows the stationarity or otherwise of the variables specified and a yardstick for chosen further investigation approaches (Odo, Anoke, Nwanchukwu and Agbi, 2016) The essence is to determine the nonstationary property of each variable. We must test each of the series in the levels. All variables will be tested in levels using the Augmented Dickey-Fuller (ADF).
Co-integration
The co-integration test is conducted to look at the long run linear relationship using the Johansen co-integrating model, and find out if there is a possibility of an existence of a co-integrating relationship among the variables.

Error Correction Mechanism
The reason for error correction mechanism is to measure the speed of adjustment of the dependent variables to the changes in the independent variables on the short run and to their equilibrium levels. This study expects a negative coefficient as a sign, suggesting an automatic adjustment mechanism and that the economy responds to deviations from equilibrium in a balancing manner.

DATA PRESENTATION and ANALYSIS

Data Presentation
It shows the variables used for this study on yearly basis from 1980 to 2015. FDI represents foreign direct investment, CF represents Capital Formation, and UER represent Unemployment rate.

Descriptive Statistics
Table 4.1 below shows the descriptive statistics of the data presented in table 4.1.

<table>
<thead>
<tr>
<th></th>
<th>LAG1UER</th>
<th>LAG1CF</th>
<th>LAG1FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>9.887500</td>
<td>1248719.2</td>
<td>210628.7</td>
</tr>
<tr>
<td>Median</td>
<td>6.700000</td>
<td>240880.4</td>
<td>11090.45</td>
</tr>
<tr>
<td>Maximum</td>
<td>28.50000</td>
<td>8727614.</td>
<td>962692.2</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.900000</td>
<td>4257.000</td>
<td>584.9000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>7.061904</td>
<td>2262295.</td>
<td>11090.45</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.966974</td>
<td>2.366718</td>
<td>1.225803</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>3.016512</td>
<td>7.625733</td>
<td>2.614978</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>5.610644</td>
<td>65.70424</td>
<td>9.237917</td>
</tr>
<tr>
<td>Probability</td>
<td>0.060487</td>
<td>0.000000</td>
<td>0.009863</td>
</tr>
<tr>
<td>Sum</td>
<td>355.9500</td>
<td>44953869</td>
<td>758263.3</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>1745.467</td>
<td>1.79E+14</td>
<td>4.33E+12</td>
</tr>
<tr>
<td>Observations</td>
<td>36</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

The descriptive statistics on table 4.1 shows that unemployment rate (uer) has a mean value of
9.89, while the maximum and minimum values are 28.50 and 1.90 respectively. Capital formation (cf) has a mean value of 1248719, while the maximum and minimum values are 8727614 and 4257 respectively. Foreign direct investment (fdi) has a mean value of 210628.7, while the maximum and minimum values are 962692.2 and 584.90 respectively.

The Jarque-Bera statistic indicated that only unemployment rate is normally distributed with the p-value 0.06, while capital formation (cf =0.00), and foreign direct investment (fdi = 0.009).

**Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>LAG1CF</th>
<th>LAG1FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAG1UEU</td>
<td>1</td>
<td>0.4781515347256972</td>
</tr>
<tr>
<td>LAG1CF</td>
<td>0.4781515347256972</td>
<td>1</td>
</tr>
<tr>
<td>LAG1FDI</td>
<td>0.665372078883584</td>
<td>0.841030656377925</td>
</tr>
</tbody>
</table>

The correlation matrix on table 4.2 shows the correlation among the variables. UER is shown to have a weak positive correlation of 0.48 with CF, and strong positive correlation of 0.57 with FDI. CF has a positive strong correlation of 0.84 with FDI, and weak positive correlation of 0.48 with UER. FDI has a strong correlation of 0.67 with UER and 0.84 with CF.

**Table 4.3: Unit root test result**

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF value</th>
<th>Critical Values</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF</td>
<td>-5.882929</td>
<td>-4.252879</td>
<td>-3.548490</td>
</tr>
<tr>
<td>FDI</td>
<td>-5.467540</td>
<td>-3.639407</td>
<td>-2.951125</td>
</tr>
<tr>
<td>UER</td>
<td>-7.089999</td>
<td>-4.252879</td>
<td>-3.548490</td>
</tr>
</tbody>
</table>

Source: Extracted from Unit Root Test Result

The Augmented Dickey-Fuller Unit Root test result as summarized above shows that capital formation is stationary at level while foreign direct investment and unemployment rate are stationary at first difference.

Table 4.4: Summary of co-integration test.

Date: 01/25/18   Time: 20:47
Sample (adjusted): 1984 2015
Included observations: 32 after adjustments
Trend assumption: Linear deterministic trend
Series: D(LAG1UEU,2) D(LAG1CF) D(LAG1FDI,2)
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.669084</td>
<td>70.81591</td>
<td>29.79707</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.563977</td>
<td>35.42737</td>
<td>15.49471</td>
</tr>
<tr>
<td>At most 2 *</td>
<td>0.241979</td>
<td>8.865427</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.669084</td>
<td>35.38854</td>
<td>21.13162</td>
</tr>
<tr>
<td>At most 1 *</td>
<td>0.563977</td>
<td>26.56195</td>
<td>14.26460</td>
</tr>
<tr>
<td>At most 2 *</td>
<td>0.241979</td>
<td>8.865427</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Both trace test and Maximum Eigenvalue test indicated that there are three co-integrating equation existing between the dependent and independent variables. This reveals that there is a long-run equilibrium relationship between the dependent and independent variables.

Table 4.5 Regression Analysis

Dependent Variable: D(LAG1UER,2)
Method: Least Squares
Date: 02/01/18   Time: 02:47
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.131869</td>
<td>0.685237</td>
<td>0.192443</td>
<td>0.8487</td>
</tr>
<tr>
<td>D(LAG1FDI,2)</td>
<td>-3.15E-06</td>
<td>4.80E-06</td>
<td>-0.655977</td>
<td>0.5170</td>
</tr>
<tr>
<td>D(LAG1CF,2)</td>
<td>2.72E-06</td>
<td>6.63E-07</td>
<td>4.108063</td>
<td>0.0003</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-1.205356</td>
<td>0.150418</td>
<td>-8.013353</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
The result above shows that, FDI has a coefficient of -3.15 meaning that one percentage change in foreign direct investment leads to 3.15 percent change in unemployment rate in the negative direction in Nigeria. This indicates that there is a high response of unemployment rate to changes in foreign direct investment in the negative direction, but this is not statistically significant at 5% level.

CF has a coefficient of 2.72 meaning that one percent change in capital formation leads to 2.72 percent change in unemployment rate in the positive direction in Nigeria. This indicates that there is a high response of unemployment rate to the changes of capital formation, and this is statistically significant at 5 percent level.

The results further show that r-squared is 0.76 while adjusted r-squared is 0.73 indicating that 73 percent of changes in unemployment rate is attributable to the combined effect of the capital formation and foreign direct investment.

Overall, the results show that F-statistic is 29.72 with a probability of 0.000000 indicating that the combined impact of the independent variables on the dependent variable is statistically significant.

Furthermore, the Error Correction Co-efficient is appropriately signed with a value of -1.2 with a probability of 0.00, which is significant at 5% level of significance. The co-efficient indicates that the model has a 120 percent speed of adjustment from equilibrium position on the long run.

**Discussion of Results**

The relationship between unemployment rate and foreign direct investment is found to be negative, while the relationship between unemployment rate and capital formation is found to be positive.

Generally, our model suggests a significant relationship between unemployment rate and foreign direct investment using the f-statistics. The coefficient of determination (R²) 73% Meaning 73% change in unemployment rate is influenced by the predictor variables while the remaining 27% is explained by other variables not captured in the model.

The findings of this study concur with that of Shaar, Hussain and Halim (2012) that increase in foreign direct investment leads to a decrease in unemployment rate in Malaysia. It is also line with the findings of Matthew and Ogunlusi (2017) that found a positive and significant relationship between foreign direct investment and employment generation in Nigeria. Meaning increase in foreign direct investment leads to a decrease in unemployment rate in Nigeria for the period in the study.
Summary of Findings
The research work investigated the impact of foreign direct investment on unemployment rate in Nigeria from 1980 to 2015. The following were the findings:
1. Foreign direct investment is found to be negatively related with unemployment rate.
2. Capital formation has a positive relationship with unemployment rate.

Conclusion
The study examined the relationship between foreign direct investment and unemployment rate in Nigeria from 1980 to 2015. The variables used in the study include foreign direct investment (FDI) and capital formation (CF) as independent variables and unemployment rate (UER) as dependent variable. The relationship between foreign direct investment and unemployment rate is found to be negative but insignificant. It means if foreign direct investment is increasing, then unemployment rate will be decreasing. This empirical finding followed fairly close to what economic theory will have suggested. The Neo-liberal school is of the view that through foreign direct investment much of the needed economic fortune can be achieved. It can provide crucial aid in modernizing the industrial order for developing countries. The result suggests that for a significant reduction of unemployment rate, the focus of policy and strategy should be on measures to attract foreign direct indirect investment into the country.

The relationship between capital formation and unemployment rate is found to be positive and significant. It means more capital accumulation leads to high rate of unemployment. The result suggests that for a significant reduction of unemployment rate, the focus of policy and strategy should be on measures to reinvest the capital that comes in and not to accumulate capital.

Recommendations
Based on the findings of the study, we therefore recommend the following;
- Government should implement policies that will attract foreign investors to Nigeria and make more investments; with this the alarming high rate of unemployment will be reduced.
- Government should ensure that all resources for productive activities are fully employed before going into any form of savings. Mobilization of capital into productive activities will reduce unemployment rate and can regenerate more capital for future operations.
References


