AN ANALYSIS OF THE IMPACT OF FOREIGN DIRECT INVESTMENT ECONOMIC GROWTH AND EXPORT PERFORMANCE IN NIGERIA (1970 – 2013)

*Mustapha Adamu ZUBAIRU, ** Hadiza Nasir IRO, *** Maryam Rabiu ZAKARIYYA

*Department of Economics and Development Studies, Federal University, Dutse, Nigeria
**Department of Management Sciences, College of Arts, Sciences and Remedial Studies Kano Nigeria
***Department of Management Sciences, College of Arts, Sciences and Remedial Studies Kano Nigeria

ABSTRACT

This study examined the causality between foreign direct investment (FDI) and export performance in Nigeria from 1970-2013. The study employed secondary annual time series data which was obtained from various publications of the Central Bank of Nigeria (CBN) for the period 1970 – 2012. The presence of unit root was tested using the Phillips-Perron (PP 1998) and Kwiatkowski, Phillips, Schmidt, and Shin (KPSS, 1992) tests. Johansen-Juselius and vector error correction (VEC) procedure was performed to trace cointegration relationship between the variables. The study found the presence of a cointegration relationship among the variables. Also the VEC model traced a long-run equilibrium relationship in the variables under study without having any significant short-term causal flows among the series, except for the FDI. However, the study did not trace any significant relationship between GDP, EXR, TOP and exports. The study recommends the authority concern to come up with policies that would make FDI inflow into the real sector favorable for investors which would surely improve the level of level of output for both domestics and exportation in the long run.

Keywords: Foreign Direct Investment, Economic Growth, Export Performance, and Nigeria

INTRODUCTION

The contribution of FDI and Export to economic growth has been an issue that generated heated debate over the years among economists and policy makers all over the world. Policy makers especially in the developing nations are of the opinion that foreign direct investment (FDI) plays an important role in promoting export and economic growth of an economy (Sharma, 2000; Erdilek, 2005). FDI in particular promotes exports of the host countries by increasing host country’s productivity, productive capacity, capital stock, transfer of technology, managerial skills and upgrading the skills of the local work force through training (Adewumi, 2006). Export is considered as the most important source of foreign exchange that is required by developed and Less Developed Countries (LDCs) to ease their balance of payments problems and reduce unemployment through creating job opportunities as well as integrating a with the rest of the world (Okeagu, 2010). This has not only made economists to stress the vital role of exports and FDI as the two engines of economic growth but also engaged the attention of researchers and
policy makers in that direction. Foreign direct investment is seen as a major source of getting the required funds for investment, hence most African countries offer various forms of incentives to lure FDI inflow into their respective economies (United Nation, 2005).

There has been a deliberate effort by the Nigerian government since the 1980s and 1990s towards attracting FDI into the country with the aim of improving export and economic performance without much success. For instance some of the policies taken to attract FDI includes: structural adjustment programmes (SAP 1986), export processing zones decree (1991), Nigerian export import bank (1991) and investment promotion commission (1995) among others.

Though as good as it may sound, several studies on the causality of FDI on GDP and FDI on exports have emerged with conflicting results ranging from positive evidence of long-run relationships, insignificant impact, contradictory results, bidirectional causality, unidirectional causality and no causality. Therefore, there is no unilateral answer for the causality direction between the two variables. For instance some studies that found evidence of long-run positive relationship between FDI and export are Meerza (2012), Turkan and Sayguli (2011), Sultan (2009), Pham (2008), Achandi (2006), Lopez (2005), Dritsaki and Adamopolous (2004), Shawa and Yashen (2013), Njong and Raymond (2011), and Jorda’an and Eite (2007). Agrawal (1997), Kumar and Siddharthan (1994) and Pant (1993), reported insignificant impact and no evidence of long run relationship between the two variables. Wacker (2011), Miankhe, Thangavelu and Kilirajin (2009), Johnson (2006) Metwally (2004), Soliman (2003), Khan and Leng (1997) all found contradicting result between the causality of FDI and export.


From the studies above, we could therefore infer that the debate on the causality between FDI and export is far from been watered down. Therefore, this study finds it imperative to fill this literature gap through adding new empirical evidence to the existing literature on the causality relationship between FDI on GDP and FDI on export. The study will help the policy makers in the formulation and implementation of relevant policies that will improve FDI GDP and exports in the country. Apart from that, the study will likely open new avenues for feature researches in the area.

The rest of the paper is organised as follows: section two is the literature review, section three contains the methodology, section four presents’ results and discussion and section five concludes the paper.
LITERATURE REVIEW

Previous studies in the reviewed literature examine the causality between FDI and export. Even though most of the studies used similar method, however, they emerged with different results. The single country studies includes Meerza (2012) and Adhikary for Bangladesh; Turkann and Sayguli (2011), Alici and Ucal both for Turkey; Sultan (2009) for India; Pham (2008) for Vietnam; Achandi (2006) for Uganda; Lopez (2005) for Mexico, Dritsaki and Adamapolous (2004) for Greece; Shawa and Yashen (2013) for Tanzania; Njong and Raymond (2011) for Cameroon; Jorda’an and Eite (2007) for Namibia; All using cointegration test in their studies found a evidence of positive long run association . Other single studies such as Rashmita (2013) using ANOVA model for India; Ayaz, Asghar and Yousuf (2013) using ARDL approach for Pakistan; Karbasi and Khaksar (2006) using 2SLS method for Iran; also revealed evidence of positive relationship. While Lee (2007) using cointegration test for Taiwan; Sharma (2001) using simultaneous equation model for India; Agrawal (1997), Kumar and Siddharthan (1994) and Pant (1993), using OLS regression for India reported insignificant impact and no evidence of long run relationship.


Anfoum, Gambo and Suleiman (2013) for the period of (1986-2011) using Causality and cointegration analysis, reported a long run relationship and one way causality running from FDI to export growth. Mary, Ikechuku, Okelu (2012) using correlation, OLS and causality test for the period of 29 years, report a positive relationship but statistically insignificant and no evidence of causality is found. Enyim and Celine (2012) Using correlation and cointegration analysis for the period of 1970 – 2006, revealed a negative correlation while cointegration analysis suggests only long run associationship. The study concludes that majority of FDI inflow in Nigeria goes to the production of domestic consumption goods and services.
Enimola (2011) using cointegration and causality analysis, revealed a positive long run relationship and a unidirectional causality is seen running from FDI to export. Oyatoye, Arogundade, Adebisi and Olukayode (2011) employ OLS in their study for the period of 1987-2006. Evidence of positive relationship is seen from the empirical result. Study concludes that FDI is the major determinant of export in Nigeria. Olayiwola and Okadua (2010) investigate the contribution of FDI to non-oil export growth within the framework of export growth hypothesis, using causality approach fund one way causality running from FDI to export, concludes that majority of FDI inflow into Nigeria’s economy goes to non-oil sector.

Dinda (2009) in his study which covers a period of 1970-2006, employing VECM examines the factors attracting FDI of which resource endowment export is used as explanatory variable, result revealed that resource endowment export significantly determine FDI inflow. Sam (2008) examines FDI and export growth in Nigeria for the period of 1970-2008 using causality analysis, fund unidirectional causality running from FDI to export.

**METHODOLOGY**

The methodology for this study was adopted from the works of Achandi (2006), Rahman (2004), Lee (2007) and Enimola (2011). The study employed secondary annual time series data which was obtained from various publications of the Central Bank of Nigeria (CBN) for the period 1970 – 2012. The variables of interest are Export, FDI, Exchange rate, Trade openness and Supply capacity (proxied by GDP). The presence of unit root was tested using the Phillips-Perron (PP 1998) and Kwiatkowski, Phillips, Schmidt, and Shin (KPSS, 1992) tests. PP has advantage over ADF test as it takes into account the serial correlations by making corrections to the t-statistics of the coefficients of the lagged variables, not by adding the differenced term of the lagged variables. After making the variables stationary and integrated in the same order, the Johansen-Juselius procedure was performed to trace cointegration relationship between the variables. Johansen cointegration test was employed because it gives room for the existence of more than one cointegrating equation. The maximum eigenvalue ($\lambda_{\text{max}}$) and the trace ($\lambda_{\text{trace}}$) tests were used to detect a cointegrating vector. The functional form of the model is given as:

$$E_t = f(R, Q_{t-1}, T, M, E_{t-1}, F)$$

Where $E=\text{export}$; $R = \text{exchange rate}$, $Q_{t-1}$ lagged value of potential output, $T = \text{trade liberalisation}$, $M = \text{external market indicator}$; $E_{t-1} = \text{lagged value of export}$ and $F=\text{FDI}$. After modification the model becomes:

$$EXPT = (FDI, EXR, GDP, TOP)$$

In an explicit and econometric form the model can be transformed into the following expression:

$$EXPT_t = \beta_0 + \beta_1 FDI_t + \beta_2 RGDP_t + \beta_3 EXG_t + \beta_4 TOP_t + U_t$$

243
The variables are further transformed into log form because according to Gujarati, (1995) this method reduces the problem of heteroscedasticity by compressing the scales in which the variables were measured differently. Thus the model is now specified as:

$$\log EXPT_t = \beta_0 + \beta_1 \log FDI_t + \beta_2 \log RGDP_t + \beta_3 \log EXG_t + \beta_4 \log TOP_t + U_t, \ldots (4)$$

The causality was tested using the following specifications:

$$\Delta Y_t = \alpha_1 + \beta_{11} \Delta Y_{t-1} + \beta_{12} Y_{t-2} + \ldots + \beta_{1n} \Delta Y_{t-n} + y_{11} F_{t-1} F_{t-2} + \ldots + y_{1n} F_{t-n} + \epsilon_{1,t} \ldots \ldots (5)$$

$$F = \alpha_2 + \beta_{21} F_{t-1} + \beta_{22} F_{t-2} + \ldots + \beta_{2n} \Delta Y_{t-1} + y_{21} \Delta Y_{t-2} + \ldots + y_{2n} \Delta Y_{t-n} + \epsilon_{2,t} \ldots \ldots (6)$$

### RESULTS AND DISCUSSION

The results of the unit root test using PP and KPSS with intercept and trend regression forms for the levels and the first differences is presented in Table 1.1. Both results show that the series are stationary after first differencing.

**Table 1.1: Unit Root Test**

<table>
<thead>
<tr>
<th>PP Stationarity test (After First Differencing)</th>
<th>KPSS Stationarity test (After First Differencing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Adj.t-Statistics</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
</tr>
<tr>
<td>FDI</td>
<td>-10.18466</td>
</tr>
<tr>
<td>EXP</td>
<td>-7.069904</td>
</tr>
<tr>
<td>RGDP</td>
<td>-6.318751</td>
</tr>
<tr>
<td>EXR</td>
<td>-6.178492</td>
</tr>
<tr>
<td>TOP</td>
<td>-8.413184</td>
</tr>
</tbody>
</table>

Source: Researchers computation using Eviews 7.0, and (*) denotes 1% P-value

Table 1.1 shows that at 1% level of significance, all the variables are stationary after taking the first difference, that is, they are integrated of order I (1). The PP adjusted t-statistics is greater than Mackinnon critical and also KPSS test statistics is less than the asymptotic critical values which implies acceptance of null hypothesis. The long run relationship among the variables is examined using Johansson cointegration test. The test result is shown in the table below:
1.2 Trace Test

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Trace Statistics</th>
<th>0.05 Critical Value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>192.0631</td>
<td>88.80380</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most*</td>
<td>91.31739</td>
<td>63.87610</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

**Maximum Eigen-value Test**

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Trace Statistics</th>
<th>0.05 Critical Value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>100.7457</td>
<td>38.33101</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most*</td>
<td>48.52208</td>
<td>32.11832</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

_Sources: Researchers computation using Eviews 7.0._

From Table 1.2, both trace and maximum eigenvalue tests indicate the existence of two (2) co-integrating equations at 5% level of significance confirming that the series are related in the long-run. Thus, it is concluded that the series are co-integrated, and a long-run equilibrium relationship exists among them. The normalized equation from the Johansson unrestricted co-integration test revealed that all the variables are positively related to export in the long-run except exchange rate which is negatively related to export performance in the long run as:

\[
\begin{align*}
\text{EXP} & \quad \text{FDI} & \quad \text{GDP} & \quad \text{EXR} & \quad \text{TOP} \\
1.000000 & -5.954517 & -0.114290 & 4796.157 & -12278.3 \\
(0.24056) & (0.37404) & (730.341) & (15554.9)
\end{align*}
\]

The study proceeds to run the vector error correction (VEC) model, the empirical result is depicted in table 4 as:

**Table 1.3: VEC Model**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>15.69342</td>
<td>9.154058</td>
<td>1.714368</td>
<td>0.0894</td>
</tr>
<tr>
<td>et−1</td>
<td>−0.050018</td>
<td>0.054919</td>
<td>−0.910753</td>
<td>0.3645</td>
</tr>
<tr>
<td>ΔEXPG(−1)</td>
<td>−0.331052</td>
<td>0.202225</td>
<td>−1.637051</td>
<td>0.1046</td>
</tr>
<tr>
<td>ΔFDIG(−1)</td>
<td>1.269648</td>
<td>0.582515</td>
<td>2.179598</td>
<td>0.0315</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.333364</td>
<td>Adjusted R-Squared</td>
<td>0.142896</td>
<td></td>
</tr>
</tbody>
</table>

_Sources: researcher’s computation using Eviews 7.0._

Table 1.3 portrays the results of the vector error correction model. To run the VEC model, the appropriate lag-length (lag 1) of the variables has been selected through the FPE criterion, which reveals that a long-run equilibrium relationship exists among the variables. This has been observed by the estimated parameter (\(\hat{\lambda}\)) of the error correction term (et−1), which is negative as expected. In addition, FDI is found to have a significant short-term positive impact on the export performance of Nigeria. On the other hand, the numeric of adjusted \(R^2\) shows a low explanatory power of the model, meaning that other explanatory variables, not included in the study, may have significant influence on exports.
This study investigates the influence of foreign direct investment on the export performance of Nigeria over the period of 1970 – 2012 inclusive. The results of the PP and KPSS unit root tests indicated that all variables in the study were integrated in order one. The test statistics (trace and eigenvalue) of the Johansen cointegration test conducted on intercept plus trend regression forms indicated the presence of a cointegration relationship among the variables. In addition, the negative parameter of the error correction term confirmed that a long-run equilibrium relationship existed among the variables as well as a strong short term causal flow (unidirectional) was discovered between FDI and exports. Precisely, the VEC model traced a long-run equilibrium relationship in the variables under study without having any significant short-term causal flows between them, except for the FDI.

Based on the findings the study recommends that to pursue a long term export improvement, the Nigerian government needs to take proactive measures that will attract foreign direct investment in the country. This will have a multiplier effect in boosting the GDP, improving foreign exchange as well as improving the economies long-term growth performance. Also diversifying the economy and further trade liberalization policies would likely enhance export performance thereby providing the country with more foreign exchange to be channeled towards economic growth and development. This seems important because as the results from this study shows, the variable are co-integrated which suggests that they are mutually reinforcing.

REFERENCES


250

IRA PUBLICATIONS

www.irapub.com


IRA PUBLICATIONS

www.irapub.com


