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## AN EVALUATION OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH IN NIGERIA (1980 - 2009)

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### Abstract

*This paper examines the evaluation of Foreign Direct Investment (FDI) on economic Growth in Nigeria(1980 - 2009). The model used by Balasubramanyam(1996) was adopted and adjusted to include variables like: inflation, foreign debt, exchange rate and political dummy. The Ordinary Least Square(OLS) estimation techniques was employed. The results revealed that the coefficient of determination(  $R^2 = 87.5481$ ) shows that the explanatory variables explained a total variation of about 88% in the dependent variable(GDP) while the remaining 12% is caused by the error term in the model and the result exhibits good fit and signs of reliability. The result is statistically significant at 5% level of probability. The DW (2.026787) shows absence of autocorrelation in the model. Hence, it was concluded that exports, exchange rate and political factor form the major locational factors of FDI in Nigeria. Based on the conclusion, it is therefore recommended that Nigeria should encourage improved domestic investment to accelerate growth to compliment FDI as a prime mover of the economy and a stable government should ensure sustainability of democratic rule devoid of unwarranted changes.*

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### Introduction

Many developing countries strive to attract Foreign Investment (FDI) base on the acknowledge advantages as an instrument of

economic growth. Recent studies have shown that Foreign Direct Investment (FDI) remain the engine require to bridge that

savings – investments gap that exists in Africa in general and Nigeria in particular. Prior to 1970s FDI was not seen as an instrument of economic growth because the perception of the FDI was seen as parasitic and retarding the development of the domestic industries, for export promotion had engendered hostility of multi-national companies and their direct investments in many countries.

This study examines that FDI facilitates economic growth on one hand, economic growth also attracts FDI into Nigeria. More importantly, FDI and economic growth are endogenously determined in Nigeria. Based on this, the study tends to examine the endogenous nature of the impacts of FDI on economic growth in Nigeria, using data from 1980 – 2009 with the opinion to determine whether bidirectional relationship between economic growth and FDI inflows into Nigeria exist.

De Mello (1997) argued that there is positive impact of FDI on economic growth in developing countries. Also found that FDI is though as a composite bundle of capital stocks, know-how and technology, and that its impact on growth is manifold and very a great deal between technologically advanced that the ultimate impact of FDI on growth in recipient economy depends on the scope of efficiency spillovers to domestic firms. Adams (2009) discovered that the theoretical link between FDI and economic growth can be seen in modernization and dependency theories modernization theories suggests that for economic growth to be ensured, capital investment must be required and has been provided by FDI, while the new growth theory argues that knowledge transfer through FDI serves as the engine to the economic growth of the developing countries.

Mamun and Nath (2005) supported the modernization theory postulating that FDI plays a dual function by contributing to capital accumulation and by increasing total factor productivity. Oseghale and Amenkhienan (1987) examined the relationship between oil export, foreign borrowing and FDI in Nigeria on one hand and economic growth on the other hand, and the impact of these on sectoral performance between 1960 and 2004. They concluded that foreign borrowing and FDI impacted negatively on over-all GDP but positively on three principal sectors (manufacturing, transport and communication and finance and insurance).

Esther and Folorunso (2011) discovered that the impact of FDI flows on economic growth in Nigeria has a positive impact on the economic growth and they also have that the extent to which FDI influences the affected by human capital. Anyanwu (1998) based his study on the determinants of FDI in flows to Nigeria He discovered change in domestic investment, domestic output, indigenization policy and openness of the economy as the major determinants of FDI that can stimulate the economic growth.

### **Methodology**

The model used by Balasubramanyan (1996) was adopted and adjusted to include variable like: Inflation, foreign debt, exchange rate and a political dummy. The model took a lead from Solow's production function framework, which has been used extensively to analyze the determinants of growth in developing countries. The analytical framework that links FDI to economic growth can be analyzed through an augmented Cobb-Douglas production function;

Given  $Q = A_0 L^\alpha K^\beta$  ..... (1)

**Where :**

Q, A, and K are the growth rates of aggregate output, total factor productivity, capital and labour respectively, while  $\alpha$  and  $\beta$  are elasticities of output with respect to the inputs. The empirical literature on input – output relationship in developing countries suggests that the production approach is a useful reference for analyzing such relationship. The general form of the equation is written as:

$\ln Q = \ln A_0 + \alpha \ln L + \beta \ln K + e$  ..... (2)

In this study, foreign direct investment (FDI), external debts outstanding were included to capture external influence while exchange rate, lag values and political influence and the power of Nigerian Naira with reference to other foreign currencies were capture as internal influences. The augmented production function becomes:

$\ln GDP_t = \beta_0 + \beta_1 \ln EXP_t + \beta_2 \ln FDI_t + \beta_3 \ln INV_t + \beta_4 \ln INF_t + \beta_5 \ln(GDP_{t-1}) + \mu_{1t}$ .....(3)

We view the variable representing external influence FDI as also depending on the real growth of Gross Domestic Product (GDP) such as a simultaneous counterpart model to equation (3) can be written as:

$\ln FDI = \alpha_0 + \alpha_1 \ln GDP_g + \alpha_2 \ln EXR + \alpha_3 \ln EXD + \alpha_4 \ln POD + \alpha_5 \ln FDI_{t-1} + \mu_{2t}$  .....(3)

Where:

(thus, the variables will be taken in real terms i.e. deflating values)

EXP = Exports Growth Rate

FDI = Foreign Direct Investment Growth Rate

INV = Domestic Investment Growth Rate (proxy for Domestic Capital Stock)

INF = Inflation Rate

GDP = Growth rate of GDP

GDP t-1 = (Lagged GDP)

FDI t-1 = (Lagged FDI)

EXD = External debt growth rate

POD = Political dummy variable [military rule (i) democratic rule (o)]

The a prior expectation patterns of the behaviors of the independent variables in terms of their parameters to be estimated are;

(  $\beta_1 > 0$ , as export increases, we expect GDP to increase), ( $\beta_2 > 0$ , as FDI increases, we expect GDP to increase), ( $\beta_3 < 0$  as domestic capital investment increases we expected GDP to increase) ( $\beta_4 < 0$ , as inflation increases, we expect GDP to decrease) and ( $\beta_5 > 0$ , as lagged GDP increases we expect GDP to increase)

( $\alpha_1 > 0$ , as GDP increases, we expect FDI to also decrease), ( $\alpha_2 < 0$ , as exchange rate increases, FDI is expected to decrease), ( $\alpha_3 > 0$ , FDI is expected to increase as external debt increases), ( $\alpha_4 < 0$ , due to political instability leading to policy inconsistency, when our political dummy variable increases, FDI is expected to decrease), and ( $\alpha_5 > 0$ , the lag value of a variable is expected to have direct relationship with such a variable).

**Result and Discussion**

The result of the regression analysis presented in table 1, shows that the signs of RFDI, RINV, INF and GDP t-1 indicated positive relationship with GDP while REXP shows an inverse relationship. This reveals that FDI as a positive impact on the economic growth (GAP) in Nigeria and that Nigeria should be conscious of attracting FDI flows into the country. Meanwhile the sign could be as a result of the sufficient human labour in the country which stimulates the link between FDI and growth.

The prior for domestic investment, foreign direct investment and lagged gross

domestic product confirmed a prior expectation while inflation and exports were negative to the a priori. This implies that, the model is not valid as it's negates some a priori expectations. The coefficient of determinations. ( $R^2 = 87.5481$ ) exhibits goods fit and sign of reliability. The result is statistically significant at 5% level of probability.

The Aurbins – Watson (D.W) which is 1.72123 shows that the model has no perfect positive serial correlation. Moreso, the objective of the determinants of the locational choice of FDI in presented in Table 2 which also reveals that the coefficient of determination  $R^2 = 1.0000$  which implies that the explanatory variables explained a total variation of 100% of the dependent variable (FDI). The a priori confirms with the relationship which exist between GAP and FDI, which could be as a result of in adequacy of FDI fund injected into the Nigeria economy. Locational factors of FDI have coefficients 2.24, 7.07 and 0.0003 with t-statistic of 0.0661, 0.1336, and 0.15332 respectively. All factors were positive and significant at 10% level and DW (2.026787) shows absence of autocorrelation in the model.

### Conclusion

The study shows that there is positive relationship between economic growth (GAP) and FDI. This positive relationship is as a result of sufficient FDI fund invested into the Nigeria economy which enhances the growth. It was also discovered that, exports, exchange rate and political factors form the major locational factor of FDI in Nigeria. Based on the conclusion, it is therefore recommended that Nigeria should encourage improved domestic investment to accelerate growth to compliment, the government should revisit the issue of local

content requirement, trade liberalization should be pursued and a stable government should be put in place to ensure sustainability of democratic rule devoid of unwarranted changes.

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Table 1

Dependent Variable: LOG (GDP)

Method: Two-Stage Least Squares

Date: 10/08/21 Time: 19:03

Sample: 1980-2009

Included observations: 30

Instrument specification: LOG (GDP) LOG (RFDI) LOG(REXR) LOG(EXD)

POD LOG (RFDI-1) C

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.266104	1.947227	4.758615	0.0001
LOG (REXR)	-0.787120	0.654010	-1.203528	0.2405
LOG (RFDI)	0.763782	0.653312	1.169093	0.0253
LOG (RINV)	0.330690	0.518113	0.638258	0.0529
LOG (INF)	0.616277	0.332746	1.852094	0.0764
(GDP-1)	3.46E-06	1.26E-06	2.750652	0.0111
R-squared	0.875481	Mean dependent var		12.58419
S.D. dependent var.	0.588184	S.E. of regression		0.468260
Sum squared resid	5.262425	F-statistic		8.879026
Durbin-Watson stat	1.731232	Second-Stage SSR		0.298435
J-statistic n	1.361054	Instrument rank		7
Prob. (J-statistic)	0.024335			

Source: group computation using econometrics view (E- view, 7)

The model can be written as  $GDP = 9.266104 - 0.787120EXP_t + 0.7638FDI_t + 0.3307INV_t + 0.6163INF_t + 3.46(GDP_{t-1})$

Table 2

Dependent Variable: LOG (RFDI)

Method: Two-Stage Least Squares

Date: 10 / 08 / 21 Time: 19:29

Sample: 1980-2009

Included observations: 30

Instrument specification: LOG (RFDI) LOG (GDP) LOG(RINV) LOG(REXP) LOG(INF) LOG(GDP-1)

C

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002263	0.009269	0.244122	0.8092
LOG (GDP)	0.000413	0.001126	0.366520	0.0717
LOG (REXR)	2.24E-05	0.000339	0.066083	0.0947
LOG (EXD)	7.07E-05	0.000529	0.133598	0.0894
POD	0.000329	0.002144	0.153319	0.0879
LOG (RFDI-1)	0.999102	0.000353	2827.614	0.0000

R-squared	1.000000	Mean dependent var	8.035429
S.D. dependent var.	1.961444	S.E. of regression	0.001275
Sum squared resid	3.90E-05	F-statistic	13729396
Durbin-Watson stat	2.026787	Second-Stage SSR	4.55E-13
J-statistic n	9.61E-32	Instrument rank	6

Source: *group computation using econometrics view (E - view, 7)*

$\text{LOG (RFDI)} = 0.00226 + 0.000413(\text{GDP}) + 2.2391(\text{REXR}) + 7.0715(\text{EXD}) + 0.9991(\text{RFDI-1})$