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## Insecurity, Foreign Direct Investment and Economic Growth in Nigeria

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### **Abstract**

*This study expounded on the effect of Insecurity on Foreign Direct Investment (FDI) and by extension on Economic Growth. It also tried to verify the nature of the relationship between FDI and economic growth (proxied by Real GDP). Data used in the study were time series annual data (from 1986 to 2014) obtained from the CBN Statistical Bulletin. In addition Insecurity was employed as a dummy variable. The Augmented Dickey-Fuller test was used to test the data for the presence of unit root after which the Granger Causality test was employed to verify the nature of the relationship between FDI and Real GDP. Also, the Ordinary Least Squares Multiple Regressions technique was used to estimate the relationship between Exchange Rate, Insecurity and FDI. The findings indicated that Real GDP is Granger caused by FDI, but not the other way round. The OLS results also showed that Insecurity affects FDI negatively, though negligibly. By implication, Insecurity also affects growth, though in an insignificant manner. It is thus recommended that the government continue to devise means of encouraging FDI inflows into the economy. Such ways include eliminating all forms of insurgency; increasing power generation to reduce the cost of doing business, eliminating multiple taxation, etc.*

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**Keywords:** *Insecurity, Foreign Direct Investment (FDI), Economic Growth*

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### **1.0 Introduction**

Several studies have been conducted to determine the effect of Foreign Direct Investment (FDI) on economic growth. Findings have varied based on the different methods employed as well as on the peculiarities surrounding the individual economies investigated. However, the general consensus seems to be that FDI has a positive impact on economic growth. As a result, countries and/or continents (especially developing ones like Nigeria) now see attracting FDI as an important element in their strategy for economic development (Olusanya, 2013).

According to Basem and Abeer (2011), this is more so because, in addition to providing capital; which could also be sourced domestically, FDI provides the much needed resources to the developing countries such as technology, managerial skills, entrepreneurial ability, brands and access to markets. However, economies that usually enjoy massive FDI inflows are the relatively stable ones as investors are often wary of the risks of their investments, particularly in volatile regions. No investor would therefore like to do business in an environment where security and safety is not guaranteed; a fact that places Nigeria in a rather precarious situation considering the insecurity in recent years.

Thus, given that the rate of militancy, kidnapping, bombing, armed robbery, (and not forgetting the Boko Haram insurgency) has gradually but steadily been on the rise over the last 10 years, it is only natural to expect that the rate of FDI inflows into Nigeria would

drastically decline resulting in the fall in growth rate of the economy. It is against this background that it becomes imperative to verify if the insecurity challenge has actually had any adverse effects on FDI and by extension, the economic growth of Nigeria. More so, considering the divergent opinions that exist regarding the role of FDI on economic growth, this research also aims at verifying the effect of FDI on Nigeria's economic growth.

This research has thus been divided into five sections; the first being the introduction. The rest of the paper contains section two which deals with the review of relevant literature and the theoretical framework; Section three which comprises of the nature and sources of data used for the study as well as methodology; section four in which data is presented and analyzed appropriately; and lastly, section five which contain conclusion and recommendations.

## **2.0 Review of Literature and Theoretical Framework**

### **2.1 Conceptual Framework**

#### **Insecurity**

Pate and Hamza (2015) have defined insecurity as the extreme opposite of security. The implication of this is that it is pertinent to conceptualize security before insecurity. Buzan (1991) thus sees security as stability in economic, social and environmental levels. In other words, security is the condition of feeling of safety from harm or danger; the defence, protection and absence of threat to acquire value (Wolfers 1962, Oladeji and Folorunso, 2007 in Pate and Hamza 2015).

Insecurity as an antithesis of security thus refers to a condition that exists due to lack of effective measures put in place to protect individuals, information and property against hostile persons, influences and actions. According to Beland (2015), insecurity entails lack of protection from crime (being unsafe) and freedom from psychological harm. In Nigeria, insecurity has manifested in several forms. Some of these manifestations include;

- Ethno-religious conflicts
- Political based violence
- Kidnapping and armed robbery
- Militancy, and worst of all;
- The boko haram insurgency

In this study however, emphasis is placed on the last two forms of insecurity mentioned above (which began in the early 2000s and have grown worse ever since). As such an attempt is made to measure the effect of these on FDI and extension, GDP.

#### **Foreign Direct Investment (FDI)**

The United Nations have defined FDI as investment in enterprises located in one country but effectively controlled by residents of another country (UNCTAD, 2009). Also, Antwi et al (2013) have defined FDI as the monetary resources foreigners invest in companies or their subsidiaries in a country. According to other literature, FDIs require business relationships between a parent company and its foreign subsidiary; and FDI relationships give rise to multinational corporations (MNCs). However, for investment to be regarded as FDI, the parent firm needs to have at least 10% of the ordinary shares of its foreign affiliates. The investing firm may also qualify for an FDI if it has voting power in a business enterprise operating in a foreign country. This assertion by the Economy and Investment and Financial Report of the Economy Watch website is true but FDI can also be the monetary resources, expertise, machinery foreigners invest in companies outside their domestic countries.

## **Economic Growth**

Kindleberger (1965) has defined economic growth as more output. He however goes further to say that growth may well involve not only more output derived from greater amounts of inputs but also greater efficiency (i.e an increase in output per unit of input). Freidman (1972) on his part defines growth as an expansion of the system in one or more dimensions without a change in its structure. While Jhingan (1997) summed up by saying that economic growth is related to a quantitative, sustained increase in a country's per capita output or income accompanied by an expansion in its labour force, consumption, capital and volume of trade. Economic growth as used in this study denotes an increase in the GNP/GDP of a country overtime.

### **2.2 Empirical Review of Literature**

There exist an abundance of literature regarding the effect of FDI on Economic growth as well as Insecurity on FDI and Growth.

For example, Antwi et al (2013), in their study of the relationship between FDI and economic growth in Ghana between 1980 and 2010 using the OLS regression technique found that GDP significantly influences FDI. In the same vein, in his study titled "Impact of FDI Inflows on Economic Growth in a Pre and Post Deregulated Nigerian Economy", Olusanya (2013) employed the Granger Causality test and deaggregated the economy into three periods; 1970 to 1986, 1986 to 2010 and 1970 to 2010. The results showed that between 1970 and 1986, GDP causes FDI, between 1986 and 2010, no causality relationships exist between GDP and FDI. However, between 1970 and 2010, results showed bidirectional causality between FDI and GDP. Furthermore, Basem and Abeer (2011) employed the Cointegration and Error Correction Mechanizm to study the impact of FDI on economic growth of Jordan. Results indicated that FDI along with other factors significantly influence economic growth of Jordan and thus suggested that the government of Jordan implement policies geared towards stimulating FDI inflows into the country.

In another vein, Ikpe and Nteegah (2014) in their empirical study of the relationship between Social Insecurity, FDI, and growth of the Nigerian economy, using the Augmented Cobb-Douglas Production function concluded that insecurity stimulates the inflow of foreign technology rather than inhibit it. This is attributed to the merging up of the different forms of social insecurity in Nigeria. On their part, Pate and Haruna (2015) in their paper titled "The Impact of Insecurity and Poverty on sustainable Economic Development in Nigeria" investigated into the relationship between insecurity, poverty and economic development of Nigeria with special emphasis of Boko Haram insurgency. Using the OLS technique as well as ADF, Granger Causality test, ECM technique and RESET model specification, they found a negative relationship between economic growth, insecurity and poverty; specifically, economic growth, they said, causes poverty and poverty causes insecurity, but not the other way round.

### **2.2 Theoretical Framework**

Many different theories have attempted to explain why FDI takes place. Examples include the Production Cycle Theory of Vernon, the Internalization Theory and the Theory of Exchange Rates on Imperfect Capital Markets. However, these theories are concerned more with the motivations for FDI outflows and as such do not have much to say about the gains of FDI inflows. However, Economists generally believe that FDI inflows are an important element of economic development in all countries, especially in the developing ones.

Neoclassical models of growth as well as endogenous growth models provide the basis for most of the empirical work on the FDI-growth relationship and therefore form the theoretical basis for this study. The relationship has been studied by explaining four main

channels: (i) determinants of growth, (ii) determinants of FDI, (iii) role of multinational firms in host countries, and (iv) direction of causality between the two variables (Chowdhury and Mavrotas, 2005 in Ozturk, 2007).

### **The Neoclassical Growth Theory**

According to the neoclassical growth theory, economic growth generally comes from two sources: factor accumulation and total factor productivity (TFP) growth (Felipe, 1997). Of these two sources, the empirical literature usually focuses more on studying the growth of factor inputs than the growth in TFP. This is due to the fact that factor growth is easier to quantify and analyze while difficulties abound in the measurement of TFP growth due to the lack of appropriate econometric modelling techniques as well as unavailability of appropriate data.

### **The Endogenous Growth Theory**

As opposed to the limited contribution that the neoclassical growth theory accredits to FDI, the endogenous growth literature points out that, FDI cannot only contribute to economic growth through capital formation and technology transfers (Blomstrom et al., 1996; Borensztein et al., 1995) but also do so through the augmentation of the level of knowledge through labour training and skill acquisition (de Mello 1997, 1999). In the framework of endogenous growth models, several channels are at work. More precisely, three main channels can be detected through which FDI affects growth. First, FDI increases capital accumulation in the receiving country by introducing new inputs and technologies (Dunning, 1993; Blomstrom et al., 1996; Borensztein et al. 1998). Second, it raises the level of knowledge and skills in the host country through labour and manager training (de Mello, 1996, 1999). Third, FDI increases competition in the host country industry by overcoming entry barriers and reducing the market power of existing firms. As mentioned by Chowdhury and Mavrotas (2005), a large number of empirical studies on the role of FDI in host countries suggest that FDI is an important source of capital, complements domestic private investment, is usually associated with new job opportunities and enhancement of technology transfer and spill over, human capital (knowledge and skill) enhancement, and boosts overall economic growth in host countries<sup>1</sup>. On the other hand, a number of firm-level studies do not lend support for the view that FDI promotes economic growth. Concerning developing countries, macro-empirical work on the FDI-growth relationship has shown that subject to a number of crucial factors, such as the trade regime, the human capital base in the host country, financial market regulations, banking system and the degree of openness in the economy FDI has a positive impact on overall economic growth.

## **3.0 Data and Methodology**

### **3.1 Data**

The data used in this study consist of time series annual data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. The data items include; Nigeria's Real GDP, FDI Inflows (Cumulative Foreign Private Investment in Nigeria by Origin), Exchange Rates (Monthly Official Exchange Rates) and Insecurity (which has been dummied; with values of 0 in stable years and 1 during years of elections and from the time of militancy and insurgency). GDP has been chosen to measure economic growth of Nigeria. The scope of the study is 1986 to 2014. 1986 was chosen because it marked the beginning of the post SAP era which implied the economic liberation of the Nigerian economy.

### 3.2 Methodology

The Granger Causality test has been employed to test the nature of the relationship between GDP and FDI; that is, to verify if GDP is what causes FDI, or whether it is FDI that Causes GDP. Also, the Ordinary Least Squares (OLS) Multiple Regression Technique is used to estimate the effect of Insecurity and Exchange Rate on FDI. Furthermore, considering that time series data is used in this study, the Augmented Dickey-Fuller (ADF) Unit Root Test is used to test the data for non-stationarity or presence of unit root before the Granger Causality test and OLS regressions are carried out.

### 3.3 Model Specification

#### Model 1: Granger Causality

The model used by Olusanya (2013) has been employed to verify the relationship between FDI and GDP. It is given thus;

$$RGDP_t = \sum \alpha_i RGDP_{t-1} + \sum \alpha_j FDI_{t-1} + \mu_{t1} \dots\dots\dots (1)$$

$$FDI_t = \sum \beta_i RGDP_{t-1} + \sum \beta_j FDI_{t-1} + \mu_{t2} \dots\dots\dots (2)$$

Where: GDP = Gross Domestic Product  
FDI = Foreign Direct Investment

#### Decision Rules:

The decision rule for equations (1) and (2) is to test the null hypothesis that the estimated coefficients are equal to zero at an appropriate significance level or using the rule of thumb, that if t-statistics is at least 2, the null hypothesis is rejected, otherwise accepted. Therefore; Equation (1); FDI causes GDP if Ho:  $\alpha_j = 0$  is rejected  
Equation (2); GDP causes FDI if Ho:  $\beta_i = 0$  is rejected

#### Model 2: Ordinary Least Squares Regression

$$FDI = \beta_0 + \beta_1 EXRT + \beta_3 INS + e_t$$

Where: FDI = Foreign Direct Investment; EXRT = Exchange Rate; INS = Insecurity; and  $e_t$  = the error term.

A priori expectations are that  $\beta_0 > 0$ ,  $\beta_1 > 0$  and  $0\beta_3 < 0$ .

## 4.0 Results and Discussion

### 4.1 Stationarity Test

Variable	ADF Test Value	Critical Value at 5%	Order of Integration
RGDP	-10.09729	-2.981038	1(2)
FDI	-8.434473	-2.976263	1(1)
EXRT	-5.255102	-2.976263	1(1)
INS	-5.936675	-2.976263	1(1)

The tests results above indicate that at 5% significance level, FDI and EXRT and INS are stationary at 1<sup>st</sup> difference. RGDP however is only stationary at second difference. We can thus proceed with the Granger Causality test and OLS estimations.

### 4.2 Pairwise Granger Causality Test

Sample: 1986 – 2014

Lag: 2

Null Hypothesis	Observations	F – Statistic	Probability
FDI does not Granger Cause RGDP	27	3.76661	0.0392
RGDP does not Granger Cause FDI		1.33074	0.2847

5% level of significance:  $v1 = 2$ ,  $v2 = 25 = 3.39$

The results above indicate that at 5% significance level, we reject the null hypothesis that FDI does not Granger cause RGDP. However, we cannot reject the null hypothesis that RGDP does not Granger cause FDI. The conclusion therefore is that there is a one directional causality running from FDI to RGDP.

### 4.3 Ordinary Least Squares Results

Dependent Variable: FDI

Method: Least Squares

Date: 12/17/15 Time: 09:43

Sample: 1986 2014

Included Observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXRT	0.875458	0.103681	8.443791	0.0000
INS	-0.139958	0.126750	-1.104206	0.2796
C	3.649322	0.161411	22.60886	0.0000
R-squared	0.764135	Mean dependent var	5.034965	
Adjusted R-squared	0.745992	S.D. dependent var	0.557589	
S.E. of regression	0.281021	Akaike info criterion	0.396919	
Sum squared resid	2.053286	Schwarz criterion	0.538364	
Log likelihood	-2.755328	Hannan-Quinn criter.	0.441218	
F-statistic	42.11629	Durbin-Watson stat	1.682490	
Prob(F-statistic)	0.000000			

The table above shows the OLS results for the effect of Exchange Rate (EXRT) and Insecurity (INS) on Foreign Direct Investment (FDI). The results indicate that while EXRT and the Constant (C) (both with probability values of 0.0000) are significant at 1 percent in explaining variations in FDI; INS is not significant as evidenced by its probability value of 0.2796. The coefficients of EXRT and INS are also both rightly signed with positive and negative values respectively, which is consistent with a priori theoretical expectations. Precisely, a unit change in EXRT will increase FDI by 0.875458 units, while a unit change in INS will reduce FDI by 0.139958 units as evidenced by the coefficients of 0.875458 and -0.139958 respectively. The F-statistic (42.1629) which measures the joint effect of explanatory variables is also highly significant at 1 percent as indicated by its probability value of 0.000000, meaning that EXRT and INS are jointly significant in explaining FDI in Nigeria.

The  $R^2$  value of 0.764135 implies that 76.41% of variations in FDI are accounted for by EXRT and INS, which implies a goodness of fit. And even after adjustments the  $R^2$  still maintains a goodness of fit with a value of 0.745992. Lastly the Durbin-Watson statistic of 1.682490 is approximately equal to 2 such that we can reasonably assume the absence of autocorrelation.

### 5.0 Conclusion and Recommendations

This paper expounded on the effects of insecurity on FDI and by extension, economic growth. It also aimed at verifying the nature of the relationship between FDI and economic growth (proxied by Real GDP). The findings indicate that insecurity affects FDI negatively though at a rather insignificant level. However, the cumulative effects of insecurity together

with exchange rate on FDI significant. The study also showed that FDI causes economic growth, but growth does not cause FDI. By implication, the effects of insecurity in the forms of Boko Haram, militancy and kidnappings affect FDI negligibly and thus growth in turn is not largely hindered by insecurity. This may be explained by the fact that the current insecurity challenge (the Boko Haram insurgency) is localized in areas of the country where FDI inflows are quite little or insignificant.

However, it is still recommended that the efforts by the government to address the current insecurity challenge be intensified so that the negative spill over effects such as waste of potential output, rise in crime level and the general economic and social hardship on displaced persons is reduced. In addition government should continue to implement measures that would encourage the flow of FDI into the country. Such measures would include:

- Sanitizing the tax system with the view of eliminating multiple taxation which could impede foreign investment into the country;
- Creating the infrastructural framework needed for private sector participation in productive ventures in the country. The issue of power generation should be given particular attention.
- Lastly, as a corollary to the first recommendation, efforts should be intensified to combat the Boko Haram insurgency and all other forms of insecurity that not only destabilize the economic climate, but that are also a threat to lives and property.

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## Appendices

### Appendix 1

Null Hypothesis: D(EXRT) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=6)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.255102	0.0002
Test critical values:		
1% level	-3.699871	
5% level	-2.976263	
10% level	-2.627420	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EXRT,2)

Method: Least Squares

Date: 12/17/15 Time: 09:22

Sample (adjusted): 1988 2014

Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXRT(-1))	-0.995178	0.189374	-5.255102	0.0000
C	0.058780	0.028824	2.039238	0.0521
R-squared	0.524860	Mean dependent var		-0.010930
Adjusted R-squared	0.505855	S.D. dependent var		0.189162
S.E. of regression	0.132972	Akaike info criterion		-1.126164
Sum squared resid	0.442041	Schwarz criterion		-1.030176
Log likelihood	17.20321	Hannan-Quinn criter.		-1.097622
F-statistic	27.61610	Durbin-Watson stat		1.985230
Prob(F-statistic)	0.000019			

### Appendix 2

Null Hypothesis: D(FDI) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=6)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-8.434473	0.0000
Test critical values:		
1% level	-3.699871	
5% level	-2.976263	
10% level	-2.627420	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(FDI,2)

Method: Least Squares

Date: 12/17/15 Time: 09:23

Sample (adjusted): 1988 2014

Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	-1.485247	0.176092	-8.434473	0.0000
C	0.088148	0.065896	1.337682	0.1930
R-squared	0.739963	Mean dependent var		0.008444
Adjusted R-squared	0.729562	S.D. dependent var		0.651620
S.E. of regression	0.338866	Akaike info criterion		0.744765
Sum squared resid	2.870759	Schwarz criterion		0.840753
Log likelihood	-8.054325	Hannan-Quinn criter.		0.773307
F-statistic	71.14033	Durbin-Watson stat		2.214381

### Appendix 3

Null Hypothesis: D(INS) has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=6)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.936675	0.0001
Test critical values:		
1% level	-3.724070	
5% level	-2.986225	
10% level	-2.632604	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(INS,2)

Method: Least Squares

Date: 12/17/15 Time: 09:25

Sample (adjusted): 1990 2014

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INS(-1))	-2.734375	0.460590	-5.936675	0.0000
D(INS(-1),2)	1.080966	0.334014	3.236287	0.0040
D(INS(-2),2)	0.471591	0.192428	2.450735	0.0231
C	0.109375	0.101590	1.076634	0.2939
R-squared	0.781664	Mean dependent var		0.000000
S.D. dependent var	1.000000	S.E. of regression		0.499526
Akaike info criterion	1.595334	Sum squared resid		5.240057
Schwarz criterion	1.790354	Log likelihood		-15.94167
Hannan-Quinn criter.	1.649424	F-statistic		25.06072
Durbin-Watson stat	2.208886			

## Appendix 4

Null Hypothesis: D(RGDP,2) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=6)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-10.09729	0.0000
Test critical values:		
1% level	-3.711457	
5% level	-2.981038	
10% level	-2.629906	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(RGDP,3)

Method: Least Squares

Date: 12/17/15 Time: 09:26

Sample (adjusted): 1989 2014

Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1),2)	-1.864438	0.184647	-10.09729	0.0000
C	0.002952	0.005803	0.508726	0.6156
R-squared	0.809456	Mean dependent var		-0.005950
Adjusted R-squared	0.801517	S.D. dependent var		0.065645
S.E. of regression	0.029246	Akaike info criterion		-4.152357
Sum squared resid	0.020528	Schwarz criterion		-4.055580
Log likelihood	55.98064	Hannan-Quinn criter.		-4.124489
F-statistic	101.9552	Durbin-Watson stat		2.129872
Prob(F-statistic)	0.000000			

## Appendix 5

Dependent Variable: FDI

Method: Least Squares

Date: 12/17/15 Time: 09:43

Sample: 1986 2014

Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXRT	0.875458	0.103681	8.443791	0.0000
INS	-0.139958	0.126750	-1.104206	0.2796
C	3.649322	0.161411	22.60886	0.0000
R-squared	0.764135	Mean dependent var		5.034965
Adjusted R-squared	0.745992	S.D. dependent var		0.557589
S.E. of regression	0.281021	Akaike info criterion		0.396919
Sum squared resid	2.053286	Schwarz criterion		0.538364
Log likelihood	-2.755328	Hannan-Quinn criter.		0.441218
F-statistic	42.11629	Durbin-Watson stat		1.682490
Prob(F-statistic)	0.000000			

## Appendix 6

Pairwise Granger Causality Tests

Date: 12/17/15 Time: 09:44

Sample: 1986 2014

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause RGDP	27	3.76661	0.0392
RGDP does not Granger Cause FDI		1.33074	0.2847