

## The Determinants of Foreign Direct Investments (FDIs) and the Nigerian Economy

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### Abstract

*This article looked at some factors that influence the foreign direct investment in Nigeria, and their impact on the economy. The data used in this study covered a period of ten years (2001 -2010) and considered such variables such as real GDP, inflationary levels, openness of trade, electricity consumption, transport and communication. Econometric model and regression analysis were employed to analyse the data. The results based on the value of F-statistics (35.83) and the co-efficient of determination ( $R^2$ ) of 0.98 revealed that the model was well specified and that the explanatory variables are sufficient to explain the inflow of FDI to Nigeria. The negative values of parameters such as the real GDP, inflation and electricity consumption call for policy reconsiderations. Based on our findings, the following recommendations were made, among others: that electricity supply should improve remarkably; fiscal discipline should be adhered to strictly; the fight against corruption should be total and transparent; government should straighten and deepen all incentive, institutional and regulatory frameworks in the country; and all efforts should be geared towards reducing costs of doing business in the country, which are among the highest in the world.*

**Keywords:** Assessment, Determinants, Foreign Direct Investment, econometric model, regression

### Introduction

Foreign Direct Investment (FDI) is the ownership or control of some portion of companies or firms by foreigners in a domestic economy. According to Piana (2005), it consist of acquisition or creation of assets (e.g firm's equity, buildings, oil drilling rigs, etc) and in some cases these companies join together with the government of the domestic economy and termed as joint ventures companies. As obtainable in Nigeria, some factors determine the inflow of capital either in form of financial resources or real capital for investments. These factors could be economical or political and Nigerian security situation determines largely the aggregate investments in the country.

Since Independence in 1960, FDI has been given prominence in the quest for the growth and sustainable development of Nigeria. According to Udeaja, Udoh and Ebong (2008), Nigeria like other developing countries is trapped in low savings-investment cycle is dependent on foreign capital flows to stimulate economic growth and as oil exporting country has attracted more FDI compared to other Sub-Sahara African (SSA) countries.

According to Dinda (2009), Nigeria dominates the recipient of the FDI to African continent which received 70% of the sub-regional total and 11% of Africa's total and out of this; Nigeria's oil sector alone received 90% between 1970 and 2006. There have been factors which are seen to drive the growth of FDI in Nigeria which over time have not been performing positively, especially the business environments in the oil rich region of the Niger Delta and recently the security threats in the northern region of the country coupled with high cost of production brought about by poor electricity supply and poor transport infrastructure. According to Udeaja et al (2008), causes of capital flow to domestic economy include improvement in creditor relations, adoptions of sound fiscal and monetary policies and neighbourhood externalities and the presence of natural resources, etc, that offer a strong locational specific advantage in attracting FDI to a host country.

The Nigerian government has been mobilising foreigners to invest in Nigeria but factors like infrastructures, poor financial system, corruption, security challenges, etc, have continued to hamper the growth of the FDI in this country. On the other hand, Nigeria happens to be an oil dependent country which is largely described as an enclave industry, which needs large quantum of FDI for technology transfer, improvement in productivity, efficiency in resource allocation, etc. With the introduction of Structural Adjustment Programme (SAP) in 1986, Nigeria has continued to embark on liberal, regional, bilateral and multi-lateral trade agreements aimed at achieving more Foreign Direct Investments. According to Udeaja et al (2008), the SAP programme incorporated trade and exchange rate reforms with monetary and fiscal measures aimed at improving the economy through the discouragement of importation and make export-oriented multinationals gain on their investments.

The performances of the major determinants of FDI in this country have not been impressive over time in terms of infrastructures, business environments, price levels and others. This is contrary to the belief that rational investors will only invest in assets with higher rates of returns and less risk. This is in line with the portfolio allocation theory according to Ferderke (2002) which reasoned that FDI flows just like all other capital flows, are driven principally by rates of return and risk factors with positive correlation with returns and negatively related risks. In addition, the wave of corruption coupled with the challenges of the major determinants of FDI has given impetus to carry out more studies on FDI in Nigeria.

According to Iyela (2009), corruption increases the cost of doing business and as such foreign investors would prefer to invest in countries with lower rates of corruption which is believed to derive maximum profits from their investments. He added that the insecurity which manifest in kidnappings, hostage taking and deaths of innocent souls automatically discourage FDI. Instead firms will prefer countries with peaceful investment environments. It is against this backdrop that this article will x-ray the determinants of FDI in Nigeria and their impacts on the nation's economy.

### **Objectives of the Study**

The broad objective of the study is to assess the performance of FDI in Nigeria while the specific objectives are:

- a. To determine how the Gross Domestic Product (real GDP) has been influencing the inflow of FDI into Nigeria.
- b. To establish how the openness of trade measured by the import + export/GDP has impacted on the variability in FDI growth in Nigeria.
- c. (c ) To determine how the inflation trend in Nigeria has been affecting the inflow of FDI into Nigeria's economy
- d. To determine the impact of the electricity consumption on the growth of FDI into Nigeria's economy.
- e. To find out how transport and communication through their sectors investment spending have influenced the level of FDI into the Nigeria's economy.

### **Conceptual Clarifications**

FDI is the transfer of foreign capital in form of equity and other assets of international or multinational corporations. It may involve the joint ownership between the foreigners and the government of the domestic economy where the capital is invested and it is called the joint venture companies. According to Egbo (2012), FDI is an investment made to acquire a lasting management interest in a business enterprise in a given country other than that of the investor defined according to residency. He added that FDI is a combination of merger and acquisition and new investments as well as the reinvested earnings and loans from and similar capital transfers between parent companies and their affiliates. FDI is seen to play a key role in the growth and development process of developing nations, like Nigeria, whose human and material resources are underemployed or not fully employed. According to Shiro (2008), foreign investments consist of foreign resources such as technology, managerial and marketing expertise and capital which have considerable impact on the host nation's production capacity.

Foreign Direct Investment (FDI) occurs when a firm invests directly in the production or other facilities in a foreign country in which it has affective control (Shenkar, 2007). FDI requires the establishment of production facilities abroad and on the other hand the service facilities or establishment of an investment presence through capital contribution and building office facilities.

Carkovic and Levin (2002) in Oyatoye, Arogundade, Adebisi and Oluwakayode (2011) look at the rationale for offering special incentives to attract FDI to the host country based on the belief that FDI produces externalities in the form of technology transfer and spill-overs. Oyeranti (2003) noted that FDI based on economic theory and empirical evidence has the likely potential to impact positively in developing host countries. As several studies have been able to link FDI to prosperities of the host nations especially the developing countries, there are inherent factors that either encourage or hinder the growth of FDI to any given economy. According to Olusegun, Oluwatosin and Ayoola (2009), factors such as economic and technological conditions, financial system effectiveness, skills, infrastructures, institutional framework and macroeconomic stability in host country influence the efficiency of FDI in promoting growth.

There are different types of FDI depending on the perspective from which it is looked at. The various classifications are: source country (investor) perspective: Carves (1971) in Moosa (2002) distinguishes three types which are horizontal FDI, vertical FDI and conglomerate FDI. The purpose of horizontal FDI is that of horizontal expansion to produce the same goods abroad (host country) as in the home country. It represents a geographical diversification of MNC domestic product line (Shenkar, 2007). The critical factor here is product differentiation of the market structure. Horizontal FDI is carried out to take advantage of certain monopolistic or oligopolistic advantages, such as patents or differentiated products. On the other hand, vertical FDI is aimed at exploiting raw materials or intermediate goods intended to be used as inputs to be used in home country or to be nearer to the market (consumer) via the acquisition of distribution channels/outlets (forward vertical FDI). The third type of FDI under this classification is conglomerate FDI which occurs when MNC enter a foreign country to manufacture products not produced by the parent country at home. This involves both horizontal and vertical FDI. Conglomerate FDI involves more difficulties in establishing market power and competition in a host country. These arise from the MNC's inability to share distributive competencies developed at home. Vertical FDI can create financial and operational benefits such as transfer pricing, high profit margins, market power and quality control but it requires a global co-ordination by the headquarters (Shenkar, 2007).

Host country perspective: There are three types from this perspective; import substitution FDI, export substitution FDI, and government instituted FDI. Import substituting FDI involves the manufacturing of goods previously imported by the host country, necessarily implying that importation of goods by the host country and exports by the investing country will reduce. This type of FDI is determined by factors such as the size of the host country's market, transportation costs and trade barriers. Export-increasing FDI is driven by the desire to seek new sources of input, such as raw materials and intermediate goods. It is export-increasing in that the host country will increase its export of raw materials and intermediate goods to the investing country and its subsidiaries in other countries. Government initiated FDI occurs sometimes in a situation when a government offers incentives to foreign investors in attempting to eliminate a non-favourable balance of payments (Moosa, 2002).

Trade related classification: Kojima (1985) in Moosa (2002) classified it as either trade-orientated FDI, a situation generates an excess of demand for imports and excess supply of exports at the original terms or anti-trade – orientated which has an adverse effect on trade. Ayanwale (2007) categorise FDIs in which are motivated by the characteristics of the host country to two. These are market-seeking and non-market seeking. Market seeking investment FDI is aimed at servicing domestic markets, that is, goods manufactured in host markets are sold in those markets which can influence growth through the nature of domestic demand such as large markets and high income levels of the host country. Meanwhile, non-market seeking FDI is aimed at selling the goods manufactured in the host country in the markets abroad. This type of FDI is usually more beneficial to the host country through trade. FDI may also be classified into expansionary and defensive types. Expansionary FDI seeks to exploit firm-specific advantages in the host country. This contributes to the sales growth of the parent firm at home and abroad. Defensive FDI seeks cheap labour in the host country with the objective of reducing the cost of production (Chen and Ku, 2000 in Moosa, 2002).

### **Methodology**

The study employed secondary data obtained from the Central Bank of Nigeria statistical bulletins and annual report and statements of accounts covering the period of 2001 – 2010. The choice of the data used is based on its wide coverage and the standardisation as it has been processed from its raw form by the relevant authorities/agencies. Military regimes have always been regarded as an aberration in governance. The period of study was therefore targeted at the period of democratic administration – the norm in the civilised world. The study employs regression analysis to generate empirical results for an analysis.

The FDI is the dependent variable while Gross Domestic Product (GDP), Openness of trade (export + import/GDP), inflation, electricity, transport and communication (independent variables) are respectively the positive signs with respect to inflow of FDI into Nigeria but inflation could be negative or positive depending on the nature of industry that dominates the FDI in Nigeria on a priori expectations.

This study made use of the theory of eclectic paradigm developed by Dunning (1980) which merged several isolated theories of international economics which is basically the three forms of international activities of companies such as ownership advantage, locational advantage, and internalisation advantage. According to the theory, locational advantages are necessary for FDI. In furtherance to Dunning's theory, Denisia (2010) identifies factors such as technology, economies of learning, economies of scale and scope and greater access to financial capital which make the companies entering other countries triumph over foreign costs in foreign markets. He added some factors which determine the host country and other qualitative or quantitative factors such as transportation, telecommunication, market size, political advantages such as government policies, cultural diversity and attitude towards strangers.

In line with this eclectic paradigm, efforts were made to include factors such as GDP, openness of trade, inflation, electricity consumption, transport and communication which affect inflow of FDI to Nigeria.

$$FDI = f(GDP, OPNT, INF, ELECONP, TRANCOM)$$

Where :

FDI =	Foreign Direct Investment
GDP =	Gross Domestic Product
OPNT =	Openness of Trade
INF =	Inflation
ELECONP =	Electricity consumption (Mega Watt/hour)
TRANCOM =	Transportation and communication

It is expected that variables included as explanatory factors such as Gross Domestic Product (GDP), openness of trade, electricity consumption and transportation and communication, show positive relationship with FDI while inflation could exhibit either negative or positive relationship depending on the type of investment that dominate the FDI within the study period.

## Data Presentation and Analysis

### Estimated Results

$$FDI = 52.27 - 4.26LN\text{GDP} + 2.90LN\text{OPN} - 5.41LN\text{INFL} - 10.35LN\text{ELCON} + 8.86LN\text{TRACOM}$$

t statistic = 0.76	-0.54	1.31	-5.76	-3.11	2.84
se = (68.58)	(7.87)	(2.21)	(0.94)	(3.33)	(3.12)

$R^2 = 0.98$ ,  $R^2 = 0.95$ ,  $DW = 1.75$ ,  $F\text{-statistic} = 35.83$   
Standard error of the regression = 0.92

### Interpretation of Results

From the statistical analysis of medium term analysis of ten years, the partial elasticity of variable of Real GDP and openness are not significant to explaining the flow of FDI to Nigeria within the period of study. Also, the real GDP does not have correct sign but the openness of trade has a correct sign. Both variables are supposed to influence FDI positively. It shows therefore that the Nigeria's GDP growth has no direct correlation with the level of FDI to the domestic economy. This is an indication that the economic growth in Nigeria is not brought about by expansion in the overall investment but determined by the oil sector which is not sufficient to bring the needed FDI in Nigeria. The non-significance of the openness of trade could be justified on the ground that the Nigeria's foreign sector needs to perform better in the areas of manufacturing and value addition for our foreign account balance to improve. This is consistent with the World Bank report (2001) in Onayemi and Akintoye (2009) indicates that the percentage share of primary commodities in the Nigeria's export is 99% while manufacturing shares only 1%.

As regards the impact of inflation as explanatory variable on FDI, the sign based on the a priori expectation is correct since it could be negative or positive depending on the line of investment as per consumer goods or producer goods as well as the tolerable level of inflation.

The inflation in Nigeria is not justified on the ground of improved living standards but as a result of deficient domestic production which is lower than the market demand and as such, it has to import most of her goods. Coupled with system failures, foreign investors are not motivated by the demand in Nigeria to move in their capitals and such inflationary pressures in the country scare away foreign investors because the business environments which when put together add to the overhead costs which could prevent high return on investment. On the examination of the impact of the electricity consumption on the FDI, it shows that the level of electricity supply in Nigeria has negative impact on the flow of FDI to Nigeria. This justifies the many claims by researchers that unless power is stabilised in Nigeria, efforts to motivate foreign investors to the economy might not yield much result. The negative sign of the parameter shows that the electricity generation and consumption in Nigeria prevents investors to move in their capital from foreign economies to the economy.

When spendings on transport and communication are put into consideration, they show a positive impact on the FDI into the economy. Within the period of the study, the investment in transport and communication sufficiently impacts positively on the growth of FDI in Nigeria and it conforms to the a priori expectations that when the transport sector improves, investment will be attracted to the domestic economy. This is consistent with the result of positive correlation reached in the work of Faut and Ekrem (2002) that empirically proxied infrastructure by transport, energy and communication to establish positive correlation with FDI in the Turkish economy.

For the overall significance of the model, the value of  $R^2$  which is 0.98 indicates that the model quite fits the data and that the explanatory variables account for 98% of factors influencing the FDI inflow in Nigeria. Also, F-ratio of 35.83 compared to its theoretical value under  $V_1 = k - 1$  and  $V_2 = n - k$  degrees of freedom is an indication of significant relationship between FDI and all the explanatory variables. The Durbin Wastin statistic (DW) of 1.75 nullifies the assumption of serial correlation of the residuals. It means that error term in any given period does not depend on other period and it has overcome the fear that variables might not be significant while the result shows that it validates the significant power of the explanatory variable in the regression model. It therefore proves that the model is well formulated with the appropriate assumptions.

### **Summary of Findings**

Foreign Direct Investment is the ownership or control of some portion of companies or forms by foreigners in the domestic economy such as joint venture companies. The developing countries are believed to be influenced positively with adequate mobilization of FDI into their domestic economies because of the human and material resources employed to bring about more output within the domestic economy. For any nation to have adequate mobilization of FDI, the infrastructural facilities must be made to function efficiently.

The findings show that Nigeria's GDP does not bring about Foreign Direct Investment into the economy, the level of inflation is higher than it would encourage foreign capitals which are further attested by the negative correlation of electricity consumption to FDI. It shows that some factors contribute to higher operational costs to investors in Nigeria.

The variable representing investment in transport and communication exhibit positive relationship with FDI, an indication that these infrastructures should bring about more investment by the issue of projected expenditure and the realised objective is the problem in Nigeria. This is further explained by the level of corruption in Nigeria as most government expenditures end up in private pockets, making the country to remain in deep seated infrastructural failures.

The openness of trade is not significant revealing the need to have more competitive products at the international markets for the foreigners to begin to demand for more of Nigeria's exportable commodities.

The co-efficient of correlation  $R^2$  and F-statistic show that the model is well specified and the variables are good to explaining what determines the inflow of FDI in Nigeria within the period under study.

### **Recommendations**

Our recommendations include:

1. There should be concerted efforts to boost the performance of the non-oil sector in Nigeria through more investment by directing relevant authorities in the country to channel resources via long term loans to encourage more participation by investors in the agricultural and industrial sectors which will make the growth of the economy spread across other sectors and in turn encourage foreign investment in such areas.

2. The government's fiscal discipline should ensure that prices do not rise arbitrarily in the economy. This could be achieved through subsidizing industrial inputs and at the same time develop the entire transport sector to reduce overhead costs. This will go a long way to reducing the level of inflation and investors' overhead costs.
3. Power supply should be made to be steady through public – private partnership for efficiencies. This will make both domestic and private investors to mobilize their resources for investment.
4. In addition to the positive contribution of transport and communication on the FDI growth in Nigeria, there should be more massive investments in the sectors to make them conform to international standards whereby alternative transport means will be available for all categories of users and at the same time, the communication tariff and security should be lowered and improved upon respectively.
5. When efforts at liberalizing the economy is being pushed without making effort to improve on the technical qualities of the tradable resources, the benefit will only accrue more to the countries with superior technology. Nigeria should ensure that the qualities of exportable commodities are improved upon to bring about international competitiveness of goods. Both the private and public sector goods in Nigeria should have high level value addition in such a manner that investors can tap into. This can be achieved through the development of the indigenous technology.
6. The fight against corruption should intensify and be seen to be rigorous and transparent; efforts should be made to reduce costs of doing business in Nigeria which are among the highest in the world; and the federal government should ensure that all incentive, regulatory and institutional frameworks, put in place, in aid of investors and entrepreneurs are working effectively and efficiently.

### **Conclusion**

The fact that FDI can bring about more employment, output and hence welfare seems to be a universally established position and validated by previous studies. But before Nigeria can gainfully optimise these benefits, things must be made to work. This is the only way foreign capital can even compete for both human and material resources in the country without making too many efforts to travel round the world to call for foreigners to mobilize their resources into the country.

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## Appendix i

### Data for regression analysis

S/N	Year	Nominal FDI ₦'b	Real GDP ₦'m	Import ₦'m	Export ₦'m	OPN Imp +Exp /GDP	Inflation %	Electricity Consumption Mw/h	Transport & Communication ₦'m
1	2001	0.132434	356994.3	1358180.3	1867953.9	9.04	18.9	1104.7	10432.92
2	2002	0.166632	433203.5	1512695.3	1744177.7	7.52	12.9	1271.6	12496.15
3	2003	0.178479	477533.0	2080235.3	3087866.4	10.82	14.0	1519.5	13386.81
4	2004	0.249221	527576.0	1987045.3	4602781.5	12.49	15.0	1825.8	20301.50
5	2005	0.324657	561931.4	2800856.3	7246534.8	17.88	17.9	1873.1	23057.27
6	2006	624.5	595821.6	3108519.3	7324680.6	17.51	8.4	1518.9	26838.13
7	2007	759.4	634251.1	3911952.6	8309758.3	19.27	5.4	2245.5	31642.19
8	2008	460.2	672202.6	5189802.6	10161490.1	22.84	11.6	2108.0	37804.66
9	2009	572.5	718977.3	5102534.4	8356385.6	18.72	12.4	2060.7	45746.06
10	2010	268.7	775525.7	8005374.2	11035794.5	25.55	13.72	2383.1	56122.08

- Sources:
- (i) CBN statistical bulletin 2010
  - (ii) CBN Annual report and financial statements various years.
  - (iii) Author's calculation

Year	Nominal FDI ₹' b	Real GDP ₹' m	OPN Imp+Exp /GDP	Inflation %	Electricity Consumption Mw/h	Transport & Communication ₹' m
2001	0.132434	356994.3	9.04	18.9	1104.7	10432.92
2002	0.166632	433203.5	7.52	12.9	1271.6	12496.15
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2004	0.249221	527576.0	12.49	15.0	1825.8	20301.50
2005	0.324657	561931.4	17.88	17.9	1873.1	23057.27
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2010	268.7	775525.7	25.55	13.72	2383.1	56122.08

## Appendix ii

### Log-Linear Data for Regression

Year	lnFDI	lnRGDP	lnOPN	lnINFL	lnELCON	lnTRACOM
2001	-2.02167	12.78548	2.201659	2.939162	7.007329	9.252721
2002	-1.79197	12.97896	2.017566	2.557227	7.148031	9.433176
2003	-1.72328	13.07639	2.381396	2.639057	7.326137	9.502025
2004	-1.38942	13.17605	2.524928	2.70805	7.509774	9.91845
2005	-1.12499	13.23914	2.883683	2.884801	7.53535	10.04574
2006	6.436951	13.2977	2.862772	2.128232	7.325742	10.19758
2007	6.632529	13.3602	2.958549	1.686399	7.716683	10.36225
2008	6.131661	13.41832	3.128513	2.451005	7.653495	10.54019
2009	6.350013	13.48559	2.929592	2.517696	7.630801	10.73086
2010	5.593596	13.5613	3.240637	2.618855	7.776157	10.93528

### Log-Linear Regression Result

Dependent Variable: LNFDI

Method: Least Squares

Date: 08/29/12 Time: 11:36

Sample: 2001 2010

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRGDP	-4.262419	7.867803	-0.541755	0.6168
LNOPN	2.903183	2.214471	1.311005	0.2601
LNINFL	-5.412294	0.939185	-5.762758	0.0045
LNELCON	-10.34747	3.328903	-3.108371	0.0359
LNTRACOM	8.859459	3.117973	2.841416	0.0468
C	52.27459	68.57752	0.762270	0.4884
R-squared	0.978163	Mean dependent var	2.309342	
Adjusted R-squared	0.950867	S.D. dependent var	4.146840	
S.E. of regression	0.919186	Akaike info criterion	2.953053	
Sum squared resid	3.379614	Schwarz criterion	3.134604	
Log likelihood	-8.765267	F-statistic	35.83531	
Durbin-Watson stat	1.752560	Prob(F-statistic)	0.002041	