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The Impact of Foreign Exchange Volatility on Foreign Direct Investment in Nigeria [1999-2016]

By Dr. Chineze Obi
University of Nigeria

Abstract- This paper investigated the impact of foreign exchange volatility on foreign direct investment in Nigeria from 1999- to 2016. The research design adopted in this research is the ex-post facto research design involving the collation of relevant data from statistical bulletins in respect of the variables in the study. Ordinary least squares were used to estimate the partial coefficients of the independent variables. The findings of this study suggest that fluctuations in exchange rate have a positive and significant impact on foreign private investment in Nigeria. This may be attributed to the competitive levels of the Nigerian foreign exchange market, leading to the avoidance of excessive volatility. The result indicates that exchange rate fluctuations has positive and significant impact on Nigeria's foreign private investment which supports the argument that FDI investment in Nigeria is determined by exchange rate as well as technology, entrepreneurial skills, source of capital an overall.

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I. Introduction

The major foreign earnings of Nigeria is from oil; hence, volatility of crude oil prices in the world market has made the Nigerian economy highly susceptible to the ever changing exchange rates thus affecting the prices of goods and services in the Nigerian economy. According to Nzekwe (2006) Nigeria's failure to diversify its economy which would have helped cushion the effect of the constant changes in oil prices stems in part from weaknesses in the nation's small and insular private sector. This has had a heavy toll on our foreign reserves and invariably, our balance of trade and balance of payment.

As stated by Obadan (2006) a proper foreign exchange rate management in many ways strives to balance the level of imports with that of exports of goods that the country has comparative advantage. Such balance is necessary for an economy to develop to levels beyond subsistence. However, lack of government support for the real sector of the Nigerian economy as a result of it focus on foreign exchange earned from oil has also contributed immensely to the abysmal performance of the all other sectors especially the manufacturing sector. Manufacturers, who account for substantial contributions to Nigeria's gross domestic product before now have been unable to produce hence the fewer jobs, are created.

Author: *Ph.D, University of Nigeria.*

The Nigerian economy is in dire need of effective foreign exchange rate management that will diversify the economy, break the dominance of the oil sector, and give more opportunities to other sectors of the economy such as the manufacturing, agriculture, solid mineral mining etc and ultimately improve its balance of payment. In this way, a stable foreign exchange management can assist policy makers and planners to reduce risks in cause by fluctuations in exchange rate. An appreciation of exchange rate in Nigeria result to an increase in cost of production in Nigeria's economy. This has resulted to the huge deficit recorded in the country's balance of trade and of payment i.e. Nigeria imports more than it exports which has earned the country the status of a dumping ground for just about anything from foreign countries.

An examination of literature on exchange rate indicates that most studies are on exchange rate volatility and its impact on these macro-economic indices. Where the study is not on volatility of exchange rate, it involves uncertainty in foreign exchange market on the domestic output of nations macro-economic and institutional factors impact on stock market indices, development of government bond markets, on alternative wage-setting regimes, exchange rate and inflation, exchange rate volatility, stock prices and lending habits of banks. This seminar is an attempt to examine the impact of foreign exchange rate on foreign private investment in Nigeria.

The remainder of this paper is organized as follows: Section two contains the review of related literature; section three; the methodology; section four; presentation and analysis of data; while in section five; the conclusion and recommendations.

II. Review of Related Literature

The choice of whether a country becomes unitary system, confederation or a federation is a political decision. This political decision once made, have implications for political government, fiscal management and economic development as well as the attainment of social stability (Okunrounmu, 1996). According to Aigbokhan (1997) and Olowonomi (2000) a very important goal of any government is efficient allocation of resources and efficient distribution of

national wealth (Afolabi, 1999). Nigeria, after about 50 years of independent is still engulfed in the problem of how to share centrally generated revenue among the Local Governments, States and Federal Government. The volatility of oil production and revenue due to conflict in the Niger Delta Region plus the excruciating impact of the recent global financial crisis- with drop in commodity prices (including oil prices), aid flows and FDI respectively makes it important to look deeper into alternative sources of revenue. The tax alternatives is a viable option however, it much be practiced vis-à-vis it impact in attracting foreign investment into Nigeria.

Numerous empirical studies have demonstrated a positive correlation between the openness of an economy and its economic growth among developing countries (Syrquin and Chenery 1989; Borensztein, De Gregoria and Lee, 1995 and Wei, 1993). Edwards (1993) and Harrison (1996) provide reviews of the early studies. By the openness of an economy, they referred to a business and regulatory environment that are friendly toward trade and foreign investment. Despite the overall enthusiasm toward the positive impact of openness and trade in recent years, there are only a limited number of studies that analyzes the economic mechanism involved in the process. Some suggest that economic openness affects growth by inducing more investment (Baldwin and Seghezza, 1996). Many others emphasize the role of technological progress associated with more trade and more foreign investment of an economy (Tong, 2001).

Trade can promote technology progress in developing countries. For example, more trade induces more Research and Development (R&D) spending in domestic firms so that they can be more competitive in the market place. In addition, firms in developing countries can acquire new technologies embodied in new machines and new products they purchased from foreign sources. Similarly foreign direct investment can facilitate technology progress in developing countries. Foreign direct investment carried out by Multinational Corporations (MNCs) is believed to be one of the most important vehicles for the international diffusion of technology (Tong, 2001)

There are two reasons why FDI is very important for developing countries to acquire new technologies. First, MNCs are more advanced in technology. A substantial portion of the world's total research and development is carried out within the large MNCs. Therefore; MNCs often possess the much-needed new and advanced technologies. Second, through direct involvement of foreign businesses, MNCs domestic affiliates and other domestic producers can acquire new technology more directly and more effectively Tong (2001).

The benefits from FDI are not limited to new technology. Other direct benefits include the productivity increases in MNCs, local affiliates, new management skills brought in by the MNCs, and a potential market expansion brought about through foreign investors. Foreign investment can also increase the productivity in the host economy indirectly through its influence on both the industrial structure of the host economy and the conduct and performance of domestically owned firms. This is accomplished through increased competition in local economy, more investment in capital and human capital, training of labor and management, training of local suppliers of intermediate products, and transfer of knowledge (Blomstrom and Persson (1983); Frischtak and Newfarmer (1992); Blomstrom (1991)).

As a result of foreign investment and foreign knowledge inflow, local affiliates of MNCs can achieve productivity increase and therefore higher growth. At the same time, the firms can also realize more export as they become more and more competitive. Empirical studies suggest that the presence of MNCs in developing countries and the associated investment have important impacts on the export of their local affiliates in the host economy (Aitken, Hanson, and Harrison (1997), Lipsey (1995), and Naujoks and Schmidt (1995).

Foreign direct investment (FDI) is an integral part of an open and effective international economic system and a major catalyst to development. Yet, the benefits of FDI do not accrue automatically and evenly across countries, sectors and local communities. National policies and the international investment architecture matter for attracting FDI to a larger number of developing countries and for reaping the full benefits of FDI for development. The challenges primarily address host countries, which need to establish a transparent, broad and effective enabling policy environment for investment and to build the human and institutional capacities to implement them .OECD (2002)

With most FDI flows originating from Organization for Economic Co-operation Development (OECD) countries, developed countries can contribute to advancing this agenda. They can facilitate developing countries' access to international markets and technology, and ensure policy coherence for development more generally; use overseas development assistance (ODA) to leverage public/private investment projects; encourage non-OECD countries to integrate further into rules-based international frameworks for investment; actively promote the OECD Guidelines for Multinational Enterprises, together with other elements of the OECD Declaration on International Investment; and share with non-members the OECD peer review-based approach to building investment capacity (OECD, 2002).

Policymakers believe that foreign direct investment (FDI) produces positive effects on host economies. Some of these benefits are in the form of externalities and the adoption of foreign technology.

Externalities here can be in the form of licensing agreements, imitation, employee training and the introduction of new processes by the foreign firms (Alfaro, 2006). According to Tang, Selvanathan and Selvanathan (2008), multinational enterprise (MNEs) diffuse technology and management know-how to domestic firms. When FDI is undertaken in high risk areas or new industries, economic rents are created accruing to old technologies and traditional management styles. These are highly beneficial to the recipient economy. In addition, FDI helps in bridging the capital shortage gap and complement domestic investment especially when it flows to a high risk areas of new firms where domestic resource is limited (Noorzoy, 1979).

Nigeria is one of the economies with great demand for goods and services and has attracted some FDI over the years. The amount of FDI inflow into Nigeria has reached US$2.23 billion in 2003 and it rose to US$5.31 billion in 2004 (a 138 % increase) this figure rose again to US$9.92 billion (a 87% increase) in 2005. The figure however declined slightly to US$9.44 billion in 2006. The question that comes to mind is do these FDIs actually contribute to economic growth in Nigeria? If FDI actually contributes to growth, then the sustainability of FDI is a worthwhile activity and a way of achieving its sustainability is by identifying the factors such as favourable tax rate which will contribute to the growth and enhancement of FDI into the host country.

The concern with exchange rate management policy in Nigeria could be traced back to 1960 when the country became politically independent, even though the Central Bank of Nigeria and the Federal Ministry of Finance had come into being two years earlier (Ogiogio, 1996). The Management of exchange rate can be traced to two divisions/phases; pre-Structural Adjustment era of 1960-1985 and post-Structural Adjustment era 1986 – till date. The above binary classifications occasioned a closely historical sequence of about five phases, namely: There was a fixed parity of a one-to-one relationship between the Nigerian pound (N£) and the British pound sterling (B£) until the British pound was devalued in 1967.

Again, in the period 1967-1974, there was a fixed parity with the USD. During this stage of Nigeria's exchange rate policy it became apparent that there were drawbacks in pegging the naira to a single currency which led to its abandonment. Another phase in Nigeria's foreign exchange management was the period 1974-1976. This period heralded an independent in exchange rate policy. Neglecting the peg policy of naira to a single currency of US dollar in 1974-1976, CBN opted to an independent exchange rate management policy that pegged the naira to either the US dollar or British pound sterling, whichever currency was stronger in the foreign exchange market.

From the period 1976 to 1985, the naira was peggedto an import-weighted basket of currencies. In this era, the naira was pegged to a basket of currencies which comprises the seven currencies of Nigeria's major trading partners; the American dollar (USD), the British pound sterling (GBP), the German mark, the French franc (CFA), the Dutch guilder, the Swiss franc (CHF), and the Japanese yen (JPY). The 1981-1985 global economic crises led to unavailability of exchange rate while naira was grossly over-valued against the US dollar and gave FGN two options; one is to continue with the overvalued naira as a result of fixed exchange rate while the second alternative is to adopt the IMF-World Bank imported SAP which enshrined market forces (free hands of DD and SS). The Federal Government of Nigeria chose the second option and introduced the Second-tier Foreign Exchange Market (SFEM) which later transformed to foreign exchange market (FEM) in September 1986 during IBB regime.

The fifth era in Nigeria's exchange rate management commenced during post-SAP era up to date. SFEM was established with immediate effect in September 26, 1986. The Nigerian forex market was liberalized with the introduction of an Autonomous Foreign Exchange Market (AFEM) and the Inter-bank Foreign Exchange Market (IFEM) in 1995 and 1999 respectively. The AFEM metamorphosed into a daily, two-way quote IFEM, October 25, 1999. From 16 July 2002, CBN has replaced IFEM with the Dutch Auction System (DAS) which has been in operation till date.

III. Methodology

The research design adopted in this research is the *ex-post facto* research design. This is the type of research involving events that have already taken place, data exists as no attempt is made to control or manipulate relevant independent variables apparently because these variables already exist in their final form.Consistent with the above therefore and in line with researches conducted in this area of finance in Nigeria where most data utilized were obtained from the Central of Nigeria Statistical Bulletin for the relevant periods the nature and sources of data for this type of research will be secondary data. In line with the objective of this paper, the model used in this paper follows the prior empirical works of ------:

$$FPI = a + b_1 EXR + u$$

where;

FPI	=	Foreign Private Investment
EXR	=	Exchange rate
a	=	Constant of the regression function
b_1-b_3	=	Coefficient of the independent variables
μ	=	Error term

IV. Presentation and Analysis of Data

a) Presentation of Data

Table 4.1: Presents the data for this study

Table 4.1: Exchange Rate, Foreign Private Investment in Nigeria (1999-2011)

Year	EXR	FPI	FPI/GDP
1999	53.76	1.0	0.02
2000	58.25	51.1	0.74
2001	70.58	92.5	1.14
2002	85.13	24.8	0.22
2003	106.68	23.6	0.18
2004	126.69	23.5	0.14
2005	143.78	-180.1	-0.81
2006	148.33	-194.6	-0.68
2007	155.75	-231.9	-0.70
2008	90.31	-560.5	-1.43
2009	97.44	-122.3	-0.28
2010	93.39	-167.8	-0.31
2011	89.82	-247.6	-0.39
2012	79.58	-325.9	-0.45
2013	74.20	-506.6	-0.63
2014	69.51	-542.4	-0.61
2015	70.83	-329.4	-0.35
2016	78.70	-44.8	-0.04

Source: CBN Statistical Bulletin (Various Years)

A cursory look at the table above reveals that in 1999, real exchange rate was N53.76 to 1USD. This was sustained from 2000 to 2004 when the real effective exchange rate was N126.69 in 2004, 2001 N70.58, 2002 (N85.13), 2003 (N106.68), 2004 (N126.69). The real effective exchange rate increased slightly in 2005 (N143.78), 2006 (N148.33) but rose slightly to N155.75 in 2007 to 1USD. In 2008, it fell to N90.31 and rose to N97.44 in 2009 and further rose in 2010 when it was N93.39 to 1USD. The real exchange rate was N78.70 to 1USD as at 2016.

As indicated from table, foreign private investments in Nigeria had shown a gradual and consistent increase from 1999 to 2016. The yearly increase was sustained until has been sustained from 1999 to 2002 when there was a decrease of N67 billion representing 60.99% from the previous year figure of N92.5 billion. In 2003, Nigeria witnessed it lowest foreign private investment in percentage terms over the period 1987 to 2011. The quantum of foreign private investment reduced by 171.20% from N23.6 billion in 2003 to N23.5 billion 2004, a further year decrease was observed from in 2005 to 2016. While in 2003, the quantum of foreign private investment decreased by 7.11%, 2004 (39.64%), 2005 (30.27%), 2006 (48.23%). In 2007, the rate of increase was 14.81%, increasing the previous year figure of N481, 239.10million by N71, 259.50million. The gradual increase continue in 2008 (6.12%), 2009 (6.90%), 2010 (1.21%) and 2011 (10.72%). At the end of 2016, foreign portfolio investment reduced to -N44.8 billion.

b) Test of Hypothesis

To test the hypothesis of this paper, a hypothesis was formulated which was stated in null and alternate forms, thus,

Ho: Exchange rate fluctuations in Nigeria do not have positive and significant impact on foreign private investment in Nigeria.

Ha: Exchange rate fluctuations in Nigeria have positive and significant impact on foreign private investment in Nigeria.

Table 4.2: Presents the results of the hypothesis stated.

Table 4.2: Regression Results (Dependent variable, FPI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	2.712829	0.836478	3.243156	0.0055
FPIGDP	341.8403	43.12082	7.927501	0.0000
C	-354.4491	78.73336	-4.501892	0.0004
R-squared	0.807389			
Adjusted R-squared	0.781707			
F-statistic	31.43857			
Prob(F-statistic)	0.000004			

Source: E-view Result

As revealed from the table, exchange rate fluctuations had positive and significant impact on Nigeria's foreign private investment. The probability value confirms the significance of the result. The coefficient of determination which measures the goodness fit of the model as revealed indicates that 78.0% of the variations observed in the dependent variable were explained by variations in the dependent variable.

Foreign direct investment is a form of lending or finance in the area of equity participation. It generally involves the transfer of resources, including capital, technology, and management and marketing expertise. Ekpo (1997) argues that the need for foreign capital to supplement domestic resources was felt by the developing economies, in view of growing mismatch between their capital requirements and saving capacity. Further, many developing countries view foreign capital as a key element in their development strategy against the other forms of foreign financing as it aids in upgrading technology in hi-technology concentrated industries. Results existing from literature suggest that foreign direct investment is not determined by the exchange rate regime but by an economies desire for source of capital, managerial expertise, and technology for both developing economies and economies in transition. According to Root (1984), foreign direct investment involves flows of capital, technology and entrepreneurial skills to the host economy where they are combined with local factors in the production of goods for local and for export markets.

V. Conclusion and Recommendations

The findings of this study suggest that fluctuations in exchange rate have a positive and significant impact on foreign private investment in Nigeria. This may be attributed to the competitive levels of the Nigerian foreign exchange market, leading to the avoidance of excessive volatility. The result indicates that exchange rate fluctuations has positive and significant impact on Nigeria's foreign private investment which supports the argument that FDI investment in Nigeria is determine by exchange rate as well as other motives such as technology, entrepreneurial skills, source of capital an overall. An effective foreign exchange rate management is expected to break the dominance of the oil sector, and give more opportunities to other sectors of the economy such as the manufacturing, agriculture, solid mineral mining etc and ultimately improve its balance of payment. FDI is an important avenue for investment in agricultural, manufacturing and transfer of technology to an economy. Though this study found that exchange rate fluctuation has positive impact on foreign direct investment in Nigeria, however, a stable foreign exchange management is recommended in Nigeria. This can assist foreign investors to reduce their risks in investment. This study thus recommends an aggressive expansion of the Nigerian economy especially investment in the real sectors of the Nigerian economy. This obviously will lead to less dependent on oil revenue which is determined by fluctuations in exchange rate prices.

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Dependent Variable: FPI
Method: Least Squares
Date: 08/23/17 Time: 12:52
Sample: 1999 2016
Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	2.712829	0.836478	3.243156	0.0055
FPIGDP	341.8403	43.12082	7.927501	0.0000
C	-354.4491	78.73336	-4.501892	0.0004

R-squared	0.807389	Mean dependent var	-179.8556
Adjusted R-squared	0.781707	S.D. dependent var	208.7575
S.E. of regression	97.53523	Akaike info criterion	12.14932
Sum squared resid	142696.8	Schwarz criterion	12.29771
Log likelihood	-106.3438	Hannan-Quinn criter.	12.16978
F-statistic	31.43857	Durbin-Watson stat	1.294339
Prob(F-statistic)	0.000004		