
S. O. Oladipo
Department of Economics, Accounting and Finance,
Bells University of Technology,
Ota, Ogun State, Nigeria.
E-mail: giftsamniiyo@yahoo.com

Abstract

This study examines the macroeconomic determinants of foreign direct investment in Nigeria. It, specifically, examines a few selected macroeconomic variables that have either direct or indirect relationship with foreign direct investment in Nigeria. Also, a trend analysis is performed to throw light on the flow of Foreign Direct Investment (FDI). This is with the view to providing empirical evidence on how macroeconomic variables determine FDI in stimulating economic growth in Nigeria.

Secondary data are used in this study. Annual time series data for the period of 1985 to 2010 on macroeconomic variables such as Foreign Direct Investment (FDI), Money Supply (MS), Gross Domestic Product (GDP), Inflation (INF), Trade Openness (OP), Government Capital Expenditure (GCE), Government Recurrent Expenditure (GRE), Poverty Level (POV) Exchange Rate (EXR) and Interest Rate (INR) are sourced from the 2010 Central Bank of Nigeria Statistical Bulletin published by the Central Bank of Nigeria. Generalised Method of Moment (GMM) is adopted for the analysis of the macroeconomic determinant of foreign direct investment.

The results from the GMM estimates show that only EXR, INR, MS and OP determine foreign direct investment in Nigeria, and that they both determine foreign direct investment positively given that (p>0.05) i.e. at 5% level of significance, except that of GRE and previous FDI which determine FDI negatively at 10% level of significance. However, the effect of money supply on foreign direct investment in Nigeria is stronger than that of other variables given the coefficient of money supply which is 2.82 per cent.
1. Introduction

Foreign Direct Investment (FDI) has been debated to be an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment. Therefore, the need for the Government to provide special incentives in order to motivate foreign firms to set up companies in the country becomes an important issue. Carkovic and Levine (2002) note that the economic rationale for offering special incentives to attract FDI frequently derives from the belief that foreign investment produces externalities in the form of technology transfers and spillovers.

Several governments in African countries, Nigeria inclusive, have formulated various policies towards stimulating economic activities by attracting FDI. In fact, one of the pillars on which the New Partnership for Africa’s Development (NEPAD) was launched is to increase available capital through a combination of reforms, resource mobilisation and conducive environment for FDI (Funke and Nsouli, 2003). Unfortunately, the efforts of most countries in Africa to attract FDI have been futile in spite of the perceived and obvious need for FDI on the continent. The development is disturbing, sending very little hope of economic development and growth for these countries (Adams, 2009). Furthermore, the pattern of the FDI that does exist is often skewed towards extractive industries, meaning that the differential rate of FDI inflow into sub-Saharan African countries has been adduced to be due to natural resources, although the size of the local market may also be a consideration (Morriset 2000; Asiedu, 2001).

The Nigerian government has been trying to provide an investment climate conducive for foreign investments, since the inflow of foreign investments into the country has not been encouraging. The need for foreign direct investment in Nigeria is borne out of the underdeveloped state of the country’s economy that essentially hinders the pace of her economic development. Despite the various macroeconomic measures put in place by the Nigerian government, there seems to be insufficient inflow of FDI into the country.

Moreover, the determinant of FDI in Nigeria remains an empirical issue that needs to be revisited in the literature. Studies [(Odozi, 1995; Oyinlola, 1995; Ariyo, 1998; Adelayan, 2000; Ayanwale and Bamire, 2001; Akinola, 2004; Ayanwale, 2007; Okon et al., 2012 and Akinmulegun, 2012)] have examined the impacts of FDI on economic growth in Nigeria with all of them coming up with contradicting and inconclusive outcomes. In addition, Ekpo (1995), Anyanwu (1998), Ayanwale (2007) and Asiedu (2006) have examined the FDI determinant in Nigeria all with the contradicting outcomes. What these studies failed to consider is the fact that the outcome of the initial FDI could be a factor in determining the future FDI. Therefore, this
study examines the macroeconomic determinant of FDI giving a specific attention to knowing if and only if the previous FDI outcome could motivate the future FDI level in Nigeria using GMM which remains an empirical gap in the literature.

Based on the above issues, the following questions are raised: (a) What has been the trend of FDI flow in Nigeria? (b) What are the macroeconomic variable determinants of FDI in Nigeria?

Therefore, the objectives of this study include:

(i) To analyse the trend of foreign direct investment in Nigeria between 1985 and 2010; and
(ii) To examine the macroeconomic variable determinants of FDI in Nigeria.

This study becomes necessary given the facts that most countries of the world are developing based on their ability to attract FDI. Studies have shown that FDI stimulates economic development which is an important objective of any government. The rate of unemployment in Nigeria is becoming alarming and the need to address poverty in Nigeria has become an issue. This is because it has been observed that over 70% of the Nigerian population are living in abject poverty due to low level of investment in the country. The study is significant because it differs from all other studies in terms of methodology and scope. This is because most studies in Nigeria have focused mainly on FDI -economic growth nexus using Ordinary Least Square (OLS). The study is timely and as it will guide the government in formulating both monetary and fiscal policies that encourage FDI into the country and which as a result would create employment and economic growth and reduce the poverty level, taking account of past trends and recent developments in the global financial market for capital flows.

The paper is such arranged that section one is the introduction. While section 2 reviews the literatures on the study; the methodology adopted, trend analysis and the empirical results are presented in sections 3, 4 and 5 respectively. Section 6 concludes and makes policy recommendations based on the study.

2. Literature Review

A lot of research interest has been shown on the FDI-growth nexus and the determinants of FDI inflows. Early empirical works on the FDI-growth nexus modified the growth accounting method introduced by Solow (1957). This approach defines an augmented Solow model with technology, capital, labour, inward FDI and a vector of ancillary variables such as import and export volumes. Following this theory, most of the empirical works on the effects of FDI focused on their impacts on output and productivity, with a special attention on the interaction of FDI with human capital and the level of technology (Vu and Noy, 2009). The focus of research works
on FDI and economic growth can be broadly classified into two. First, FDI is considered to have direct impact on trade through which the growth process is assured (Markussen and Vernables, 1998). Second, FDI is assumed to augment domestic capital thereby stimulating the productivity of domestic investments (Borensztein et al., 1998; Driffield, 2001). These two arguments are in conformity with endogenous growth theories (Romer, 1990) and cross country models on industrialization (Chenery et al., 1986) in which both the quantity and quality of factors of production as well as the transformation of the production processes are ingredients in developing a competitive advantage.

FDI has empirically been found to stimulate economic growth by a number of researchers (Borensztein et al., 1998; Glass and Saggi, 1999). Dees (1998) submits that FDI has been important in explaining China’s economic growth, while De Mello (1997) presents a positive correlation for selected Latin American countries. Inflows of foreign capital are assumed to boost investment levels. Blomstrom et al. (1994) report that FDI exerts a positive effect on economic growth, but that there seems to be a threshold level of income above which FDI has positive effect on economic growth and below which it does not. The explanation is that only those countries that have reached a certain income level can absorb new technologies and benefit from technology diffusion, and thus reap the extra advantages that FDI can offer. Previous works suggest human capital as one of the reasons for the differential response to FDI at different levels of income. This is because it takes a well-educated population to understand and spread the benefits of new innovations to the whole economy.

Also, Borensztein et al. (1998) find out that the interaction of FDI and human capitals had important effect on economic growth, and suggest that the differences in the technological absorptive ability may explain the variation in growth effects of FDI across countries. They suggest further that countries may need a minimum threshold stock of human capital in order to experience positive effects of FDI. Balasubramanyan et al. (1996) report positive interaction between human capital and FDI. They had earlier found significant results supporting the assumption that FDI is more important to economic growth in export-promoting than import-substituting countries. This implies that the impact of FDI varies across countries and that trade policy can affect the role of FDI in economic growth.

In addition to this, Olofsdotter (1998) submits that the beneficiary effects of FDI are stronger in those countries with a higher level of institutional capability. He therefore emphasises the importance of bureaucratic efficiency in enabling FDI effects. The neoclassical economists argue that FDI influences economic growth by increasing the amount of capital per person. However,
because of diminishing returns to capital, it does not influence long-run economic growth. Bengos and Sanchez-Robles (2003) assert that even though FDI is positively correlated with economic growth, host countries require minimum human capital, economic stability and liberalized markets in order to benefit from long-term FDI inflows. Interestingly, Bende-Nabende et al. (2002) found that direct long-term impact of FDI on output is significant and positive for the comparatively and economically less advanced Philippines and Thailand, but negative in the more economically advanced Japan and Taiwan. Hence, the level of economic development may not be the main enabling factor in FDI-growth nexus. On the other hand, the endogenous school of thought opines that FDI also influences long-run variables such as research and development (R&D) and human capital (Romer, 1986; Lucas, 1988). FDI could be beneficial in the short term but not in the long term. Durham (2004), for example, fails to establish a positive relationship between FDI and growth, as he only suggests that the effects of FDI are contingent on the “absorptive capability” of host countries. Obwona (2001) notes, in his study of the determinants of FDI and their impact on growth in Uganda, that macroeconomic and political stability and policy consistency are important parameters determining the flow of FDI into Uganda and that FDI affects growth positively but insignificantly.

In another work, Hsiao and Shen (2003) add that a high level of urbanization is also conducive to a positive impact of FDI on growth. Comparing evidence from developed and developing countries, Blonigen and Wang (2005) argue that mixing wealthy and poor countries is inappropriate in FDI studies. They note that the factors that affect FDI flows are different across the income groups. Interestingly, they find evidence of beneficial FDI only for developing countries and not for the developed ones, while they find the crowding-out effect of FDI on domestic investment to hold for the wealthy group of nations.

Recently, Vu and Noy (2009) carried out a sectoral analysis of foreign direct investment and growth in developed countries. They focused on the sector specific impacts of FDI on growth. They found that FDI has positive and no statistically discernible effects on economic growth through its interaction with labour. Moreover, they found that the effects seem to be very different across countries and economic sectors. In addition, Ruxanda and Muraru (2010) investigate the relationship between FDI and economic growth in the Romanian economy, using simultaneous equation models. They obtain evidence of the bi-directional causality between FDI and economic growth. In agreement with Muraru and Ruxanda is the work of Okon et al. (2012) which investigates the relationship between foreign direct investment and economic growth in
Nigeria between 1970 and 2008. The paper makes the proposition that there is endogeniety, i.e. bi-directional relationship between FDI and economic growth in Nigeria.

The results for developing countries are not so clear, for instance while some findings give positive spillovers (Blomstrom and Sjoholm, 1999; Kokko, 1994), others such as Aitken et al. (1997) report limited evidence with no evidence of positive short-run spillover from foreign firms. Some of the reasons adduced for these mixed results are that the envisaged forward and backward linkages may not necessarily be there (Aitken et al., 1997) and that arguments of MNEs encouraging increased productivity due to competition may not be true in practice (Ayanwale, 2007). Other reasons include the fact that MNEs tend to locate in high productivity industries and, therefore, could force less productive firms to exit (Smarzynska, 2002).Caves (1996) also postulates the crowding out of domestic firms and possible contraction in total industry size and/or employment. However, crowding out is a more rare event and the benefit of FDI tends to be prevalent (Cotton and Ramachandran, 2001). Furthermore, the role of FDI in export promotion remains controversial and depends crucially on the motive for such investment (World Bank, 2009). The consensus in the literature appears to be that FDI spillovers depend on the host country’s capacity to absorb the foreign technology and the type of investment climate (Obwona, 2004).

Edozien (1968) discusses the linkage effect of FDI on the Nigerian economy and submits that these have not been considerable and that the broad linkage effects are lower than the Chenery-Watanabe average. Oseghale and Amonkhienan (1987) realise that FDI is positively associated with GDP, concluding that greater inflows of FDI will spell a better economic performance for the country. Odozi (1995) places special emphasis on the factors affecting FDI flows into Nigeria in both pre and post Structural Adjustment Programme (SAP) eras and find out that the macro policies in place before SAP were discouraging investors. This policy environment led to the proliferation and growth of parallel markets and sustained capital flight.

In another work by Ekpo (1995) it is reported that political regime, real income per capita, inflation rate, world interest rate, credit rating and debt service were the key factors explaining the variability of FDI inflows into Nigeria. Similarly, Ayanwale and Bamire (2001) assess the influence of FDI on firm level productivity in Nigeria and report positive spillover of foreign firms on domestic firm productivity. Ariyo (1998) studies the investment trend and its impact on Nigeria’s economic growth over the years. He find that only private domestic investment consistently contributed to raising GDP growth rates during the period considered (1970-1995). Furthermore, there is no reliable evidence that all the investment variables included in his
analysis had any perceptible influence on economic growth. He therefore suggests the need for an institutional rearrangement that recognises and protects the interest of major partners in the development of the economy. A common weakness that has been identified in most of these studies is that they fail to control for the fact that most of the FDI inflows to Nigeria have been concentrated on the extractive industry (oil and natural resources sector).

According to Ayanwale (2007), these works invariably assess the impacts of FDI inflows to the extractive industry on Nigeria’s economic growth. Akinlo (2004) specifically control for the oil/ non-oil FDI dichotomy in Nigeria. He investigates the impact of foreign direct investment (FDI) on economic growth in Nigeria, using an Error Correction model (ECM). He comes to the conclusion that both private capital and lagged foreign capital have small and not a statistically significant effect on economic growth. Furthermore, his results support the argument that extractive FDI might not be growth enhancing as much as manufacturing FDI.

Oyinlola (1995) identifies the contributions of foreign capital to the prosperity or poverty of Less Developed Countries (LDCs) by conceptualising foreign capital to include foreign loans, direct foreign investments and export earnings. Using Chenery and Stout’s two-gap model (Chenery and Stout, 1966), he concludes that FDI has a negative effect on economic development in Nigeria. Also, on the basis of time series data, Ekpo (1995) reports that political regime, real income per capita, rate of inflation, world interest rate, credit rating and debt service were the key factors explaining the variability of FDI into Nigeria.

Anyanwu (1998) places a particular emphasis on the determinants of FDI inflows into Nigeria. He identifies change in domestic investment, change in domestic output or market size, indigenization policy and change in openness of the economy as major determinants of FDI inflows into Nigeria and thereby maintains that effort in this wise must be made to raise the nation’s economic growth so as to be able to attract more FDI. Ayanwale (2007) investigates the empirical relationship between non-extractive FDI and economic growth in Nigeria and also examines the determinants of FDI inflows into the Nigerian economy. He adopts both single-equation and simultaneous equation models to examine the relationship. His results suggest that the determinants of FDI in Nigeria are market size, infrastructure development and stable macroeconomic policy. Openness to trade and human capital are not found to be FDI inducing. He also finds a positive link between FDI and growth in Nigeria.

In summary, there exist some areas in the understanding of this research stream that deserve further empirical investigation based on the literature reviewed on the determinant of foreign direct investment in Nigeria. This is because most the studies reviewed fail to investigate or
capture the previous FDI as a component capable of determining the future foreign direct investment in Nigeria. It is equally important to note that many of the previous works have generally suffered from several methodological drawbacks. Most of the existing studies build on Ordinary Least Square (OLS) which neither captures nor accounts for the previous effects of endogenous variable itself, and it should be noted that OLS assumes that all its parameters are true which is not so in most cases.

3. Methodology

3.1 Theoretical Frame work

Following the works of Dinda (2009); Asiedu (2006) and Anyanwu (1998), this study builds on the Neo-classical theory which tends to emphasize the ease of substitution among factors of production (labour, capital, land, and other essentials in the production of commodities), which permits the economy to achieve steady-state growth (a constant proportionate rate of growth of all real variables). Neo-classical theory predicts the long-run equilibrium of a competitive economy, with particular attention paid to the accumulation of capital goods, growth in population and technological progress. Because factor prices are flexible and replaceable among factors possible in such a model, the natural and warranted rates of growth are equal. Dinda (2009) reveals that the endowment of natural resources, openness, macroeconomic risk factors like inflation and exchange rates are significant determinants of FDI inflow to Nigeria. Asiedu (2006) finds natural resources, large market size, lower inflation, good infrastructure, an educated population, openness to FDI, less corruption, political stability and a reliable legal system as major determinants of FDI flows. Anyanwu (1998) identifies change in domestic investment, change in domestic output or market size, indigenisation policy, and change in openness of the economy as major determinants of FDI while Ekpo (1995) reports that political regime, real income per capital, rate of inflation, world interest rate, credit rating and debt service were the key factors explaining the variability of FDI into Nigeria.

3.2 Model Specification

To examine the macroeconomic determinant of FDI, the Generalized Methods of Moments (GMM) is employed. The application of GMM to time series estimation has some attractive features. First, it affords one the opportunity to specify distributional assumptions such as normal errors. Second, it provides a unifying framework for the analysis of many familiar estimators such as Ordinary Least Squares (OLS) and Instrumental Variable (IV). Third, it offers a robust method of estimation in a situation where the traditional methods appear computationally cumbersome.
and lastly, it gives room for the specification of an economically interesting set of moments, or a set of moments believed to be robust to misspecifications of the economic or statistical model (Kennedy, 2003).

Following a general linear regression model specified as:

\[ y_i = x'_i \beta + u_i \]  

The OLS estimator \( \hat{\beta} = \frac{\sum_{i=1}^{n} x_i y_i}{\sum_{i=1}^{n} x_i^2} \) is consistent for \( \beta \) given \( E(u_i / x) = 0 \). A regression model with the first lagged-dependent variable as a regressor can be specified from equation 34 as:

\[ y_i = y'_{i-1} \beta_1 + x'_i \beta_2 + u_i \]  

The model in equation (2) is chosen for parsimony and one year lagged value of \( y_{i-1} \) provides the current information about \( y_i \). The regression error \( u_i \) though uncorrelated with \( x_i \) correlates with \( y_{i-1} \) and the past value of \( y_i \). This correlation leads to OLS estimation being inconsistent for \( \beta \). The GMM estimator (Hansen, 1982) therefore becomes consistent for \( \beta \). An instrument variable \( z \) that is correlated with \( y_{i-1} \) and uncorrelated with \( y_i \) gives consistent estimation. This implies that \( E(u_i / z) = 0 \), which gives the moment condition or population zero-correlation condition as:

\[ E\left[ z (y_i - x'_i \beta) \right] = 0 \]

given equation (2), macroeconomics determinant of FDI is specified as:

\[ f_t = \alpha + \beta_1 f_{t-1} + \beta_2 y_t + \beta_3 op_t + \beta_4 ex_t + \beta_5 pop_t + \beta_6 ir_t + \beta_7 if_t + \beta_8 gcx_t + \beta_9 grx_t + \beta_{10} ms_t + u_t \]  

Where \( \alpha \) is the constant term, \( f_{t-1} \) is one year past value of FDI and \( u_t \) is the error term at time \( t \). The inclusion of the lagged dependent variable renders the OLS estimator biased and inconsistent. Anderson and Hsiao (1981) propose a strategy for handling this problem. They suggest taking the First Difference (FD) transformation which eliminates the correlation between the lagged dependent variable and the error term. Taking the FD, the models become:

\[ \Delta f_t = \alpha + \beta_1 \Delta f_{t-1} + \beta_2 \Delta y_t + \beta_3 \Delta op_t + \beta_4 \Delta ex_t + \beta_5 \Delta pop_t + \beta_6 \Delta ir_t + \beta_7 \Delta if_t + \beta_8 \Delta gcx_t + \beta_9 \Delta grx_t + \beta_{10} \Delta ms_t + \Delta u_t \]
By first-differencing the model, $\Delta u_t$ becomes uncorrelated with $\Delta f_{t-1}$ for $k \geq 2$ (Anderson and Hsiao, 1981). The instrumental variables estimation can be obtained using $\Delta f_{t-2} = (f_{t-2} - f_{t-3})$. These instruments will not be correlated with $\Delta u_t = (u_t - u_{t-1})$, as long as the $u_t$ are not serially correlated with one and other.


This study uses essentially secondary data for analysis. The data on the variables were obtained from the following sources: (i) Central Bank of Nigeria (CBN) Statistical Bulletin (2010) (ii) National Bureau of Statistics (NBS)'s various publications (iii) World Development Indicator (2010). The consideration for the above variables is based on the fact that investment in Nigeria is considered given favourable conditions of these variables in Nigeria.

Therefore, descriptive analyses is employed in obtaining the first objective while equation 5 is estimated using Generalised Method of Moment in obtaining the second objective.


The flow of foreign direct investment has been remarkable for most periods in Nigeria. As the evidence from the graph below suggests and given the data used in computation, it is observed that in 1985 FDI was N434.1 million, although the FD level decreased by average between the period of 1990-1995 to about 34% from 98% of the period of 1985-1990, showing about 33.7% decrease on average as a result of implausible increase in tight economic policy of 1993 to 1995.

FIG 1: THE TREND OF FOREIGN DIRECT INVESTMENT IN NIGERIA (1985-2010)
Author’s Computation (2013)

The period of 1995-2000 was a very tight period in Nigeria. During this period the FDI increased to about 70% on average which was an increase of about 50% from the period of 1990-1995. The FDI between the period of 1995-2000 was highly needed and encouraged by the government so as to survive the economy. During this period, there appeared to be a general concern that the period resulted in higher incidence of poverty in Nigeria. Macroeconomic indices tend to confirm this assertion. For instance, the growth rate of the real GDP since SAP has not been impressive. From 3% in 1993 it dropped to 1.3% in 1994 and then rose to 2.2%, 3.4%, 3.8% and 2.4% in 1995, 1996, 1997 and 1998 respectively. Also, data on unemployment rate, price level and the worsening state of urban and rural infrastructure during the period further pointed to a dismal picture of the devastating state of the poverty incidence in Nigeria (Godswill and Awogbemi, 2011). The period of 2000-2005’s FDI also increased speedily but between the period of 2005-2010 the government began to encourage domestic investors thereby reducing FDI from 135.9% to 87% on average.

5. Empirical Results

Table 5.1: The Result of GMM without Time Series Properties

<table>
<thead>
<tr>
<th>Variables</th>
<th>EXR</th>
<th>INF</th>
<th>INR</th>
<th>LGDP</th>
<th>LGCX</th>
<th>LGRX</th>
<th>LMS</th>
<th>OP</th>
<th>POV</th>
<th>FDI(-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>0.01</td>
<td>0.001</td>
<td>0.02</td>
<td>1.18</td>
<td>-0.35</td>
<td>-3.08</td>
<td>2.82</td>
<td>0.56</td>
<td>-0.001</td>
<td>-6.43E-07</td>
</tr>
<tr>
<td>Prob</td>
<td>0.05</td>
<td>0.95</td>
<td>0.03</td>
<td>0.27</td>
<td>0.57</td>
<td>0.16</td>
<td>0.002</td>
<td>0.03</td>
<td>0.99</td>
<td>0.09</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.895784</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.739459</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.659632</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.359126</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J Statistics</td>
<td>2.360030</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From Table 5.1 above, 1.2 is the partial regression coefficient of gross domestic product which shows that with the influence of all other control variables held constant, as gross domestic product increase, i.e. 1 percentage on average, foreign direct investment goes up by 1.2 per cent. The coefficient 0.3 shows that holding the influence of all other control variables constant, on average, the rate of foreign direct investment goes up by about 0.56 per cent as trade openness increases by one percentage. Also, if the influences of government capital expenditure, poverty level, interest rate, trade openness, exchange rate, gross domestic product and money supply are held constant on average, given the coefficient of inflation to be 0.001, foreign direct investment goes up by about 0.0001 per cent. Again, if all other control variables are held constant, an increase in money supply and interest rate decreases foreign direct investment by 0.27 and 0.67
respectively on average. Also, if all other control variables are held constant, an increase in exchange rate, interest rate and money supply increases foreign direct investment by 0.01, 0.02 and 2.82 respectively. It can also be seen that a per cent increase in poverty level and previous or past foreign direct investment itself decreases the present foreign direct investment by 0.001 and 6.0 per cent, while a per cent increase in government capital expenditure and government recurrent expenditure reduces FDI by 0.35 and 3.11 per cent. The $R^2$ value of about 86 means that 86 per cent of the variation in foreign direct investment is explained by government capital expenditure, government recurrent expenditure poverty level, interest rate, trade openness, exchange rate, gross domestic product and money supply and inflation in Nigeria.

However, the Durbin-Watson statistics indicates the problem of autocorrelation, and to correct this, stationarity test is conducted. This is essential given the fact that most recent developments in macro econometric modelling suggest that macroeconomic time series are not stationary in their levels and that many time series are most adequately represented by first differences (Dickey et al., 1991). Evidence from the results of unit root test confirms that all the variables were not stationary at level. However, they become stationary after first difference under the augmented dickey fuller test with intercept only.

Therefore, the stationarity level of the variables is employed in re-running the analysis. This is presented in Table 5.2 below.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>D(EXR)</th>
<th>D(INR)</th>
<th>D(LMS)</th>
<th>D(OP)</th>
<th>D(FDI(-1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.745544</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.673429</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.259632</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>1.759126</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J Statistics</td>
<td>0.000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5.2 Discussion of the Result

The result from the Generalised Method of Moment (GMM) estimation shows that only exchange rate, trade openness, money supply and interest rate determine foreign direct investment in Nigeria, and that, they all determine foreign direct investment positively given that ($p<0.05$). However, the effect of money supply on foreign direct investment in Nigeria is stronger compared to that of trade openness, interest rate and exchange rate. This implies that foreign investors would be interested in investing in a country where the demand for their product would
be increasing at every point in time given the level of money supply that influences their profit margin.

Also, an increase in lending interest rate determines flow of FDI positively. This simply implies that when lending interest rate increases in Nigeria, domestic investors find it very difficult to invest in the economy since profit level is marginalised as a result of inability to secure loan. This, therefore, gives the foreign investors the opportunity of moving capital from their home country in order to maximise profit since there would be little or no competition for their product in the country. However, this has a great adverse effect on the economy. For instance, the growth rate of the real GDP since SAP when most domestic investor could no longer compete in the market due to high interest rate has not been impressive. From 3% in 1993, it dropped to 1.3% in 1994 and then rose to 2.2%, 3.4%, 3.8% and 2.4% in 1995, 1996, 1997 and 1998 respectively. Also, data on unemployment rate, price level and the worsening state of urban and rural infrastructure during the period further pointed to a dismal picture of the devastating state of the poverty incidence in Nigeria (Godswill and Awogbemi, 2011).

Furthermore, the level of openness of an economy to international market gives foreign investor the advantage of taking economic opportunities that are open to them, and a favourable exchange rate propels foreign investors to invest in a country. This is because the value for their foreign currency can accumulate a very large proportion of the domestic currency. This result supports Anyanwu (1998), Ayanwale (2007) and partially, Asiedu (2006) and Dind (2009).

6. Conclusion/Policy Remarks

The study examines macroeconomics determinant of foreign direct investment in Nigeria.

The review shows that while vast growing volumes of research were being carried out in the developed counties on the effect of a previous FDI on the present FDI, little attention has been paid to this in Nigeria. To fill this gap, the work conducts a study, using secondary data for the period of 1985-2010, and employing GMM as method of analysis. Although the result confirms that previous FDI determines present FDI only at 10 per cent level of significance which is not a good critical point in taking decision in management sciences, interest rate, money supply, trade openness and exchange rate are found to be determinants to FDI in Nigeria.

Based on the findings, the following recommendations are made in order to achieve high and sustained FDI in Nigeria. A moderate exchange rate and money supply must be maintained, and interest rate could be adjusted in a way to motivate foreign investors. However, relevant measures to enhance policy coordination among various arms of government should be put in place so as to
encourage indigenous investors rather than foreign investors, since most of the foreign investors are only interested in their profit margin and not the development of the country. This is because the findings show that previous FDI does not determine future FDI, which means most of the so-called FDI are not purely FDI but rather a form of portfolio investment that is not encouraging for a developing country like Nigeria.

This notwithstanding, government policies towards stimulating productive base of the economy depend largely on their ability to control an adequate amount of FDI comprising managerial, capital and technological resources to boost the existing production capacity if and only if government is interested in economic development through FDI in Nigeria.

References


