THE MANIPULATION OF MACROECONOMIC ISSUES ON FOREIGN DIRECT INVESTMENT INFLOW IN NIGERIA: A COINTEGRATION ANALYSIS

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Abstract
One of the most salient features of today’s globalization drive through openness of the economy is to sway cross border investments, especially by transnational corporation and firms. Various countries and continent most especially developing countries like Nigeria now see attracting FDI as an important element in their strategy for economic growth and development. This study investigates the some macroeconomic determinants of inflow of foreign direct investment (FDI) in Nigeria for the period which spanned between 1986 and 2012. Time series data were collected from Central Bank of Nigeria (CBN) and other publications, the variables were tested for stationarity and co-integration analysis was also carried out using the residual co-integration techniques. The result reveals that there is long run relationship between FDI inflows and the macroeconomics determinates. Also error correction test was performed. The study found that credit to the private sector proxy for financial development, GDP proxy for market sized and exchange rate are the main macroeconomic determinant factors which determine the inflow of FDI in Nigeria. Therefore, the study recommends that The government and monetary authority should put sound macroeconomic machinery in place to properly monitor the movement of exchange rate and also manipulate macroeconomic policies that will help to revive and rebuild the real sectors of the Nigerian economy so that their output will be competitive in the global market and induces inflow of FDI to the country economy.

Keywords: Macroeconomics, Foreign Direct Investment, Economic Growth, Federal Government, Co-Integration

Introduction
Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-
term capital, and short-term capital as shown in the balance of payments. One of the most salient features of today’s globalization drive through openness of the economy is to persuade cross border investments, especially by transnational corporation and firms. Many countries and continent most especially developing countries like Nigeria now see attracting FDI as an important element in their strategy for economic growth and development. This is most probably because FDI facilitate technology transfer across borders, contribute to expanding and modernizing the production base, improve managerial capacity and improve efficiency, productivity and value added in the relevant sectors of the economy.

Chete (1998) postulated that the less than satisfactory economic growth registered by countries of Sub-Saharan Africa is low level of investment and attracting foreign investment is therefore crucial from a number of standpoints. First, consistent and regulated inflow of FDI provides an important source of foreign exchange earnings needed to supplement domestic savings and raise investment levels. Second, import substituting investment would serve to reduce the import bill as investments in export industries will directly increase the country’s foreign exchange earnings. Also according to Chete (1998), a couple of other benefit might also accrue from increased FDI. These include the creation (or expansion) of local industries to supply inputs to the newly established plant; a rise in the overall level of domestic demand boosting incomes and, through taxation, state revenues, and the transference of labour (including management) skills and technology.

Imoughele and Ismaili (2012) noted that most countries strive to attract Foreign Direct investment (FDI) because of its acknowledged advantage as a tool of economic development. Africa – Nigeria in particular - joined the rest of the world in seeking FDI as evidenced by the kind of government policies intervention into the development of the economy. Despite the policy to induced increased inflow of FDI to Nigeria, the country is still characterized by low per capital income, high unemployment rates and low and falling growth rate of GDP, problems which FDI are theoretically supposed to solve. Probably persuaded by these overwhelmingly attractive theoretical benefits in support of FDI, authorities in Nigeria have, at various times, articulated overabundance of encouragement aimed at attracting FDI into the country. According to Ayanwale (2007), the policies embarked on by the Nigeria government to attract foreign investors as a result of the introduction of the Structural Adjustment Programme (SAP) could be categorized into five: the establishment of the Industrial Development Coordinating Committee (IDCC), investment incentive strategy, non-oil export stimulation and expansion, the privatization and commercialization programme, and the shift in macro-economic management in favour of industrialization, deregulation and market - based arrangements while Chete (1998) stated further that to encourage FDI in Nigeria the federal government stipulate an extensive fiscal policy incentive including a 100% tax holiday for seven years plus an additional five % depreciation beyond the initial capital depreciation allowance for investment in disadvantage area. There was also tax redetection for construction of in fracture, research and development activities in the country and in-plant training programme.

In spite of these enormous benefit, host countries stand to gain from FDI the flow of foreign capital in form of foreign private capital to Nigeria especially over the years have been marginalized. According to UNCTAD (2001) Nigeria share in FDI flow has steadily declined in recent times. Factors contributing to this lag in FDI flows to Nigeria relative to other countries of the world according to UNCTAD include; high level of corruption, poor governance, inadequate
infrastructure among others. Available information revealed that the average performance of FDI in Nigeria between 1970-1980 was 1.33% and it increases to 2.038% and 4.12% between 1981 to 1990 and 1991 to 2000 respectively and decrease to average of 3.4% between 2001 to 2011, therefore this study intend to investigate the impact of macroeconomic issues on foreign direct investment in Nigeria for the period which spanned between 1980 to 2012. This study is important because Nigeria had experienced declining and fluctuating foreign investment inflows despite the large market size of the country and mineral deposits. Beside, Nigeria alone cannot provide all the funds needed to invest in various sectors of the economy as a result of vicious cycle of poverty bedevil the country and to make it one of the twenty largest economies in the world by 2020 therefore this study is to identify the determinants of FDI inflows to Nigeria. The departure of this study from other studies on the determinants of FDI in Nigeria is the inclusion of financial deepening as proxy for financial development as an important determinant of FDI. The rest of this study is divided into the following: section 2 is literature reviews, sections 3 is the research methods of the study, section 4 deals with the theoretical framework of the determinants of FDI, section 5 is data analysis and presentation of results and section 6 is conclusion and policy implications.

Literature Review

FDI is defined as investment made so as to acquire a lasting management interest (for instance, 10% of voting stocks) and at least 10% of equity shares in an enterprise operating in another country other than that of investors’ country (World Bank, 2007). Many policy makers and academics contend that Foreign Direct Investment can have important positive effects on host country’s development effort. In addition to the direct capital financing it supplies, FDI can be a source of valuable technology and know-how while fostering linkages with local firm, which can help jumpstart an economy. Based on these arguments, industrialized and developing countries have offered incentives to encourage Foreign Direct Investment in their economies.

There are two main categories of foreign direct investment are “market-seeking” and “non-market seeking”; these are motivated by the characteristics of the host country. The marketing seeking investment aims at serving domestic markets. In order words, goods produced in host markets are sold in those markets. Hence, the FDI can influence growth and development through the nature of domestic demand such as large markets and high income levels of the host country. For non-market-seeking FDI, the aim is to sell the goods produced in the host economy on markets abroad Therefore, this type of investment will be more beneficial to the host country through the trade nexus-in other words, how easy it is to export the products and how competitive the products are in the global market. Essentially, FDI will boost economic growth and development through increase in productivity of capital (Ayanwale, 2007).

Lyakurwa (2003) has stressed macroeconomic policy failures as deflecting FDI flows from Africa. According to Lyakurwa, irresponsible fiscal and monetary policies have generated unsustainable budget deficits and inflationary pressures, raising local production costs, generating exchange rate instability and making the region too risky a location for FDI. In addition, excessive levels of corruption, regulation and political risk are also believed to have further raised costs, adding to an unattractive business climate for FDI. Zekiwos (2012) examined the determinants of FDI in Fourteen Sub-Saharan Africa countries for the period 1986-2010. The study employed panel data analysis: pooled ordinary least square method, fixed effects and Random Effect
methods. The study finding shows that trade openness, gross domestic product, inflation, and lag of FDI are the most significant determinants of foreign direct investment inflows to sub-Saharan Africa. Also Anyanwu (2011) investigated the determinants of FDI inflow to Africa. Panel data analysis method were employed to analyze the data that covers over 1980-2007. The study result shows that large market size, trade openness, high remittance, natural resource endowment, high government consumption expenditure have positive impact on FDI in flow to Africa. Compared to other part of Africa, East and Southern African sub-regions attracted more FDI and concluded that higher financial development had negative impact on FDI inflow.

Anyanwu (1998) places a particular emphasis on the determinants of FDI inflows into Nigeria. He recognized change in domestic investment, change in domestic output, indigenization policy and change in openness of the economy as major determinants of FDI inflows into Nigeria and concluded that effort should be made to raise the nation’s economic growth so as to be able to attract more FDI. Ayanwale (2007) investigated the empirical relationship between FDI and economic growth in Nigeria and also examines the determinants of FDI inflows into the Nigerian economy. He adopted both single-equation and simultaneous equation to examine the relationship and concluded 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 and reported that a positive link exist between FDI and growth in Nigeria and FDI the telecommunication has induced the growth performance of the Nigerian economy.

Danja (2012) postulated that the economic rationale for granting special incentives for attracting foreign direct investment is based on the belief that FDI bridges the ‘idea gaps’ between rich and the poor nations in addition to the generation of technological transfers and spillovers. Employing econometric and statistical method to evaluate the relationship between FDI and major economic indicators, he reported that FDI has not contribute much to the growth and development of the Nigerian economy due to repatriation of profits, contract fees, and interest payment on foreign loans. He therefore recommends human capacity building, infrastructural facilities and strategic policies to attract FDI inflow. Nwankwo (2006) asserts that the success stories of India and China’s economic development highlights the benefits that a country can get by utilizing a strategy that attracts and gains value from FDI. While FDI inflows have been increasing in some developing countries, Africa has not been successful except in natural-resource exploitation and that Nigeria investment rate is poor barely 10% of GDP, Nigeria is below the minimum investment rate of about 30% of GDP required to reduce poverty. Studying the main determinants of FDI inflows in Nigeria from 1986 to 2003 and employed econometric approach the result shows that FDI in Nigeria is mainly affected by political instability, macro-economic instability and the availability of natural resources.

Wafure and Nurudeen (2010) postulated that FDI provides capital for investment; it enhances job creation and managerial skills, and possibly technology transfer. They employed error correction technique to investigate the determinants of foreign direct investment in Nigeria. The results reveal that the market size of the host country, deregulation, political instability, and exchange rate depreciation are the main determinants of foreign direct investment in Nigeria and recommended the following policies among others: expansion of the country’s GDP via production incentives; further deregulation of the economy through privatization and reduction of government interference in economic activities; strengthening of the political institutions to sustain
the ongoing democratic process; gradual depreciation of the exchange rate; and increased investment in the development of the nation’s infrastructure.

Ayadi (2011) utilized vector autoregressive (VAR) models, correlation, decomposed the variance and impulse-response function to analysed determinants of FDI in Nigeria for the period spanning from 1980 to 2007 and reported that the local demand condition, Infrastructure availability, natural resources endowment and the degree of openness of the economy to the external sector and economic stability are the major drivers of foreign direct investments in Nigeria and for the country and other developing countries to move towards achieving sustainable development via FDI inflow, he recommend the stimulation of local demand condition via fiscal incentives, continuous investments in infrastructural development, provision of economic stability, sound macroeconomic management and encouragement of a stable political structure.

Babatunde (2012) noted that the government of oil-rich Nigeria strived to attract FDI through tax incentive, because of its acknowledged advantages as a tool for economic development. However, the trade-off between the sacrificed tax revenue and the expected gains from FDI are inconsistent as there is contentious evidence in the literature that tax incentive is actually the attraction for FDI. Investigating the determinant factors of FDI and analyse whether or not some selected factors such as tax incentives, availability of natural resources, macro-economic stability, market size, openness to trade, infrastructural development and political risk have an impact on FDI in the oil and gas sector using data from a sample size of twenty-one years (21) from the Central Bank of Nigeria annual statistical bulletin and the United Nations Conference On Trade and Development (UNCTAD) reports were analysed with Karl Pearson coefficient of correlation ‘r’ statistical method of analysis. The results of the analyses show that there is significant impact of tax incentives, availability of natural resources and openness to trade on FDI in the oil and gas sector in Nigeria. Also, there is no significant impact of market size, macro-economic stability, infrastructural development and political risk on FDI in the oil and gas sector in Nigeria and the study recommended that in particular attention should be given to institute new regulations to encourage the type of FDI needed to support the economic objectives of vision 20-20-20, such as provision of needed infrastructure especially electricity. Oladipo (2013) examines the macroeconomic determinants of foreign direct investment in Nigeria employing Secondary data and 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.

Udoh and Egwaikhide (2008) examined the effect of exchange rate volatility and inflation uncertainty on foreign direct investment in Nigeria for the period between 1970 and 2005. Exchange rate volatility and inflation uncertainty were estimated using the GARCH model. Estimation results indicated that exchange rate volatility and inflation uncertainty exerted significant negative effect on foreign direct investment during the period. In addition, the results show that infrastructural development, appropriate size of the government sector and international competitiveness are crucial determinants of FDI inflow to the country. Oghoghomeh (2004)
investigated the relationship between foreign direct investment (FDI) and its various determinants in a democratic society. The data were analysed using the multiple regression analysis and findings shows that market size, natural assets, infrastructure, domestic credit, exchange rate, legal system and population health of the country have a positive relationship with FDI; while corruption, human capital development, political risk and trade openness have a negative relationship with FDI and recommended that the Nigerian government should provide the necessary incentives for investment and production activities to strive as well as creating an enabling environment for substantial growth in GDP.

Theoretical framework

A number of theories have been developed to explain the determinants of FDI. According to Nwankwo (2006) reviews of the main FDI theories and determinants of FDI range from the economic theories of Vernon (1966), the internationalisation theories of Rugman (1981) and Dunning’s (1993) eclectic paradigm. However, the main theory adopted in this study are drawn from Dunning (1977; 1993) who suggested that the main factors that drive FDI inflows into country have been the need to secure market access, the opportunities presented by large scale privatization processes and the degree of political and economic stability.

The eclectic paradigm of Dunning proposes that the undertaking of FDI is determined by the realization of three groups of advantages and they are:

1. Ownership – specific advantages – these arise from the firm’s size and access to markets and resources, the firm’s ability to coordinate complementary activities like manufacturing and distribution and the ability to exploit differences between countries.
2. Location advantages – this includes differences in country natural endowments, transport costs, macroeconomic stability, cultural factors and government regulations. These help to determine which countries are host to MNEs foreign production.
3. Internationalizations incentives – this arises from exploiting imperfections in external markets. These include the reduction of uncertainty and transaction costs in order to generate knowledge more efficiently and the reduction of state – generated imperfections such as tariffs, foreign exchange controls and subsidies.

Therefore Considering the objective of the research, an emphasis has been placed on the location determinants of FDI. According to Erdal and Tatoglu (2002) and Nwankwo (2006) the locational determinants of FDI can therefore be summarized as market size and market growth, raw materials and labour supply, political and legal environment, host government policies, geographical proximity and host country infrastructure. However, this study will also consider financial development as important factors determining FDI inflow to the Nigeria economy.

Methodology

Research Design

Since the main focus is to have a better understanding of the determinants of private savings in Nigeria, the method of analysis is inferential in nature. A quantitative testing of the hypotheses highlighted above shall be used. In this case, an econometric model will be formulated and
adequate econometric techniques adopted. These techniques include; unit root test, co-integration test and error correction mechanism.

**Hypotheses**

Fadiya (2010) asserted that hypothesis testing has become the building block of any scientific research. To this end, it would be appropriate to test the following hypotheses in respect of determinants of FDI inflow in Nigeria from 1980 through 2012.

**H0:** GDP growth, exchange rate, inflation rate, trade openness, financial development and gross fixed capital formation are insignificant determinants of FDI inflow in Nigeria.

**H1:** GDP growth, exchange rate, inflation rate, trade openness, financial development and gross fixed capital formation are significant determinants of FDI inflow in Nigeria.

**Sources of Data**

Data used in this study were obtained from various issues of Central Bank of Nigeria (CBN) Statistical Bulletin. They span the period between 1980 to 2012. This gives a considerable degree of freedom to capture the determinants of FDI inflow to Nigeria. The data are in annual frequency.

**Model Specification**

In order to find out the major determinants of FDI inflows to Nigeria, we estimate the impact of gross domestic product growth, exchange rate, inflation, trade openness, financial development, gross fixed capital formation (GFCF) and political stability on foreign direct investment the study used Error Correction Model which is specified as:

\[
L\Delta FDI/ GDP_{t-1} = \beta_0 + \beta_1 \Delta LM2/GDP_{t-1} + \beta_2 \Delta LOPE_{t-1} + \beta_3 \Delta EXR_{t-1} + \beta_4 \Delta INF_{t-1} + \beta_5 \Delta LGDP_{t-1} + \beta_6 \Delta POL_{t-1} + \beta_7 \Delta LGFCF_{t-1} + \beta_8 \Delta FDI/ GDP_{t-1} + \beta_9 ECM_{t-1} + \varepsilon_t \quad (1)
\]

Where:

- FDI is foreign direct investment (FDI) measured as FDI as a percentage of GDP,
- GDP is GDP growth,
- EXR is exchange rate,
- INF is the inflation rate,
- OPEN is trade openness is measured as sum of export and import as a percentage of GDP,
- Financial development measure ration of broad money to GDP,
- Gross fixed capital formation (GFCF) and Political stability proxy by dummy variable (POL) and t is time,
- p is the optimal lagged length and \( \varepsilon_t \) is the error term assumed to be normally and independently distributed with zero mean and constant variance, which captures all other explanatory variables which influence FDI but are not captured in this model.

**Data Analysis and presentation of results**

**Unit Root Test**

Theoretically, if time series variables are non-stationary, all regression results with these time series will differ from the conventional theory of regression with stationary series. That is, regression coefficients with non-stationary variables will be spurious and deceptive. To get over this problem, we test for stationarity of the time series. In order to test for stationarity of the data used in this study, the Augmented – Dickey Fuller (ADF) test will be used. The first step is to test for stationarity at level, without constant and trend. If the variables are non–stationary, then the next step is to difference and test for the stationarity of differenced variables. If the variables become stationary after first difference then it is concluded that the variables are integrated of order one i.e. I (1). The results of the unit root test are presented below.
Table 1: Augmented – Dickey Fuller (ADF) Test at Level

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-Stat</th>
<th>P-Val</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS</td>
<td>-0.072641</td>
<td>0.942636</td>
</tr>
<tr>
<td>EXR</td>
<td>-2.441550</td>
<td>0.140846</td>
</tr>
<tr>
<td>FDI</td>
<td>-0.040409</td>
<td>0.946156</td>
</tr>
<tr>
<td>GDP</td>
<td>-2.516382</td>
<td>0.123275</td>
</tr>
<tr>
<td>GFCF</td>
<td>-2.114394</td>
<td>0.241043</td>
</tr>
<tr>
<td>INF</td>
<td>-3.952736</td>
<td>0.005674</td>
</tr>
<tr>
<td>OPEN</td>
<td>-3.836292</td>
<td>0.007470</td>
</tr>
</tbody>
</table>

Table 2: Augmented – Dickey Fuller (ADF) Test at first difference

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-Stat</th>
<th>P-Val</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPS</td>
<td>-4.003733</td>
<td>0.005444</td>
</tr>
<tr>
<td>EXR</td>
<td>-5.126573</td>
<td>0.000353</td>
</tr>
<tr>
<td>FDI</td>
<td>-5.521834</td>
<td>0.000100</td>
</tr>
<tr>
<td>GDP</td>
<td>-4.395708</td>
<td>0.002068</td>
</tr>
<tr>
<td>GFCF</td>
<td>-5.948688</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Sources: Authors computation

From the table 1 and 2 above, Time series of financial development, gross domestic product inflation rate, foreign direct investment and gross fixed capital formation are stationary at first difference as evidence by the pro value in table 2, that the variables are integrated of order one i.e. I (1). While inflation rate and openness of the economy are stationary at level as evidence by the pro value in table 1 and conclude that the variables are integrated at level i.e. I(0).

**Co-integration Test Result**

Since the unit root test shows that the variables are stationary at level 1(0) and first order difference 1(1), we therefore test for co-integration among these variables by employing the Engle and Granger two steps method. The ECM will enable the derivation of both short run and long run properties of the model which other estimation techniques lacked except lags are enforced into them. Iganiga and Unemhihn (2011) asserted that co-integration established that stationarity of the residual generated from running a statistic regression at level of the regressors (independent variables) on the regressed (dependent variable). Hence the need to subject the residuals generated from their long run statistic regression to Augmented Dickey-Fuller test to see if they are stationary. The stationary of the residual is powerful evidence that there is evidence of convergence to long run equilibrium among the integrated variables.
The regression of the variables is done at levels and the residual series thereafter obtained for ADF tests. The result of the ADF co-integration test is presented as following:

**Table 3: Co-integration Residual Stationary Test Result.**

Null Hypothesis: ECM has a unit root  
Exogenous: Constant  
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

<table>
<thead>
<tr>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augmented Dickey-Fuller test statistic</td>
<td>-3.113185</td>
</tr>
</tbody>
</table>

Test critical values:  
1% level | -3.711457  
5% level | -2.981038  
10% level | -2.629906


Augmented Dickey-Fuller Test Equation  
Dependent Variable: D(ECM)  
Method: Least Squares  
Date: 05/31/15   Time: 12:41  
Sample (adjusted): 1987 2012  
Included observations: 26 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECM(-1)</td>
<td>-0.584764</td>
<td>0.187835</td>
<td>-3.113185</td>
<td>0.0047</td>
</tr>
<tr>
<td>C</td>
<td>0.002170</td>
<td>0.038383</td>
<td>0.056536</td>
<td>0.9554</td>
</tr>
</tbody>
</table>

R-squared 0.287663  Mean dependent var 0.005355  
Adjusted R-squared 0.257982  S.D. dependent var 0.227124  
S.E. of regression 0.195646  Akaike info criterion -0.351221  
Sum squared resid 0.918653  Schwarz criterion -0.254444  
Log likelihood 6.565868  Hannan-Quinn criterion -0.323352  
F-statistic 9.691918  Durbin-Watson stat 1.894305  
Prob(F-statistic) 0.004735

Sources: Author Computation

The co-integration residual stationary test result for determinant of FDI equation presented in table 3 above suggests that, the ADF coefficient is significant at 0.05 significance level. The absolute value of ADF test statistic of -3.113185 is greater than the critical value of -2.981038 at 0.05 level of significance. This implies that there is presence of co-integration among the variables i.e there is long run relationship among the explanatory variables and FDI.
Presentation of Regression Result
The result of error correction model is presented below.

**Table 4: Error Correction mechanism for the determinants of FDI in Nigeria’s economy**

Dependent Variable: D(FDI)
Method: Least Squares
Date: 05/31/15   Time: 12:22
Sample (adjusted): 1988 2012
Included observations: 25 after adjustments

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.033028</td>
<td>0.105272</td>
<td>0.313739</td>
<td>0.7578</td>
</tr>
<tr>
<td>D(FDI(-1))</td>
<td>0.198733</td>
<td>0.237274</td>
<td>0.837567</td>
<td>0.4146</td>
</tr>
<tr>
<td>D(CPS(-1))</td>
<td>1.108659</td>
<td>0.438771</td>
<td>2.526738</td>
<td>0.0201</td>
</tr>
<tr>
<td>D(EXR(-1))</td>
<td>0.719425</td>
<td>0.271817</td>
<td>2.646724</td>
<td>0.0141</td>
</tr>
<tr>
<td>D(GDP(-1))</td>
<td>0.830021</td>
<td>0.284392</td>
<td>2.918575</td>
<td>0.0077</td>
</tr>
<tr>
<td>D(GFCF(-1))</td>
<td>-0.652700</td>
<td>0.564792</td>
<td>-1.155647</td>
<td>0.2648</td>
</tr>
<tr>
<td>INF(-1)</td>
<td>0.043374</td>
<td>0.071467</td>
<td>0.606907</td>
<td>0.5524</td>
</tr>
<tr>
<td>OPEN(-1)</td>
<td>-0.133089</td>
<td>0.348050</td>
<td>-0.382384</td>
<td>0.7072</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.779410</td>
<td>0.265199</td>
<td>-2.938956</td>
<td>0.0096</td>
</tr>
</tbody>
</table>

R-squared | 0.890806 | Mean dependent var | 0.110921 |
Adjusted R-squared | 0.846209 | S.D. dependent var | 0.228745 |
S.E. of regression | 0.199912 | Akaike info criterion | -0.108167 |
Sum squared resid | 0.639436 | Schwarz criterion | 0.330628 |
Log likelihood | 10.35209 | Hannan-Quinn criter. | 0.013536 |
F-statistic | 55.34120 | Durbin-Watson stat | 2.057440 |
Prob(F-statistic) | 0.000000 |

Source: Computed by the Authors

The result from table 4 above shows that the variables accounts for 89 percentage changes in inflow of FDI in Nigeria. The Durbin Watson Statistic (2.0574) shows the absence of auto correlation which make the estimate unbiased, consistency and reliable for policy formulations. The F statistic (55.3412) reveals that the explanatory variables are jointly significant in explaining changes in inflow of FDI to the Nigerian economy. The results also show lagged value of foreign direct investment has insignificantly direct impact on the inflow of FDI in Nigeria. A one percentage increase in FDI the previous one year leads to 0.1987 percentage increase in FDI inflow to the Nigeria economy. This implies that there is inadequate inflow of FDI to the country.

Inflation rate (INF) is statistically insignificant in explaining inflow of FDI into Nigeria; one percentage increase in Inflationary rate in the previous one year leads to 0.043374 percent increase in FDI inflow. This does not conforming to the apriori expectation because once there is inflation; money will lose its purchasing value and the quality of it as a store of value will be reduced but the positive nature of this variable indicate there is macroeconomic stability in the country which induced inflow of FDI to the Nigeria economy. Furthermore, the result reveals that financial deepening is statistically significant in explaining inflow of FDI to Nigeria. A one percentage increase in financial development
will leads to 1.1087 percentage increase in FDI inflow. This finding is in line with the apriori expectation. This implies that financial development and its reformed have encouraged inflow of FDI to the Nigerian economy.

The result shows that gross fixed capital formation (GFCF) proxy for public investment has indirect and insignificant influence on FDI inflow to the Nigeria economy such that a one percentage increase in GFCF will leads to 0.6527 percentage increase in FDI inflow. This is not in line with the apriori sign but the insignificant of this variable is as a result of poor public investment on the economy. The exchange rate (EXR) variable has direct and significant impact on inflow of FDI, this is right with the apriori expectation. A one percentage increase in FDI will leads to 0.7194 percentage increase in the inflow of FDI in Nigeria. This implies that exchange rate reform in Nigeria by depreciation encourage inflow of FDI to the country. The results also reveal that openness of the economy (OPEN) has negative and insignificant effect on inflow of FDI in Nigeria. A one percentage increase in OPEN will leads to 0.1331 decrease inflow of FDI to the Nigerian economy. This is not consistent with the apriori expectation.

The result shows that the coefficient of error correction mechanism (ECM) is negative -0.7794 and significant at 0.05 per cent critical level. This shows that about 78 per cent disequilibria in Nigeria’s inflow of FDI in the previous year are corrected for in the current year. The significance of the ECM is a sign and confirmation of the subsistence of a long run equilibrium relationship between FDI inflow and all the explanatory variables.

Test of Hypotheses

This sub-section presents the result of hypothesis testing. Null hypothesis to be tested is that explanatory variables used in the model are not determinants of FDI Nigeria. If the calculated t ratio of an explanatory variable is greater than table value from zero, such variable is said be a significant determinants of FDI inflow. The table t-statistic with 18 as degree of freedom at 5 percent critical level is 2.101. Comparing the table t-statistic value with calculated t-statistic value of each independent variable, it can be seen that only four explanatory variables are significant at 5 percent critical level. These variables are credit to the prate sector proxy for financial development, exchange rate, gross domestic product and error correction parameter. Therefore, from the findings above, we conclude that financial development, exchange rate and gross domestic product are significant determinants of FDI inflow to the Nigeria’s economy.

Conclusion and policy implications

Most countries strive to attract Foreign Direct investment (FDI) because of its acknowledged advantage as a tool of economic development. Nigeria joined the rest of the world in seeking FDI as it help to arguments domestic resources of any economy to enhanced economic growth and development as evidenced by the kind of government macroeconomic policies intervention into the development of the economy. This study investigates the determinants of inflow of FDI in Nigeria for the period which spanned between 1986 and 2012. Time series data were collected from Central Bank of Nigeria and other publications, the variables were tested for stationarity and co-integration analysis was also carried out using the residual co-integration techniques. Also error correction test was performed. The study found that credit to the private sector proxy for economic development, GDP proxy for market sized and exchange rate are the main macroeconomic factors which determine the inflow of FDI in Nigeria. The study also reveals
that public investment and openness of the economy have inverse and insignificant effect on FDI inflow which is not consistent with apriori expectation while inflation has direct and insignificant effect on the inflow of FDI in Nigeria. This implies that macroeconomic policy put in place in Nigeria over time has induced inflow of FDI in Nigeria.

Therefore, the study recommends that Government should ensure that adequate macroeconomic policies that will open up the economy are put in place to encourage foreign direct investment inflow in Nigeria. There is need for proper financial market development and the financial sector should be liberalised to mobilised savings and foreign resources for the Nigerian economy. The government and monetary authority should put sound macroeconomic machinery in place to properly monitor the movement of exchange rate and regulate it indirectly through currency devaluation. This will make cost of production in the country cheaper and induced the growth inflow of FDI in Nigeria. Finally, The Nigerian governments need to put in place adequate macroeconomic policies that will help to revive and rebuild the real sectors of the Nigerian economy so that their output will be competitive in the global market and which will induces inflow of FDI to the country economy.

References
