
Macroeconomic Policy Variables and Foreign Direct Investment in Nigeria

Ndugbu, Michael O. (Ph.D), Duruechi, Anthony H. & Ojiegbe, Josephine N. (Ph.D)

Department of Banking & Finance
Faculty of Business Administration
Imo State University, Owerri,
Imo State, Nigeria

Abstract

This study examined macroeconomic policy variables in relation to foreign direct investments (FDIs) in Nigeria. Macroeconomic theory of foreign direct investments posits that FDIs largely depend on changes in the macroeconomic environment. The environment consists of GDP, real exchange rate, openness of the economy etc., which are some of the factors that affect the FDIs flows in a country. In Nigeria, Various macroeconomic policies and reforms have been embarked upon by government aimed at attracting FDI into the country, but these efforts have appeared to be futile going by the low and unsteady behaviour of the level of foreign direct investments. This has become a source of worry to all concerned. Therefore, this work was set out to investigate the impact of macroeconomic policy variables on FDI in Nigeria. Data for the study were collected from the Central Bank of Nigeria statistical bulletin (1986 – 2016). Vector Auto Regression (VAR) analysis using e-view 9.0 version was used to analyze the data. Variables examined were exchange rate, inflation rate, interest rate, real gross domestic product and trade openness. Findings revealed that though all the variables put together impact on FDI, specifically, interest rates, inflation rates and RGDP (economic growth) have significant positive impact on FDI in Nigeria. Therefore, Government should evolve sound policies that would strengthen the attraction of FDIs in Nigeria by paying more attention to the identified macroeconomic policy variables. The variables have shown to be a vital tool that could be used to encourage the inflow of FDI into the country.

Keywords: *Macroeconomic, Policy variables, Foreign Direct Investments, Forward linkages, Backward linkages.*

Introduction

1.0 Background of the Study

Foreign Direct Investment has been observed to be an aspect of globalization through which growth of economies could be actualized. Ajayi (2006) observed that foreign direct investments contribute to growth in a substantial manner because such investments are more stable than other forms of capital flows. FDI is not just a transfer of ownership as it usually involves the transfer of factors complementary to capital, including management, technology and organizational skills.

Foreign Direct Investments allow for international capital flows which were prompted by the need for foreign capital to support domestic resources in growth and development process of less developed and developing countries of the world in addition to bridge the gap between savings and investments or capital requirements of these economics. There is no doubt that the economically developing as well as underdeveloped countries are dependent on the economically developed countries for financial assistance that would help them to achieve some amount of economic stability. The economically developed countries on their part can

help these countries financially by investing in these countries. This financial assistance can be channelled into various sectors of the economy. It is pertinent to note that indigenous private sector companies rarely undertake activities that help in improving the infrastructure of the country. This stems from the fact that the gains from these infrastructural activities are made only in the long term; there are no short term benefits as such. This is where foreign direct investment plays a major critical role.

Foreign Direct Investments (FDIs) confer several economic benefits such as capital inflows adding to the reserves, thus improving the balance of payments, increasing the exports and causing export-led growth, fostering innovation and modern technologies, new style of management skills, increasing the jobs and employment opportunities in the host country (Salman & Feng 2010, Javed et al 2012, Shahzad et al 2012). Arfan and Abdullahi (2013) noted that foreign direct investments since 1990 have emerged as a boom to developing countries in promoting industrialization, growth, and development. It is interesting enough to compare the growth trends of trade and investment in perceiving the dynamics of international business in the world economy in the years corresponding to a millennium era. A rising trend in FDI helps in augmenting productive resources, filling technological gap and overcoming capital shortage to facilitate the growth process of development.

Nigeria recorded an average GDP growth rate of 2.60%, in 2014. Current account to GDP in Nigeria averaged 1.61% from 1980 to 2014 (CBN, 2015). This rate of growth is insufficient to reduce the level of poverty to accepted level coupled with the low savings and investment rate in Nigeria. However, Foreign Direct Investment is needed to bridge the gap between savings and investment and as well resuscitate the dwindling GDP growth rate. To this end various government have embarked on one reform policy or the other in order to attract Foreign Direct Investment (FDIs). These policies are manifested/implemented in form or through the manipulation of macroeconomic variables or policy variables like exchange rates, interest rates, inflation rates, export policy, imports, etc.

Changes in macroeconomic policy variables typically affect or determine the structure, composition and/or level of Foreign Direct Investment in a host country. The relationship between macroeconomic policy variables and foreign direct investment has become an important factor in a developing economy like Nigeria which cannot be overemphasized.

Recent events have shown that Foreign Direct Investment is highly needed to bridge the gap between savings and investments and as well encourage economic growth in Nigeria. It was observed that the flows of FDI globally increased continuously during the 1980s and 1990s with the highest and sharpest growth in the late 90s. The flows increased reaching a peak of \$1,411.4 billion in 2000 from \$58 billion in 1985. However, it took a downward trend between 2001 and 2003 reaching a low level of \$564.1 billion in 2003. According to Akimulegun (2012), this was the experience of both developed as well as developing economies of the world.

UNCTAD (2009) showed that Nigeria is one of the few countries that have consistently benefited from FDI inflow to Africa and ranked as second recipient after Angola in 2001 and 2002. Nigeria share of FDI inflow to Africa averaged around 10% from 24.19% in 1990 to a low level of 5.88% in 2001 up to 11.65% in 2002.

Given her natural resource base and market size, is one of the economies in Africa with high demand for goods and services and has attracted foreign direct investment over the years. Kabir (2012) observed that the amount of FDI inflows into Nigeria rose steadily from \$2.23 billion in 2003 to \$5.31 billion in 2004 (representing 138% increase) \$9.92 billion in 2005 (87% increase) but declined slightly to \$9.44 billion in 2006. Also, reports had it that foreign direct investments in Nigeria averaged \$1348.23 million from 2007 until 2016,

reaching an all time high of \$3084.90 million in the fourth quarter of 2012 and a record low of \$501.83 million in the fourth quarter of 2015. This increased by \$673.95 million in the second quarter of 2016.

The latest value for FDI, net outflows (BOP, current us) in Nigeria was \$1,601,233,000 as of 2014. Over the past 35 years, the value for this indicator has fluctuated between \$1,601,233,000 in 2014 and #27,000,000 in 1982 (IMF, UN online information).

FDI forms a relative small percentage of the nation's Gross Domestic Product (GDP), however, making up of 7.56% in 1992, increased to 41.74% in 1996, decreased to 37.38% in 2003 and subsequently moved from 2004 to 2007 when it peaked at 87.11%. On the whole, it formed about 46.10% of the GDP over the period under consideration.

Nigeria's share of FDI flows have remained a subject of concern having been regarded as "giant" of Africa. Its share of FDI has been unstable over the years. Researches have shown that the unstable state can be attributed to policy reversals signaling uncertainty to potential investors, economic crisis and low capacity utilization among others, (Ekpo, 1996). Thus, implying that the fluctuations of unstable nature of FDI on Nigeria are more of macro-economic policy factor.

Various policies and reforms have been embarked upon by government aimed at attracting FDI into the country, but these efforts have appeared to be futile going by the unsteady behaviour of the level of foreign direct investment in Nigeria. Shiro (2009) noted that since the enthronement of democracy in 1999, government of Nigeria has taken a number of measures necessary to woo foreign investors into Nigeria. In spite of programmes and policies made to encourage inflow of FDIs at different time, the ugly trend persists and has called for concern.

According to Arfan & Abdullahi (2013), over the years, FDI inflows have tended to be comparatively much less in developing countries and largely been confined to developed countries. FDI have failed to reinvest most of their profit in the country thereby aiding capital flight out of the country. Even when the investors established their companies say manufacturing for instance in Nigeria, they still engage in substantial importation of intermediate products; a practice that aids to deplete the foreign reserve and put undue pressure on the exchange rate of the country. The question that comes to mind is "to what extent do macroeconomic policies of host countries favour the attraction of FDIs in such countries?"

According to Ahmed (1998), FDI rather than transfer technology often transfer the product of technology. Investors bring in capital but also take away capital. The important issue here is net capital flow. Akhter (1993) in his study with a time frame between 1971 – 1988 observed that Nigeria was clearly financing the developed countries. Investors invest in selected sectors of the economy mostly oil sector which has few backward linkages. Those in forward FDI were external thus not yielding the desired results in the Nigeria economy. The inability to attract, retain and sustain FDI flows in Nigeria has become a major problem. These call for proper identification and examination of macroeconomic factors driving FDI and understanding of their impact on Foreign Direct Investment.

2.0 Synopsis of Conceptual, Theoretical and Empirical Literature

Foreign Direct Investment plays major role in the economic growth and development of the host country. Recipient or host countries have been able to change their economic stances and have allowed the foreign investors to come in and improve their economies. Various forms of Foreign Direct Investment, aside capital flows, pumps in a lot of capital knowledge and technological resources into the economy of a country.

Adeleke, Olowe and Fasesin (2014) noted that FDI is a direct investment into

production or business in a country by an individual or company of another country, either by buying a company in the target country or by expanding operations of an existing business in that country. FDI is assumed to be a major source of foreign capital for industrialization and growth process in a developing country of which Nigeria is not an exception. It is overwhelmingly the oil that lubricates and engineers growth and development at the international arena.

Arfan and Abdullahi (2013) in their study observed that since 1990s, FDI emerged as a boom to developing countries in promoting industrialization, growth and development. They further noted that a rising trend of FDI inflows in the newly emerging segments of the developing world economy is attributed to the perception that such inflows tend to help in augmenting the productive resources and filling up a technological gap and overcoming capital shortage to facilitate the growth process of development in upcoming of the developing countries in recent years.

FDI, as one of the major sources of external finance for developing countries like Nigeria that have scarcity of funds is an investment involving acquisition or creation of assets that is undertaken by foreigners or a joint venture in the local environments with the main aim of creating a long-term relationship (Margaret and Patrick 2016). It is an investment from one country into another (normally by companies rather than governments) that involves establishing operations or acquiring tangible assets, including stakes in other businesses. This involves the purchase or establishment of income generating assets in a foreign country that entails the control of the operation of organization.

FDI is distinguished from portfolio foreign investment (the purchase of one country's securities by nationals of another country) by the element of control. FDI is not just a transfer of ownership as it usually involves the transfer of factors complementary to capital, including management, technology and organizational skills. In FDI investors are granted management and voting rights if the level of ownership is greater than or equal to 10% of ordinary shares. Shares ownership amounting to less than the stated amount is termed portfolio investment and is not categorized as FDI. The threshold for a foreign direct investment establishes a controlling interest, per guidelines by the organization of Economic Cooperation and Development (OECD), is a minimum 10% ownership stake in a foreign based company, typically represented for the investor acquiring 10% or more of the ordinary shares or voting shares of a foreign company. However, there are instances where there could be less than 10%. This does not include foreign investments in stock markets.

FDI refers to, more specifically, the investment of foreign assets into domestic goods and services. FDI's are generally favoured over equity investments which tend to flow out of an economy at the first sign of trouble which leaves countries more susceptible to shocks in their money markets. The key feature of FDI is that it is an investment made that establishes either effective control of, or at least substantial influence over, the decision making of foreign business.

Foreign Direct Investments are commonly made in open economies, as opposed to tightly regulated economies, that offer a skilled workforce and above average growth prospects for the investor. It frequently involves more than just a capital investment. It may include provision of management or technology as well. This investment can be made in variety of ways, including opening of a subsidiary or associate company in a foreign country, acquiring a controlling interest in an existing foreign company, or by means of a merger or joint venture with a foreign company.

FDI's are forms of investments that encourage and allow capital flows from home countries to another known as the host countries. It is an alternative source of capital for developing and underdeveloped countries where domestic savings (for investment) are inadequate.

According to Lipsey (2001), the macroeconomic theories explain what motivate the

investors to invest in foreign countries. Woldemesked (2008), identified what motivate the investors in form of macro – level factors that affect the host country's FDI flows. These include market size, economic growth (GDP), infrastructure, natural resources, political situation, interest rates, inflation rates, unemployment rates, exchange rates, among others.

The Macroeconomic theory of foreign direct investments identified in the study of Beghum, Sannasee et al (2009) opined that the timing of investments depends on the changes in the macroeconomic environment. The environment consists of GDP, domestic investment, the real exchange rate, productivity and openness which are some of the factors that affect the FDI flows in a country. This theory further states that FDI is long term function for multinational companies and period of time play an important function.

The timing or investment will depend on the macroeconomic environment, that is the political environment, inflation rate, exchange rate, interest rate, market size, government policies etc at that particular period in the host country as well as its degree of openness, rate of economic development, risk perceptions, etc. constitutes a determinant of Foreign Direct Investments. It is important for a foreign investor to analyse and understand the investment environment of a country and the risk associated with the investment environment as the macro-environment is country specific and the effect of one variable will not be the same as in another economic environment.

Studies have been carried out to examine the impact of macro-economic policy variables on Foreign Direct Investment with less emphasis on Nigeria.

Kabir (2012), using a time series data for more than 30 years from Nigeria and OLS method of estimation found a positive relationship between FDI and the macroeconomic variables, included in the model. Variables considered were GDP, industrial production and gross fixed capital formation (as a measure of standard of living).

Margaret and Patrick (2016) in their study examined the impact of selected macro-economic variables on FDI in Kenya. Variables studied were exchange rate, GDP, inflation rate and FDI for a period of 2005 – 2014 (10 years). Using a linear regression analysis, the variables were reported to have a negative insignificant effect on FDI inflows.

Arfan and Abdullahi (2013) empirically studied the effect of macroeconomic variables on FDI inflows in Pakistan between 1991 to 2011. They used the E-views OLS and hierarchical regression with GDP growth rate inflation rate, exports, imports and Balance of payments(BOP) as independent variables and FDI inflows as the dependent variable. It was found that GDP, exports, imports and BOP have significant positive effect on FDI in Pakistan while inflation rate was not significant in determining the FDI inflows in the country.

Patrick, Emmanuel and Prudence (2013), with reference to Ghana, empirically researched on impact of macroeconomic factors on Foreign Direct Investment and using Johansen Cointegration approach with a time series data of between the period 1980 to 2012, observed that first past year of FDI last two years of exchange rate and trade openness were statistically significant with regard to FDI in Ghana.

Harrison (2012) used the OLS method of data estimation to affirm that Gross Domestic Product, interest rate and real exchange rate are key determinants of FDI in Nigeria. The study established that these domestic macroeconomic variables are critical to FDI inflow.

Olukayode (2015) examined macroeconomic consequences of FDI in Nigeria between the period 1980 – 2012. Variables considered in the study were GDP, deregulation, political regime, trade openness inflation rate, exchange rate and infrastructural development of host country. Using the e-views econometric analysis, it was found that market size proxied with GDP, trade openness and infrastructure development attracts FDI significantly. Political instability was found to have negative but insignificant effect towards attracting FDI. It was also noted that exchange rate and inflation rate are positive but insignificant in

the attraction of FDI.

Obidike and Uma (2013) study covered the period 1975 – 2009. They used the OLS e-view econometric analysis involving Augmented Dickey Fuller and Johansen Cointegration test. In the study it was found that the explanatory variables included in the model came out statistically significant on FDI in Nigeria. Variables considered therein were GDP, inflation rate, exchange rates, foreign exchange reserve, government total expenditure, current account balances, share of total trade in GDP and government fiscal discipline.

Oladipo (2013), in a study using the Generalized Methods of Moments (GMM) with a time frame of 1985 – 2010 found that exchange rate, inflation rate, money supply and trade openness are important in the attraction and determination of FDI in Nigeria. However, previous FDI, and government recurrent expenditure negatively determine FDI. The effect of money supply on FDI is stronger than that of other variables.

3.0 Methodology

This study adopted the quasi-experimental research design. This is simply because the data for the study is already in existence or it involves the analysis of secondary data. The data for this research were from the secondary source. The data were obtained mainly from the Central Bank of Nigeria Statistical Bulletin.

Method of Data Analysis

The e-view Vector Auto Regression analysis was employed. This involved test for unit root, using the Augmented Dickey Fuller (ADF), Impulse Response Function Analysis, Variance Decomposition and VAR OLS estimations.

Model Specification

Functionally, the model of the study was specified:

$$\text{as: FDI} = f(\text{EXR, INT, INF, RGDP, TOP}) \dots \dots \dots \quad (1)$$

This was mathematically given as:

$$\text{FDI} = a_0 + a_1\text{EXR} + a_2\text{INT} + a_3\text{INF} + a_4\text{RGDP} + a_5\text{TOP} + U \text{ -----} \quad (2)$$

Where:

- a_0 = Constant of the Intercept
- $a_1 - a_6$ = slope
- FDI = Foreign Direct Investment
- EXR = Exchange Rate
- INT = Interest Rate
- INF = Imports
- TOP = Trade Openness
- U = error term.

4.0 Data Estimations

Table 4.2: ADF Unit Root Test

Variables	ADF	Mackinnon Critical values		Order of Integration
	t-statistic	5%	10%	
FDI	-4.434440	-3.012363	-.2646119	1(1)
EXR	-4.901277	-2.971853	-2.625121	1(1)
INF	-5.862219	-2.976263	-2.627420	1(2)
INT	-4.246140	-2.967767	-2.622989	1(0)
RGDP	-6.288767	-2.976263	-2.627420	1(2)
TOP	-3.146643	-2.971853	-2.625121	1(0)

Source: E-view 9.0

The variables for model estimation were stationary at 1 (0), 1(1) or 1(2) and thus could be relied upon. This also informed the choice of VAR as it accommodates the various levels of integration.

VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria

Endogenous variables: FDI_NB_STD US_NIG_STD T_OPEN_STD

ML_STD CPI_STD RGDP_STD

Exogenous variables: C

Date: 02/06/17 Time: 09:45

Sample: 1986 2015

Included observations: 27

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-107.8203	NA	0.000185	8.431131	8.719094	8.516757
1	47.37964	229.9258*	2.91e-08*	-0.398492*	1.617254*	0.200895*
2	81.95795	35.85899	5.06e-08	-0.293181	3.450347	0.819966

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: E-view 9.0

Most of the selection criteria indicated the selection of lag length 1(-1)

Impulse Response Function

The vector Autoregression Estimates is better explained using the **impulse response function (IRF) and variance Decomposition (VD)**.

The impulse response function (IRF) was used to examine the behaviour or response of foreign Direct Investment with respect to a unit shock in the predictor variables.

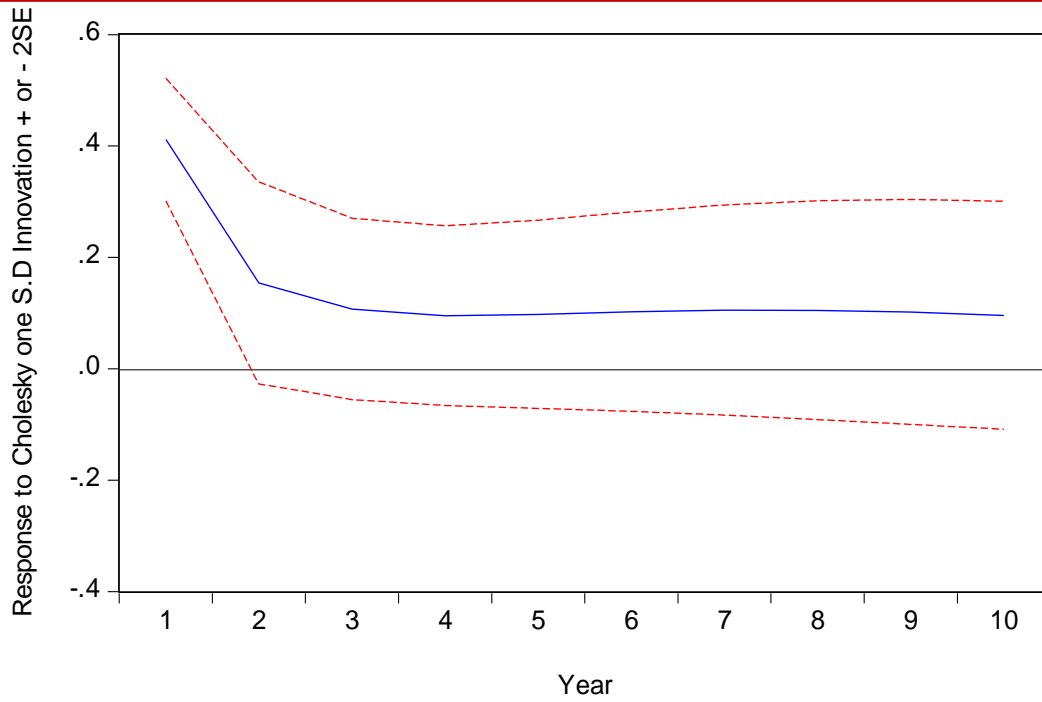


Fig. 4.1

Response of FDI_NB_STD to US_NIG_STD

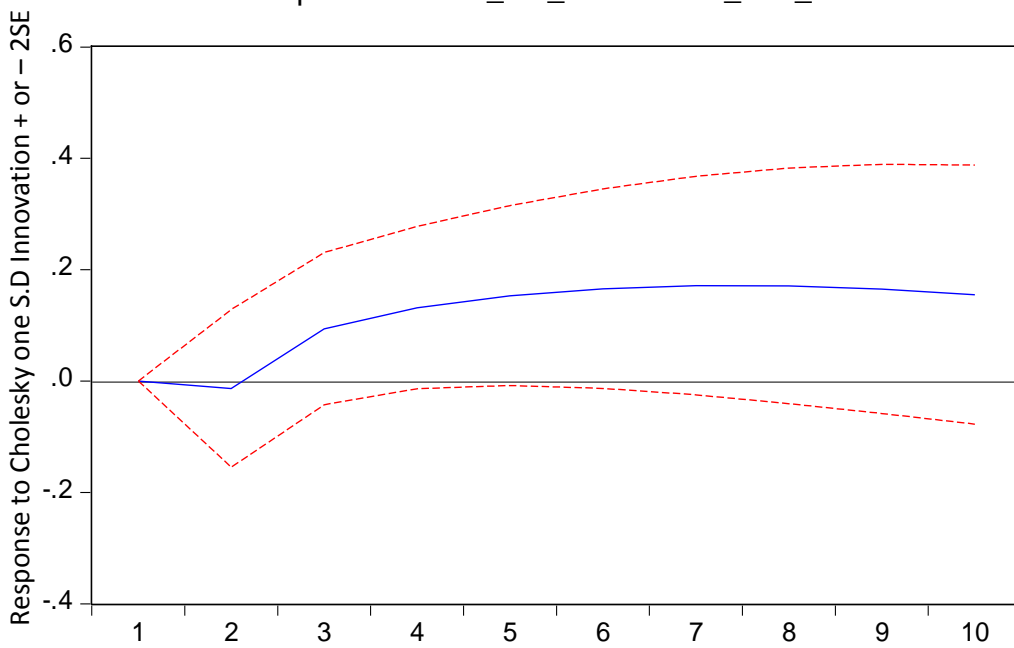


Fig. 4.2

Response of FDI_NB_STD to T_OPEN_STD

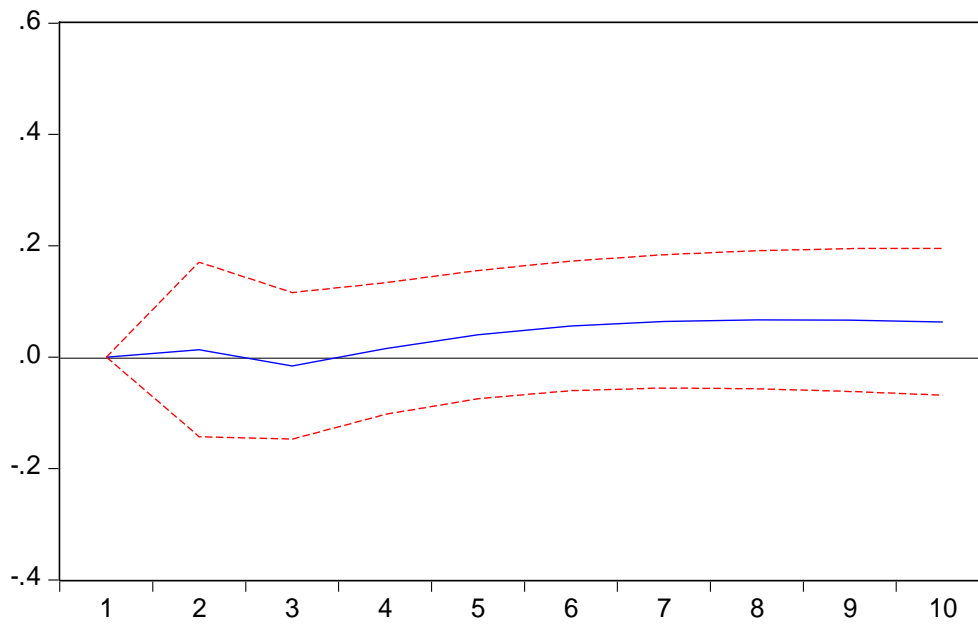


Fig. 4.3

Response of FDI_NB_STD to ML_STD

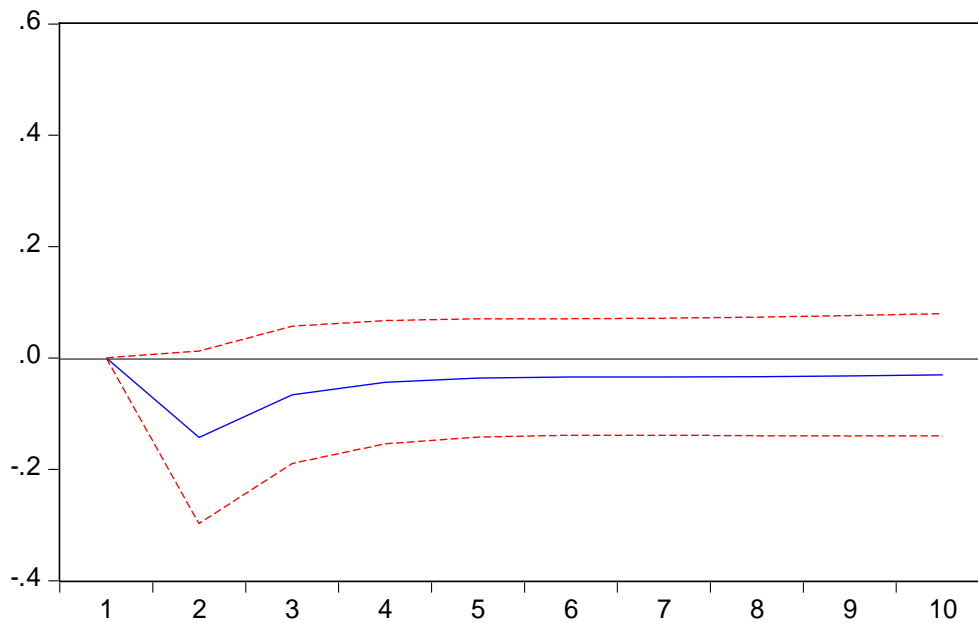


Fig. 4.4

Response of FDI_NB_STD to CPI_STD

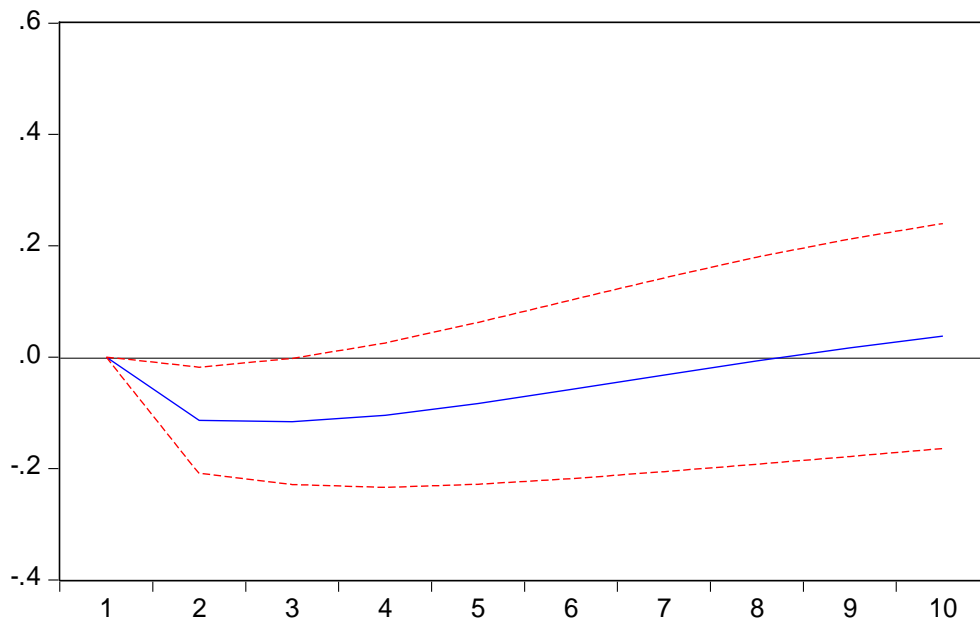


Fig. 4.5

Response of FDI_NB_STD to RGDP_STD

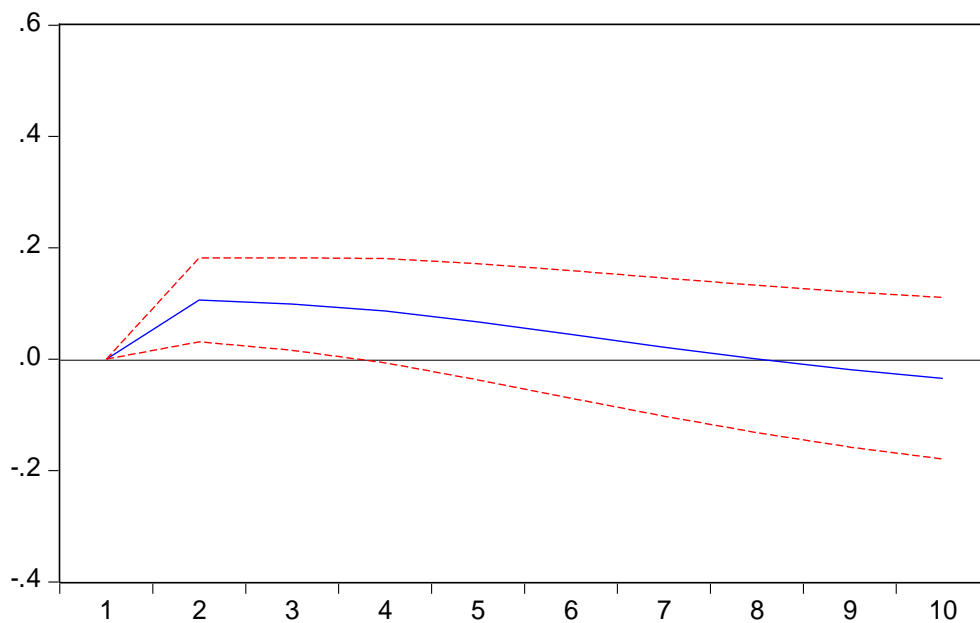


Fig. 4.6

Source: E-view 9.0

Variance Decomposition

This separates the variation in an endogenous variable into the component shocks. Variance Decomposition gives information about the relative importance of each explanatory variable in affecting the endogenous variable. It examined the sources of volatility and as well shows the period when an economy is to expect the peak or maximum impact of her policies.

Period	S.E.	FDI_NB_STD	US_NIG_STD	T_OPEN_STD	ML_STD	CPI_STD	RGDP_STD
1	0.411704	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.487954	81.14838	0.074947	0.076568	8.540412	5.423062	4.736626
3	0.534958	71.51758	3.150168	0.152527	8.637210	9.187000	7.355513
4	0.577229	64.15444	7.915646	0.200515	7.992612	11.15962	8.577164
5	0.616891	58.67583	13.10121	0.604222	7.337727	11.59158	8.689428
6	0.654302	54.60130	18.06184	1.266504	6.794722	11.09200	8.183629
7	0.689385	51.51117	22.45014	2.001265	6.361488	10.20629	7.469643
8	0.721900	49.09130	26.08093	2.685120	6.014801	9.315905	6.811944
9	0.751570	47.12645	28.89211	3.257959	5.732326	8.645260	6.345900
10	0.778183	45.47707	30.91281	3.699737	5.497119	8.298304	6.114970

Cholesky Ordering: FDI_NB_STD US_NIG_STD T_OPEN_STD ML_STD CPI_STD RGDP_STD

Source: E-view 9.0

Granger Causality Analysis

VAR Granger Causality/Block Exogeneity Wald Tests

Date: 02/06/17 Time: 10:02

Sample: 1986 2015

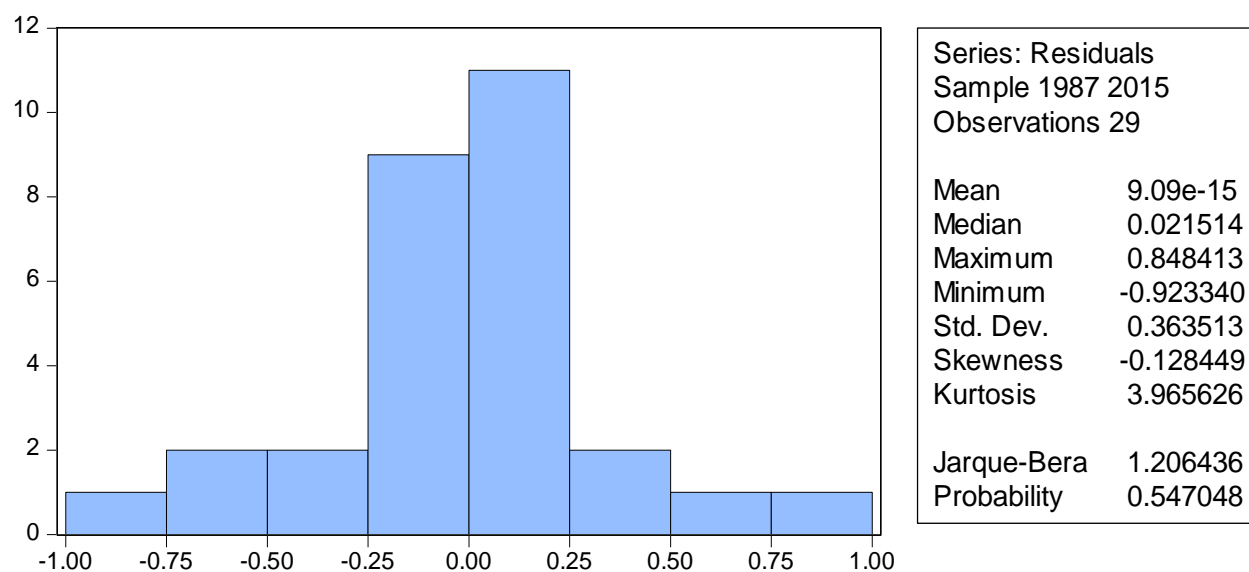
Included observations: 28

Dependent variable: FDI_NB_STD

Excluded	Chi-sq	df	Prob.
US_NIG_STD	2.539612	1	0.1110
T_OPEN_STD	0.694107	1	0.4048
ML_STD	6.092506	1	0.0136
CPI_STD	7.601605	1	0.0058
RGDP_STD	9.272963	1	0.0023
All	16.20945	5	0.0063

Source: E-view 9.0

Normality Test



Source: E-view 9.0

Discussion of Findings

The results of the analysis conducted towards investigating the impact of macroeconomic policy variables on Foreign Direct Investment in Nigeria revealed that the explanatory variables are important in the attraction of FDI in Nigeria.

Stationarity tests were carried out using the Augmented Dickey Fuller (ADF) Unit root test in order not to carry out estimations/analysis with spurious data. The ADF analysis showed that the variables included in the study were integrated at level 1(0), 1st difference 1(1) and second difference 1(2). Thus, confirming that the data could be relied upon for estimations.

Similarly, the VAR output presented above was given more insight using the impulse Response Function and Variance Decomposition. However, the lag order selection criteria suggested the use of lag length 1 or (-1) as the case may be.

The impulse response Function which x-rays the behaviour of foreign direct investment to a unit shock in each of the macroeconomic policy variables (exchange rate, inflation rate, interest rate, real gross domestic product and trade openness) showed their individual relationships within the bands.

Fig. 4.1 showed that past foreign direct investment has a positive relationship with current FDI; thus suggesting that FDI in the past have always been looked upon as a panacea for attracting more FDI into the country. The exchange rate policies on fig. 4.2 were observed to have positive relationship with FDI. Though, this was witnessed from the second year of the policy implementation. From the onset (1 to 2 years) the shock has a negative relationship with FDI. This could be attributed to some policies introduced within the period which tend to deter FDI. This may have resulted from the Structural Adjustment Programme of the 1986. The same was also the situation with trade openness on fig 4.3. Moreover, fig 4.4 revealed that FDI responds negatively to a unit shock in interest rates. This would have resulted from the fact that these interest policies were not motivating as to attract FDI. It took a longer period of time before the shock could yield an expected result. Inflation rate policy shocks exerted a negative relationship with FDI as seen on fig 4.5 while FDI reacts positively to a unit shock in the economic growth (RGDP) as shown on fig 4.6.

Looking at the sources of volatility, in the first period or year, past FDI explained

100% of the variation in the model, while it accounted for about 81% in the second year. The remaining 19% was attributed to exchange rate, trade openness, interest rate, inflation rate and real gross domestic product (RGDP) respectively. In other words, the maximum impact of exchange rate policy was felt in the 10th year, trade openness in the 10th year, interest rate in the third year, inflation rate in the 5th and RGDP also in the 5th year.

The granger causality test revealed that all the macroeconomic policy variables (put together) granger cause FDI or has significant impact on FDI in Nigeria. Most importantly and on individual basis, interest rate, inflation rate and real gross domestic product are significant in the attraction of FDI in Nigeria.

Further test carried out (diagnostic) in this regard that included normality test showed that the variables are normally distributed given the Jarque-Bera probability value that is $> 5\%$ (0.547048) level of significance. Also, the Breusch-Godfrey serial correlation LM test with probability value $> 5\%$ (0.2107) level of significance depicted the absence of serial correlation. In the same vein, the Breusch-Pagan-Godfrey Heteroskedasticity test revealed there was no heteroskedasticity (0.3909 $> 5\%$). The q-statistic for autocorrelation test showed no autocorrelation given the Q-Stat Prob. Values that are all $> 5\%$ level of significance.

5.1 Conclusion and Recommendations

The VAR and the granger causality test revealed that the examined macroeconomic policy variables exert an impact on the FDI in Nigeria. More importantly, the effect of interest rate, inflation rate and economic growth policies in the attraction of FDI cannot be overemphasized. Therefore, based on the said analysis, it could be said that the considered macroeconomic variables impact significantly on FDI. This aligns with the work of Kabir (2012), Patrick, Emmanuel and Prudence (2013) and Harrison (2012), Olukayode (2015) and Obidike and Uma (2013) whose studies revealed that the identified macroeconomic variables have significant impact in the determination of FDI flows into Nigeria but disagrees with the study of Margaret and Patrick (2016) who found negative insignificant effect of these variables on FDI in Nigeria. Based on the foregoing, the following recommendations were put forth:

- Government should evolve sound policies that would strengthen the attraction of FDI in Nigeria by paying more attention to the identified macroeconomic policy variables. The variables have shown to be vital tools that could be used to encourage the inflow of FDI into the country.
- Policies that ensure the continuous growth of the economy must be pursued and sustained. According to the study, economic growth is crucial to the attraction of FDI in Nigeria.
- There is the need for the creation of friendly and enabling environment for FDI to thrive in Nigeria. A stable and enabling environment gives room for economic growth which in turn attracts foreign inflow of capital.
- As important policy variables in the attraction of FDI, interest rate and inflation rate policies should be reviewed. The study has shown that foreign direct investment responds negatively to shocks in interest rates and inflation rates. Policies that favour interest rates and reduce inflation rates in the attraction of FDI in Nigeria should be pursued vigorously.
- In addition, ease and cost of doing business, availability of infrastructural facilities amongst other incentives as regards the attraction of FDI in Nigeria need be given adequate/due attention.

References

- Adeleke, K.M., Olowe S.O. and Fasesin O.O. (2014) Impact of Foreign Direct Investment on Nigeria Economic Growth. *International Journal of Academic Research in Business and Social Sciences*.
- Ahmed, A. (1998) Strategies for Foreign Investment in Nigeria. CBN Perspective. *Economic and Financial Review*. Vol. 26 No. 1 March.
- Ajayi, S.I. (2006) The Determinants of Foreign Direct Investment in Africa. A Survey of the Evidence. In Ajayi S.I. (Ed.) *Foreign Direct Investment in Sub-Saharan Africa: Origins, Targets and Potential*. AREC, Nairobi.
- Akhter (1993) In Emmanuel, N.E. (2012). The Impact of Foreign Direct Investment on the Nigerian Economy. Unpublished MBA Thesis. School of Postgraduate Studies. University of Nigeria, Enugu Campus.
- Akinmuleguin, S.O. (2012) FDI Trends in Developing Nations: Nigeria Experience in a Globalization Era. *International Business and Management*. Vol. 4 No. 1 P. 146 – 156.
- Arfan, S. and Abdullahi, K.A. (2013) Effect of Macroeconomic Variables on the FDI Inflows. The Moderating Role of Political Stability. An Evidence From Pakistan. *Asian Social Science*. Vol. 9. No. 9. P. 270 – 279.
- Beghum N. Sannasse RV et al (2009) In Margaret N.K. and Patrick K. (2016) Impact of Selected Macro Economic Variables on Foreign Direct Investment in Kenya. *International Journal of Economics, Finance and Management Sciences*.
- CBN (2015) In Oguzie I.G. (2016). Foreign Direct Investment and Nigeria Economic Growth (1985 – 2014) unpublished Masters Thesis Department of Banking & Finance, Imo State University, Owerri.
- Dared, K. Falak, S. Awan R. and Ashfaq, M. (2012) Foreign Direct Investment. Trade and Economic Growth in Pakistan. *Asian Social Science*, 6(9): 82.
- Economy Watch (2010). Foreign Direct Investment and Economic Development Universal Resource Locations.
- Ekpo, A.H. (1996) Government Policy and Foreign Private Investment in Africa: Performance, Challenges and Responsibilities. ATPC Working in Progress, Economic Commission for Africa Paper No. 21 Sept.
- Harrison, O.O. (2012) Do Domestic Macroeconomic Variables Matter for Foreign Direct Investment Inflow in Nigeria. *Research Journal of Finance and Accounting*. Vol. 3. No. 9 P. 55 – 67.
- Investopedia Foreign Direct Investment. Universal Resource Locations.
- Kabir, H. (2012) Foreign Direct Investment and the Nigerian Economy. *American Journal of Economics* 2(3) P. 33 – 40.
- Kjetil B.N. Hans J.K. and Hildegun (2002) The Role of FDI in Economic Development. *Nordic Journal of Political Economy*. Vol. 28 P. 109 – 126.
- Lipsey, R.E. (2001). Foreign Direct Investment and the Operations of Multinational Firms: Concepts, History and Data. Cambridge, Massachusetts. *National Bureau of Economic Research Working Paper* 8665 Dec.
- Margaret N.K. and Patrick K. (2016) Impact of Selected Macro Economic Variables on Foreign Direct Investment in Kenya. *International Journal of Economics, Finance and Management Sciences*.
- Obidike and Uma (2013) Effects of Macroeconomic Variables on FDI in Liberalized Economy: The Case of Nigeria. *IOSR Journal of Economics and Finance*. Vol. 1 Issue 4 P. 12 – 20.
- Oladipo, S.O. (2013) Macroeconomic Determinant of Foreign Direct Investment in Nigeria (1985 – 2010): a GMM Approach. *Journal of Emerging Issues in Economics, Finance*

- and Banking*. Vol. 2. No. 4 P. 801 – 817.
- Olukayode, E.M. (2015). Macroeconomic Consequences of FDI in Nigeria: An Empirical Analysis, *European Journal of Business and Management*. Vol. 7. No. 22. P. 78 – 85.
- Patrick, E. Emmanuel, D.K. and Prudence, A.O. (2013) Impact of Macroeconomic Factors on Foreign Direct Investment in Ghana: A Cointegration Analysis.
- Salman, A. and Feng H. X. (2010) FDI in Pakistan: Impact on GNP and Capital Financial Account. Paper Presented at the Financial Theory and Engineering (ICFTE).
- Shahzad, A. Mithani, D.A., Al-Swidi, A.K. and Fadzil, F.H. (2012). Political Stability and the Foreign Direct Investment Inflows in Pakistan. *British Journal of Arts and Social Sciences*. 9 (2) P. 199-213.
- Shiro, A.A. (2009). The Impact of FDI on the Nigerian Economy Conference Paper. Department of Finance. University of Lagos. Lagos State www.unilag.edu.ng/researchview.
- UNCTAD (2009) Nigeria Ranks 19th in the World in Attracting FDI. <http://www.UNCTAD-expert.by.htm>
- Woldemeskel (2008) in Margaret N.K. et al (2016). Impact of Selected Macro Economic Variables on Foreign Direct Investment in Kenya. *Int'l Journal of Economics, Finance and Management Sciences*. Vol. 4. Issue 3 Jun P. 107 – 116.
- Yarbrough B.V. and Yarbrough R.M. (2002). *The World Economy: Trade and Finance*. South-Western College Publishers.

APPENDIX

Null Hypothesis: D(FDI_NB_STD) has a unit root

Exogenous: Constant

Lag Length: 7 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.434440	0.0024
Test critical values:		
1% level	-3.788030	
5% level	-3.012363	
10% level	-2.646119	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(FDI_NB_STD,2)

Method: Least Squares

Date: 01/30/17 Time: 09:30

Sample (adjusted): 1995 2015

Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI_NB_STD(-1))	-3.114588	0.702363	-4.434440	0.0008
D(FDI_NB_STD(-1),2)	1.576187	0.620326	2.540901	0.0259
D(FDI_NB_STD(-2),2)	1.661236	0.530606	3.130830	0.0087
D(FDI_NB_STD(-3),2)	2.362289	0.479590	4.925641	0.0004
D(FDI_NB_STD(-4),2)	3.217695	0.702508	4.580300	0.0006
D(FDI_NB_STD(-5),2)	2.765875	0.900456	3.071637	0.0097
D(FDI_NB_STD(-6),2)	2.762151	0.858435	3.217659	0.0074
D(FDI_NB_STD(-7),2)	1.938183	0.553225	3.503428	0.0044
C	0.185310	0.086625	2.139231	0.0537
R-squared	0.952439	Mean dependent var		-0.014497
Adjusted R-squared	0.920731	S.D. dependent var		0.941234
S.E. of regression	0.265002	Akaike info criterion		0.479368
Sum squared resid	0.842713	Schwarz criterion		0.927021
Log likelihood	3.966634	Hannan-Quinn criter.		0.576520
F-statistic	30.03819	Durbin-Watson stat		1.499704
Prob(F-statistic)	0.000001			

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

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.862219	0.0000
Test critical values: 1% level	-3.699871	
5% level	-2.976263	
10% level	-2.627420	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(CPI_STD,3)

Method: Least Squares

Date: 01/30/17 Time: 09:33

Sample (adjusted): 1989 2015

Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPI_STD(-1),2)	-1.171406	0.199823	-5.862219	0.0000
C	0.011135	0.008947	1.244569	0.2248
R-squared	0.578881	Mean dependent var		0.001409
Adjusted R-squared	0.562036	S.D. dependent var		0.069028
S.E. of regression	0.045682	Akaike info criterion		-3.263026
Sum squared resid	0.052172	Schwarz criterion		-3.167038
Log likelihood	46.05086	Hannan-Quinn criter.		-3.234484
F-statistic	34.36561	Durbin-Watson stat		2.048381
Prob(F-statistic)	0.000004			

Null Hypothesis: ML_STD has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.246140	0.0025
Test critical values: 1% level	-3.679322	
5% level	-2.967767	
10% level	-2.622989	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(ML_STD)

Method: Least Squares

Date: 01/30/17 Time: 09:33

Sample (adjusted): 1987 2015

Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ML_STD(-1)	-0.702152	0.165362	-4.246140	0.0002
C	0.088447	0.163161	0.542081	0.5922
R-squared	0.400396	Mean dependent var		0.109319
Adjusted R-squared	0.378188	S.D. dependent var		1.113755
S.E. of regression	0.878252	Akaike info criterion		2.644706
Sum squared resid	20.82582	Schwarz criterion		2.739002
Log likelihood	-36.34823	Hannan-Quinn criter.		2.674238
F-statistic	18.02971	Durbin-Watson stat		1.991198
Prob(F-statistic)	0.000230			

Null Hypothesis: D(RGDP_STD,2) has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.288767	0.0000
Test critical values:		
1% level	-3.699871	
5% level	-2.976263	
10% level	-2.627420	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(RGDP_STD,3)
 Method: Least Squares
 Date: 01/30/17 Time: 09:35
 Sample (adjusted): 1989 2015
 Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP_STD(-1),2)	-1.313733	0.208901	-6.288767	0.0000
C	0.004599	0.010744	0.428018	0.6723
R-squared	0.612695	Mean dependent var		-0.006405
Adjusted R-squared	0.597203	S.D. dependent var		0.086792
S.E. of regression	0.055084	Akaike info criterion		-2.888730
Sum squared resid	0.075856	Schwarz criterion		-2.792742
Log likelihood	40.99785	Hannan-Quinn criter.		-2.860187
F-statistic	39.54859	Durbin-Watson stat		1.920756
Prob(F-statistic)	0.000001			

Null Hypothesis: D(US_NIG_STD) has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.901277	0.0005
Test critical values: 1% level	-3.689194	
5% level	-2.971853	
10% level	-2.625121	

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

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(US_NIG_STD,2)
 Method: Least Squares
 Date: 01/30/17 Time: 09:36
 Sample (adjusted): 1988 2015
 Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(US_NIG_STD(-1))	-1.023323	0.208787	-4.901277	0.0000
C	0.106634	0.049397	2.158716	0.0403
R-squared	0.480234	Mean dependent var		0.017705
Adjusted R-squared	0.460243	S.D. dependent var		0.330909
S.E. of regression	0.243113	Akaike info criterion		0.078167
Sum squared resid	1.536700	Schwarz criterion		0.173325
Log likelihood	0.905660	Hannan-Quinn criter.		0.107258
F-statistic	24.02252	Durbin-Watson stat		1.889018
Prob(F-statistic)	0.000044			

Null Hypothesis: T_OPEN_STD has a unit root

Exogenous: Constant

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

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.146643	0.0344
Test critical values: 1% level	-3.689194	
5% level	-2.971853	
10% level	-2.625121	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(T_OPEN_STD)

Method: Least Squares

Date: 02/06/17 Time: 10:07

Sample (adjusted): 1987 2014

Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
T_OPEN_STD(-1)	-0.507303	0.161220	-3.146643	0.0041
C	0.048763	0.152715	0.319306	0.7520
R-squared	0.275794	Mean dependent var		0.018035
Adjusted R-squared	0.247939	S.D. dependent var		0.929917
S.E. of regression	0.806437	Akaike info criterion		2.476368
Sum squared resid	16.90888	Schwarz criterion		2.571526
Log likelihood	-32.66916	Hannan-Quinn criter.		2.505459
F-statistic	9.901365	Durbin-Watson stat		2.144488
Prob(F-statistic)	0.004111			

Dependent Variable: FDI_NB_STD

Method: Least Squares (Gauss-Newton / Marquardt steps)

Date: 02/06/17 Time: 12:05

Sample (adjusted): 1987 2015

Included observations: 29 after adjustments

$$\text{FDI_NB_STD} = \text{C}(1) * \text{FDI_NB_STD}(-1) + \text{C}(2) * \text{US_NIG_STD}(-1) + \text{C}(3) * \text{T_OPEN_STD}(-1) + \text{C}(4) * \text{ML_STD}(-1) + \text{C}(5) * \text{CPI_STD}(-1) + \text{C}(6) * \text{RGDP_STD}(-1) + \text{C}(7)$$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.235290	0.203509	1.156167	0.2600
C(2)	0.369169	0.197334	1.870783	0.0747
C(3)	0.092657	0.101444	0.913378	0.3709
C(4)	-0.233344	0.090269	-2.584985	0.0169
C(5)	-2.589309	0.865172	-2.992824	0.0067
C(6)	2.881772	0.934335	3.084303	0.0054
C(7)	0.051209	0.076987	0.665161	0.5129
R-squared	0.868872	Mean dependent var		0.030024
Adjusted R-squared	0.833110	S.D. dependent var		1.003858
S.E. of regression	0.410098	Akaike info criterion		1.261666
Sum squared resid	3.699976	Schwarz criterion		1.591703
Log likelihood	-11.29416	Hannan-Quinn criter.		1.365030
F-statistic	24.29579	Durbin-Watson stat		2.344017
Prob(F-statistic)	0.000000			

VAR OUTPUT

Vector Autoregression Estimates

Date: 02/06/17 Time: 09:35

Sample (adjusted): 1987 2014

Included observations: 28 after adjustments

Standard errors in () & t-statistics in []

	FDI_NB_STD	US_NIG_STD	T_OPEN_STD	ML_STD	CPI_STD	RGDP_STD
FDI_NB_STD(-1)	0.187334 (0.21099) [0.88789]	0.014517 (0.11753) [0.12352]	0.029381 (0.40027) [0.07340]	-0.515524 (0.45387) [-1.13583]	0.010328 (0.02113) [0.48886]	-0.005128 (0.02177) [-0.23552]
US_NIG_STD(-1)	0.325025 (0.20395) [1.59362]	0.836011 (0.11361) [7.35851]	0.520429 (0.38693) [1.34502]	-0.725172 (0.43875) [-1.65283]	0.030966 (0.02042) [1.51629]	0.066009 (0.02105) [3.13620]
T_OPEN_STD(-1)	0.085127 (0.10218) [0.83313]	0.079126 (0.05692) [1.39021]	0.354594 (0.19384) [1.82928]	0.391509 (0.21980) [1.78119]	-0.000946 (0.01023) [-0.09246]	0.013850 (0.01054) [1.31354]
ML_STD(-1)	-0.224862 (0.09110) [-2.46830]	-0.009408 (0.05075) [-0.18539]	-0.089337 (0.17283) [-0.51691]	0.133442 (0.19597) [0.68092]	0.002281 (0.00912) [0.25005]	-0.013544 (0.00940) [-1.44066]
CPI_STD(-1)	-2.438099 (0.88430) [-2.75710]	0.638359 (0.49259) [1.29592]	0.139709 (1.67764) [0.08328]	-0.756386 (1.90230) [-0.39762]	0.931790 (0.08855) [10.5232]	-0.060883 (0.09126) [-0.66716]
RGDP_STD(-1)	2.857487 (0.93837) [3.04515]	-0.483527 (0.52271) [-0.92503]	-1.032773 (1.78022) [-0.58014]	1.944666 (2.01862) [0.96336]	0.111330 (0.09396) [1.18486]	1.077308 (0.09684) [11.1249]
C	0.074966 (0.08158) [0.91898]	0.093558 (0.04544) [2.05889]	-0.019589 (0.15476) [-0.12657]	0.098763 (0.17548) [0.56280]	0.117058 (0.00817) [14.3310]	0.114020 (0.00842) [13.5443]
R-squared	0.872577	0.954957	0.442575	0.275269	0.998432	0.998395
Adj. R-squared	0.836170	0.942087	0.283311	0.068202	0.997983	0.997936
Sum sq. resids	3.559501	1.104503	12.81113	16.47208	0.035689	0.037907
S.E. equation	0.411704	0.229337	0.781059	0.885655	0.041224	0.042487
F-statistic	23.96755	74.20333	2.778873	1.329375	2227.960	2176.593
Log likelihood	-10.85410	5.529047	-28.78381	-32.30275	53.58152	52.73711
Akaike AIC	1.275293	0.105068	2.555987	2.807339	-3.327251	-3.266937
Schwarz SC	1.608344	0.438119	2.889038	3.140390	-2.994200	-2.933886
Mean dependent	0.011389	-0.015442	0.078606	0.052417	-0.044775	-0.036018
S.D. dependent	1.017158	0.952988	0.922611	0.917495	0.918002	0.935155
Determinant resid covariance (dof adj.)	6.28E-09					
Determinant resid covariance	1.12E-09					
Log likelihood	50.19004					
Akaike information criterion	-0.585003					
Schwarz criterion	1.413304					

Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.203157	Prob. F(2,20)	0.3211
Obs*R-squared	3.114438	Prob. Chi-Square(2)	0.2107

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 02/06/17 Time: 12:07

Sample: 1987 2015

Included observations: 29

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.426673	0.346565	1.231149	0.2325
C(2)	-0.077888	0.201971	-0.385642	0.7038
C(3)	0.007712	0.102428	0.075288	0.9407
C(4)	0.019035	0.092448	0.205898	0.8390
C(5)	1.060906	1.115498	0.951061	0.3529
C(6)	-1.347090	1.292166	-1.042506	0.3096
C(7)	-0.001834	0.076296	-0.024036	0.9811
RESID(-1)	-0.628584	0.411921	-1.525983	0.1427
RESID(-2)	-0.172039	0.278452	-0.617839	0.5437
R-squared	0.107394	Mean dependent var	9.09E-15	
Adjusted R-squared	-0.249648	S.D. dependent var	0.363513	
S.E. of regression	0.406363	Akaike info criterion	1.285987	
Sum squared resid	3.302619	Schwarz criterion	1.710320	
Log likelihood	-9.646809	Hannan-Quinn criter.	1.418883	
F-statistic	0.300789	Durbin-Watson stat	2.054930	
Prob(F-statistic)	0.957034			

Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.250985	Prob. F(6,22)	0.3195
Obs*R-squared	7.377211	Prob. Chi-Square(6)	0.2874
Scaled explained SS	6.295466	Prob. Chi-Square(6)	0.3909

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 02/06/17 Time: 12:08

Sample: 1987 2015

Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.130887	0.040891	3.200840	0.0041
FDI_NB_STD(-1)	0.032405	0.108093	0.299790	0.7672
US_NIG_STD(-1)	-0.033955	0.104813	-0.323959	0.7490
T_OPEN_STD(-1)	0.028661	0.053882	0.531915	0.6001
ML_STD(-1)	-0.015686	0.047946	-0.327149	0.7466
CPI_STD(-1)	-0.322249	0.459534	-0.701252	0.4905
RGDP_STD(-1)	0.427352	0.496270	0.861127	0.3985
R-squared	0.254387	Mean dependent var	0.127585	
Adjusted R-squared	0.051037	S.D. dependent var	0.223604	
S.E. of regression	0.217823	Akaike info criterion	-0.003763	
Sum squared resid	1.043830	Schwarz criterion	0.326274	
Log likelihood	7.054567	Hannan-Quinn criter.	0.099600	
F-statistic	1.250985	Durbin-Watson stat	3.026800	
Prob(F-statistic)	0.319511			

Autocorrelation Test

Date: 02/06/17 Time: 12:09

Sample: 1986 2015

Included observations: 29

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
. * .	. * .	1	-0.186	-0.186	1.1056	0.293
. .	. .	2	0.054	0.020	1.2019	0.548
. ** .	. ** .	3	0.262	0.285	3.5689	0.312
. ** .	. ** .	4	-0.326	-0.257	7.3927	0.117
. * .	. *** .	5	-0.178	-0.362	8.5812	0.127
. .	. * .	6	0.039	-0.086	8.6413	0.195
. ** .	. * .	7	-0.282	-0.101	11.892	0.104
. * .	. ** .	8	-0.141	-0.239	12.749	0.121
. ** .	. * .	9	0.280	0.136	16.265	0.062
. * .	. .	10	-0.137	0.013	17.153	0.071

Sources: E-views 9.0