

Do Domestic Macroeconomic Variables Matter for Foreign Direct Investment Inflow in Nigeria?

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Abstract

Economic theory predicts that foreign capital flows could stimulate economic growth of nations. However, there are various exogenous and endogenous factors that influence the flow of capital from one region to the other. This study focused on the impact of pull factors on capital movement in Nigeria. The empirical analysis addresses the role of key domestic macroeconomic variables on Foreign Direct Investment (FDI) in Nigeria using the Ordinary Least Square (OLS) estimation technique. The result shows that real gross domestic product, interest rate, and real exchange rate are key determinants of foreign direct investment in Nigeria. The result suggests that these domestic macroeconomic variables are critical to FDI inflow. Thus, policy makers should strive to improve the macroeconomic environment to encourage the flow and benefits of foreign direct investment in Nigeria.

Key words: Economic Theory, Exogenous, Endogenous, Pull Factors and Capital Movement.

1. Introduction

The need for capital inflow into an import dependent economy like Nigeria is crucial. A cursory look at the data indicates that Nigeria has posted trade imbalances in most fiscal years, suggesting that total payments had exceeded total receipts vis-à-vis total imports to total exports relations (Amadi, 2002). Overall balance of payments deteriorated in 1999, 2002 and 2008 mainly due to increased outflow from capital accounts (CBN, 2009). Much of the capital outflow must be attributed to increased importation, declining exports particularly non-oil subsector, and majorly due to external debt servicing required in filling resource gaps. Ariyo (1999) and Essien and Onwioduokit (1999) have identified debt servicing and reserve creation as fluctuating variables that create dependence on foreign capital in Nigeria.

Nigeria has been a mono-cultural economy that depends so much on crude oil as the main source of foreign exchange. Oil is subject to the vagaries of production and prices at the international market. Therefore, revenue from it may be subject to serious fluctuations. This partly explains why mono-cultural economies are often deficient in investment capital. Attempts to manage this problem often require deep macroeconomic adjustments that may not positively impact the growth of the economy. Basically, poor economic management often results in trade imbalances, persistent fiscal deficit, insufficient domestic savings, low capital formation and domestic investment, accompanied by high inflationary pressure, poor infrastructural facilities, unemployment, low output and excess reliance on imports.

In order to bridge these gaps, a few options are open to authorities; either they borrow from outside, attract foreign investments or borrow from the domestic money and capital markets. Each of these alternatives is constrained in terms of its feasibility and effectiveness in the Nigerian context. The often narrowness of the Nigerian financial market poses constraint on its reliance for huge investment capital for the productive sectors of the economy. Therefore, the country must rely on externally sourced funds through foreign direct investments or by borrowing from foreign lenders. External borrowing, however, requires that certain conditions must be met. Some, such as IMF conditionalities are often difficult to meet. However, foreign capital inflow appears to be a lee way to pry loose these challenges given the high benefits it confers to the host economy even though it has its own constraints.

According to UNCTAD (2005), promoting and facilitating technology transfer through Foreign Direct Investment (FDI) has assumed a prominent place in the strategies of economic revival and growth being advocated by policy makers at the national, regional and international levels. It is considered to be the key to bridging the technology and resource gap of underdeveloped countries and avoiding further up of debt. To attract foreign investment, economic

theory and policy suggest that certain exogenous factors like stable and efficient macroeconomic environment are crucial. There is an emerging consensus that a conducive macroeconomic policy environment is not only a desideratum but is in fact, a sinequanon for attracting foreign investment inflows in a liberalizing and globalizing world economy (Serven and Solimano, 1997; Iyoha, 2001 and Oyejide, 2005). Consequently, most developing countries, including Nigeria, have embarked on serious structural and sectoral economic adjustments and reform to further improve their macroeconomic fundamentals centered on monetary, fiscal and exchange rate policies. These policy planks are expected to underpin salutary effects on foreign capital flows. Available data have suggested that foreign direct investment is becoming responsive to these policy planks (CBN, 2009).

In development economics literature, a growing argument in both the theoretical and empirical perspectives show a sharp divide among economists and policymakers on the determinants of foreign direct investment. For instance, Calvo, Leiderman and Reinhart (2005) noted that global push factors may be more critical while studies like Anyanwu (2003) and Okafor (2004) opined that domestic factors may even be more necessary. The effect of the global financial crises on the flow of foreign direct investment poses an important policy question as to whether the push factors or the domestic economic environment (pull factors) constitute the primary forces for attracting and sustaining foreign capital inflow in the highly volatile economic environment.

This study explores the relationship between foreign direct investment inflow and domestic macroeconomic variables in Nigeria. Some policy issues emanate from the above. First, there is the need to understand why this phenomenon is invoked contrary to economic theorizing on the impact of globalization on capital flows. Second, this attempt is critical in reconciling the diverse views offered by different authors with respect to the determinants of FDI. The rest of this paper is organized in to four sections. Section two provides stylized facts on foreign direct investment inflow in Nigeria. The literature review is articulated in chapter three while section four of this paper contains the theoretical framework and methodology for the analysis. The empirical result of the study is presented and discussed in section five while the last section concludes the study.

2 Profile of Foreign Direct Investment (FDI) in Nigeria

Foreign direct investment inflow in Nigeria has increased since 1970 even though it fluctuated markedly in some years. For instance, FDI inflow increased from ₦128.6m in 1970 to ₦253m in 1975 with an average growth rate of 25% during this period. Over the period 1976 to 1980, the growth rate of foreign direct investment inflow in Nigeria declined by 65% and about 30% between 1981 and 1985. FDI inflows to Nigeria increased markedly from ₦735.8million in 1986 to ₦4686billion by the end of 1990 to reach over 239.3% growth rate during the period. The sudden increased in FDI inflows during the period can be attributed to various federal government policies designed to promote investment, such as removal of restriction on foreign investors and also the involvement of foreigners in the downstream and upstream oil sub-sector.

Figure 2.1 reveals that FDI inflows maintained an upward trajectory through out the period 1991 and 1995 in Nigeria. The major factor responsible for this was the improved government intervention in the encouragement of foreigners to invest in the economy. The flow of FDI continued to increase before it fell significantly during the period 1997 and 1999. This was the transition period from military to democratic government. By the year 2000, FDI inflow improved as net inflows increased by 13.5 percent to reach over US\$1,140.7million. However, the tempo was not sustained in 2001. The low level of FDI during this period can be attributed to a number of factors, which are not limited to macroeconomic instability, as evidenced by rising inflation and interest rates, exchange rate volatility and fiscal dominance. Poor infrastructural facilities, inadequate water supply and a poor road network are among factors which have continued to constrain the flow of FDI into Nigeria. High debt burden also influenced adversely the foreign investors' perception about the health of the economy. Similarly, the incessant social and political instability, insecurity of life and property are factors which undermine Nigeria's efforts in attracting FDI, despite the economy's natural resource advantages, such as large market size, strategic location, abundance of natural resources and cheap labor force.

During the period 2002 and 2005, FDI inflow in Nigeria maintained its growth trajectory from ₦132481billion to ₦253306.6billion with an annual average growth of 19%. A plausible factor that accounted for this is the increased confidence of foreigners in the domestic economy as a result of the shift from the military to the democratic government. More also the various economic reforms and incentives offered to foreign investors aided in attracting foreign investor to the Nigeria's economy during this period. In 2008, FDI inflow in Nigeria stood at

₦251400.9billion. Most of the foreign direct investments into the country were directed to the oil and gas, extractive and communication sectors. Thus, the economic structure remains undiversified and oil exports account for 95% of total export earnings, while the manufacturing sector accounts for less than two percent. The adverse effect of the global financial crises led to the decline in the volume of foreign direct investment inflow in 2009 even though it was more noticeable in the portfolio investment module.

2.1 Trend of some Macroeconomic Variables in Nigeria

During the oil boom era, roughly 1970-75, GDP grew positively by 23%. In the period of 1976 to 1980, the growth rate of GDP averaged over 18%. However, in the early 1980s, GDP had witnessed negative growth rates. The average growth rate of Nigeria's GDP between 1981 and 1985 was -7.2%. The apparent increase in industrial and manufacturing activities during 1978 and 1988 was due to enhanced economic activities in the mining sub-sector, especially petroleum. Capital formation in the economy has not been satisfactory. In the period 1986-1990 which constitutes the period of structural adjustment and economic liberalization, GDP responded to economic adjustment policies and grew at a positive rate of 33.1% on the average. During the preceding five years after the Structural Adjustment Programme, GDP growth averaged 52.42%. Subsequently the boom in the oil sector attracted labour away from the rural to urban centers. It was therefore not surprising that by 1996, the economy had become a net importer of basic food items. The growth rate of GDP during 1996 and 2000 decreased significantly while the year by year inflation rate continued to soar during the same period. However, growth rebounded following massive reform and economic adjustments with GDP growth rate reaching an average of 7.5% during 2000 and 2005. By 2006 and 2008 economic activities witnessed a broad-based growth even though it was driven mainly by the non oil sector before the wake of the global crises through out 2009. Agriculture grew by 7.4 per cent with crop production and fishing dominating the sector. Wholesale and retail trade rose by 15.3% and the service subsector by 9.8 percent. Industrial output fell by 3.5 per cent during this period. Manufacturing capacity dropped with a total decline in electricity supply and consumption.

III. Literature Review

Generally, there are two broad categories of foreign investments namely official (public) and private foreign investments. Official foreign investments are undertaken at the bilateral and multilateral levels. The former refers to investment arrangements between two countries by means of direct government to government transfers, while the later relates to investments originating from such international organizations such as the IMF and the World Bank. Official capital flows are largely driven by strategic and political motivations (Iyoha, 2001). However, the private capital flows are basically of three strands; the foreign direct investment, the portfolio investment and the short-term capital flows: bank credit and bond lending commercial loans (Okafor, 2004 and Akhotor, 2007).

Foreign direct investment (FDI) is the distinctive feature of multinational enterprise. It is not simply an international transfer of capital but rather the extension of enterprise from its home country (Amadi, 2002). This extension of enterprise involves flows of capital technology and entrepreneurial skills to the host economy where they are combined with local factors in the production of goods for the local and export market (Root, 1984). According to Iyoha (2002), foreign direct investment inflows are by and large investment by transnational corporations in foreign (host) countries for the purpose of controlling assets and managing production activities in those countries (IMF, 1997 and Okafor, 2004). There are several variants of FDI in the literature, wholly-owned enterprise, joint ventures and special contracts arrangement such as licenses, franchises, management contracts, consultancy, Turkey contracts, sub-contracting, quality control and standard services among others (see, Vera-Versalo, 1996; Aremu, 1997 and Obadan, 1999).

Foreign portfolio investment on the other hand, refers to the acquisition of assets by a foreign national or company in a domestic stock or money market through holding of transferable securities issued or guaranteed by the government of the home country. Such securities are held in the form of equity shares, debentures, bonds, promissory notes and other money market instruments. Portfolio investments are usually motivated by short-term profit consideration (dividends and capital gains), and do not involve management control over the companies in which securities are acquired. They are also more volatile and sensitive to shocks given that they appear in the form of short-term diversified risks unlike the foreign direct investment component with long term characteristic nature (Oyejide, 2005).

It is generally agreed in principle that foreign direct investments and portfolio inflows are not only beneficial but could also be harmful to domestic economic development policy drive. Both impact on key monetary and fiscal policy variables that influence the real sector. One of the major issues that have preoccupied development economists in the literature has been the key determinants of foreign capital flow. Studies on this subject concentrated mainly on the external factors where the foreign investments originate. However, the domestic environment which can stimulate capital flows particularly in emerging market economies has received less research attention even though such factors may differ across nations. This consideration could affect the extent a country may initiate policies and responses to the inflow of capital movement in an economy.

Moreover, the direction of both foreign direct investment and private capital inflows is explained by two categories of theory namely; push and pull factors theories Calvo, Leiderman and Reinhart (1993), Reinhart (2005), Oyejide (2005) and Akhotor (2007). The push factor theorists thought that the surge of foreign direct investment are contingent on the increasing tax burden of multinational corporations in their home countries and due in part to domestic developments such as sound policies and strong economic performance for private portfolio investments. Calvo, Leiderman and Reinhart (2005) argue that cyclical movements in foreign interest rates are driving forces behind international capital mobility. On the other hand, the pull factor theory trace the cause of capital flows to domestic factors such as autonomous increase in the domestic money demand, increasing integration of domestic capital markets with the global capital markets, improvement in external credit relations, adoption of sound fiscal and monetary policies, and neighbor externalities (Akhotor, 2007). Overall these factors can be classified into three sub-theories of FDI, the internationalization, the oligopolistic and the eclectic theories of foreign direct investment (see, Ogunkola and Jerome, 2006).

There have been several attempts in the literature to empirically establish the relationship between foreign direct investment and its determinants. However, the findings on these works have been at best mixed due to the diverse focus and methodology applied by the various authors. Most authors focused mainly on the global push factors, the country pull factors, and or both which justifies the diverse methodologies. For instance, Arbatli (2011) using a dynamic partial adjustment model to capture the effect of push factors on the emerging market economies finds that growth in the exporting (G-7) economies, international liquidity and global risky environment are critical determinants of capital flow in the emerging market economies. Similar predictions were offered by Calvo, Leiderman and Reinhart (1993) and Reinhart (2005). According to these reports, pull factors such as the size of the domestic market, level of education, legal and political institution are necessary determinants of foreign direct investment inflow in emerging economies.

Using bilateral FDI inflow data from G-7 countries, Dabla-Noris (2010) argues that FDI flow is pro-cyclical to the growth of the G-7. The study reports that credit conditions proxied by real interest rate, economic growth and institutional quality play a critical role in attracting FDI in the G-7 economies. Ajayi (2006) observes that even though both the push and pull factors play strategic roles in attracting FDI, the profitability of investment determine the specific factors that influence FDI inflow in Africa. However, some important measurable variables that could capture macroeconomic environment were not included in some of these studies. In spite of these cross country studies, Anyanwu (1998), Iyoha (2001), Okafor (2004), Siphambe (2006) Khan and Bamou (2006), Asante (2006) and Ogunkola and Jerome (2006) were among the prominent advances in the literature that have been directed to individual country analysis to specifically understand the underlying country specific factors that influence foreign direct investment.

Interestingly, another school of thought argues that domestic macroeconomic environment such as market size, level of education, infrastructure, openness and political institution are critical determinants of foreign direct investment (Ajayi, 2006; Ogunkola and Jerome, 2006; Asiedu, 2004; Khan and Bamou, 2006; and Campos and Kinoshita, 2006). In the case of Nigeria, Anyanwu (1998) and Ogunkola and Jerome (2006) confirm the positive role of domestic market size in determining FDI inflow into the country. Anyanwu (1998) argues that the abrogation of the indigenization policy in 1995 significantly encouraged the flow of FDI into the country and that more effort is required in raising the nation's economic growth so as to attract more FDI. Iyoha (2001) reveals that macroeconomic instability and uncertainty, economic size and external debt are critical in attracting foreign direct investment. Okafor (2004) shows that market size proxied by gross domestic product (GDP) attracts FDI to Nigeria whereas inflation discourages capital flow. The study concludes that unsuitable macroeconomic policy acts to discourage foreign investment inflows into the country.

Mottaleb (2008) empirically examine the determinants of foreign direct investment and its impact on economic growth in developing countries. It was found that countries with larger GDP and high GDP growth rate recorded robust FDI inflows. He maintained that business friendly environment with abundant modern infrastructural facilities, such as internet can successfully attract FDI and FDI on the other hand significantly affect economic growth in the countries. Dinda (2009) notes that endowment of natural resources, openness, macroeconomic risk factors like inflation and exchange rates are significant determinants of FDI inflow to Nigeria. The study suggests that the bulk of FDI inflow to Nigeria can be explained by resource-seeking FDI (see Ogunkola and Jerome, 2006 and Ajayi, 2006). In summary, it is reasonable to conclude that no single factor influences the movement of FDI in an economy rather the peculiar fundamentals of the country and region could differ in attracting foreign capital flow Asiedu (2004) and Ajayi (2006). Therefore, given the restraints imposed by the global financial crisis, it is important to investigate whether pull factors can influence and sustain the direction of FDI flows.

IV. Methodology

The focus of this study is on the impact of (pull factors) domestic macroeconomic environment on foreign direct investment inflow in Nigeria. These factors hinge on a number of economic policy variables: monetary, fiscal, financial and commercial policies used to capture the policy environment. Such variables include the size of the domestic market, inflation rate, interest rate, exchange rate and export growth performance. Thus, the analytical model is in the spirit of Arbatli (2011) and Anyanwale (2007). We assume that that the equilibrium level of FDI is a function set of pull factors “*ceteris paribus*”.

This is specified as

$$FDI = f(X_i) \tag{1}$$

Where, FDI is foreign direct investment and X_i is a set of economic variables capturing the pull factors. Thus, we specify our estimable equation as;

$$FDI = a + RGDP + INF + INT + NETEXP + REXCH + \varepsilon_i \tag{2}$$

Where;

FDI: Foreign Direct Investment is the total value of foreign investments in tangibles assets in the economy. It is obtained from the Central Bank of Nigeria (CBN) statistical bulletin.

RGDP: Real Gross Domestic Product is used to measure the market size of the economy. The market size hypothesis suggests that the higher the market size, the more the expected inflow of FDI.

INF: Inflation rate is the prevailing change in the consumer’s price level in an economy over time. It is used to captures the level of macroeconomic stability in the economy.

INT: Interest rate is the users cost of capital. However, it is used as a monetary variable to measure the impact of monetary policy on foreign capital flow.

NETEXP: Net-export is the difference between total export and total import in the economy. It is adopted to capture the effect of commercial policy on foreign direct investment as well as the degree of dependence on foreign tradable goods.

REXCH: Real exchange rate is the value of the domestic currency relative to the foreign currency (dollar). It is equally a monetary policy variable.

ε_i is the stochastic disturbance term which captures the variables that were not included in the model.

Estimation Technique

Two main analytical techniques were adopted in this study. First, the time series properties of the variables were determined to avoid spuriousness of the result. Thus, Augmented Dickey Fuller ADF unit root test and the multivariate Johansen-Juselius cointegration method were applied. Second, the model in equation 2 was estimated using the Ordinary Least Square OLS estimation technique. The underlying data for the figures and empirical estimation are extracted from the central bank of Nigeria statistical bulletin 2010. The data span 1970 and 2009.

V. Empirical Analysis

a) Unit Root Test

Table 5.1 presents the result of the unit root tests. The result indicates that real gross domestic product, foreign direct investment, interest rate, net export and real exchange rate are stationary in first difference while inflation is stationary at level. This implies that the variables are integrated of order one $I(1)$ and $I(0)$ respectively. Therefore, we reject the null hypothesis of the presence of unit roots in the series.

b) Cointegration Test

To establish the long run relationship among the variables, the Johansen multivariate method was utilized for this test. This method is less restrictive in its assumptions than the Engle and Granger technique. Table 5.2 showed at least three cointegrating vectors or equations among the variables. This therefore, suggests that there is a long run relationship among the variables used to estimate the determinants of foreign direct investments in Nigeria.

c) Determinants of Foreign Direct Investment

Having confirmed the nature of the relationship among the variables, the model for the determinants of FDI was estimated. The result from the regression analysis is contained in Table 5.3. The overall performance of the model is satisfactory, with all the coefficients correctly signed and three of the explanatory variables statistically significant. The result showed that the explanatory variables accounts for about 92 percent of the changes in the dependent variable (FDI). Real gross domestic product, interest rate, and real exchange rate were all statistically significant at 5% while inflation and net-export were statistically insignificant and negligible.

The result above indicates that market size (real gross domestic product) has a positive influence on the inflow of foreign direct investment in Nigeria. Accordingly, a 100% change in real GDP propels FDI inflow by about 25%. This result is consistent with the results of Ayanwale (2007).

Interest rate had a high but negative relationship with foreign direct investment. This is expected and consistent with results of previous studies, suggesting that a low interest rate in the host country will encourage FDI inflows particularly in the non-financial firms seeking for derivatives. Economic theory supports that interest rate substantially affect the intensity and pattern of foreign capital flows.

Real exchange rate equally had a positive statistical relationship with foreign direct investment inflow. More over, inflation rate and net-export were found to be insignificant even though they are rightly signed. The economic intuition is that high inflation is evidence of macroeconomic instability which does not encourage inflow of foreign capital. Similarly, weak net-export is evidence of an import dependent economy which has less capacity to produce and sustain itself. This result seems to reflect the character of the Nigerian economy which is often times characterized as an import dependent economy.

VI Conclusion and Policy Recommendation

This study has endeavored to analyze the nexus between foreign direct investment (FDI) and domestic macroeconomic environment in Nigeria. This empirical analysis is based on a model capturing the determinants of foreign direct investment in Nigeria. It is evident that pull factors are a prerequisite to not just attracting FDI but sustaining foreign capital in the host country. The result of the study suggests some policy implications for Nigeria. The macroeconomic fundamentals of the nation matters if foreign capital must flow from one country to the other. Specifically the country's capacity to generate national output that may serve as raw materials is critical. Secondly,

the consumption capacity of the nation may determine the extent to which foreign capital, particularly foreign direct investment, could be attracted to the host country. This is evidenced as portrayed in the result and thus suggests that country's macroeconomic fundamentals matters in attracting foreign direct investment.

Arising from the evidences offered by the empirical results, it is pertinent to offer some policy options that could strengthen the nexus between foreign direct investment and domestic macroeconomic policy environment in Nigeria. First, macroeconomic fundamentals of the nation need to be reinvigorated. Thus, policy makers should strive to strengthen macroeconomic policies (fiscal, monetary and commercial policies) that could help to improve the real sector of the economy and induce the inflow of foreign capital in Nigeria.

In addition, the government should strive to reduce the cost of doing business by providing the necessary incentives that could stimulate the flow of foreign direct investment in Nigeria. FDI could be growth enhancing if the necessary fundamentals like robust market potential and low interest rate on financial security is promoted while high inflation that raises cost of doing business should be discouraged.

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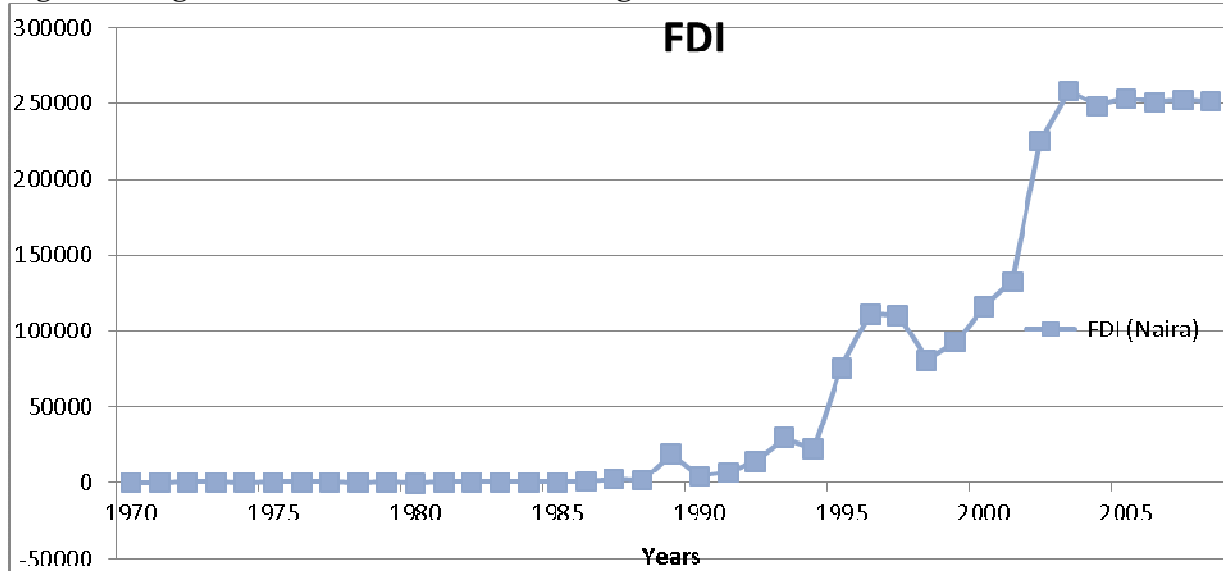
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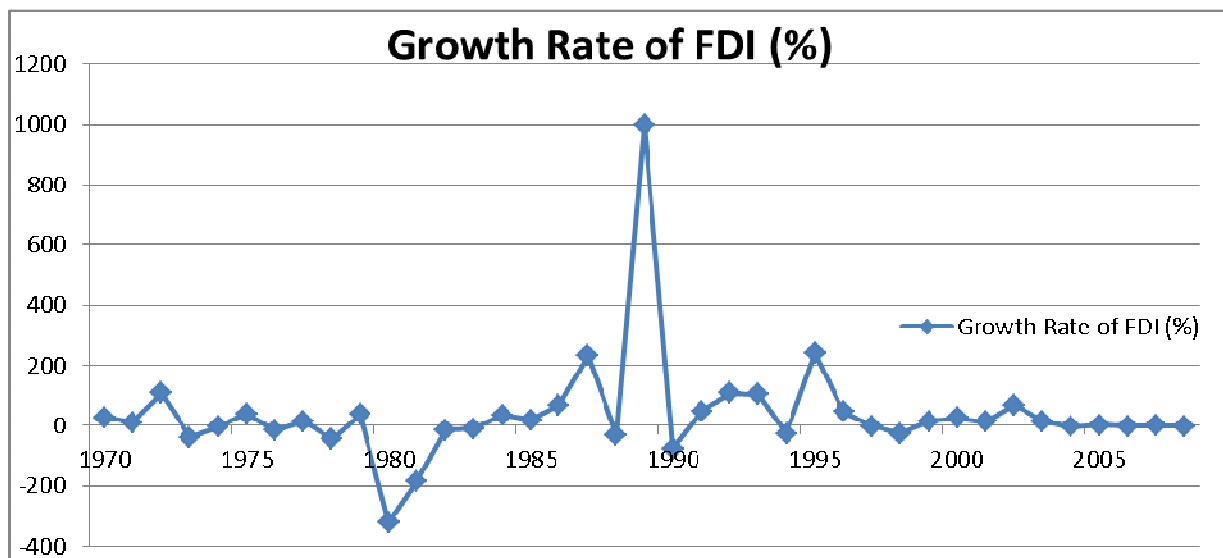
Appendix

Fig 2.1 Foreign Direct Investment inflow in Nigeria 1970 to 2008



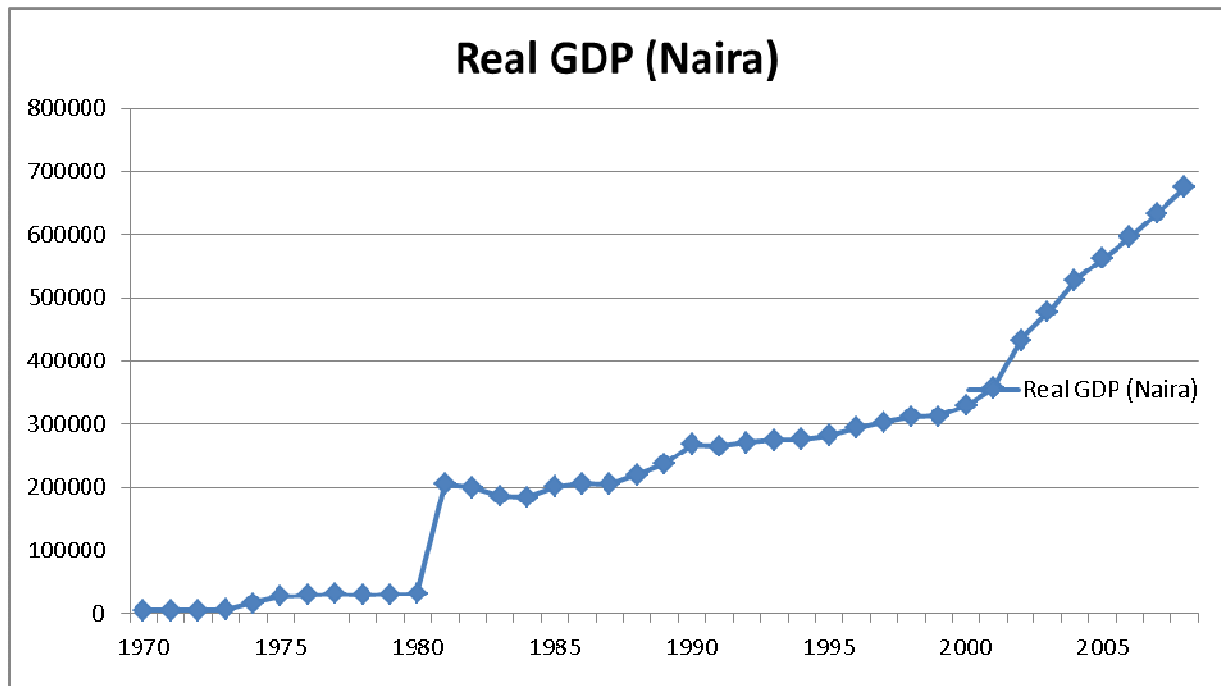
Source: Author's computation 2012

Fig 2.2 Growth Rate of FDI



Source: Author's computation 2012

Fig 2.3: Movement of Real GDP in Nigeria from 1970 to 2008



Source: Author's computation 2012

Fig 2.4 Growth rate of Real GDP

Table: 5.1 Result of the Augmented Dickey Fuller Unit Root test

variables	Levels		First Difference		Order of Integration
	t-Stat	Critical Value	t-Stat	Critical Value	
FDI	2.1148	-2.9389	-2.7777	-2.9411	I(1)**
RGDP	1.5949	-2.9389	-5.4240	-2.9411	I(1)**
INF	-3.1411	-2.9389	-6.3261	-2.9434	I(0)*
INT	-1.7570	-2.9389	-7.0226	-2.9411	I(1)**
NETEXP	-1.1671	-2.9411	-4.8954	-2.9434	I(1)**

REXCH	0.6528	-2.9389	-5.2429	2.9411	(1)**
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Source: Author's Computation 2012; * and ** are stationary at levels and first difference respectively.

Table 5.2: Result of the Johansen Cointegration test on the determinants of FDI

Null Hypothesis	Alternative Hypothesis	Trace Statistics	5 percent Critical Value	Hypothesized No. of CE(s)
$r=0$	$r=1^{***}$	125.0042	95.75366	3
$r \leq 1$	$r=2^{***}$	72.42534	69.81889	
$r \leq 2$	$r=3$	30.77337	47.85613	
$r \leq 3$	$r=4^{***}$	44.07507	29.79707	
$r \leq 4$	$r=5$	3.778170	15.49471	
$r \leq 5$	$r=6$	0.684144	3.841466	

Source: Authors Computation (2012) * Significant at 5% level**

Table 5.3: Result of the Determinants of Foreign Direct Investment in Nigeria

Dependent Variable: FDI				
Variable	Coefficient	S.E	t-Statistics	Prob
C	-7540.3	11993.4	0.6287	0.5337
RGDP	0.2552	0.0902	2.8270	0.0078
INF	181.28	371.82	0.4876	0.6290
INT	-2963.3	1563.4	-0.8954	0.0566
NETEXP	0.0038	0.0085	0.4446	0.6594
REXCH	1105.5	231.77	4.7689	0.0000
R-Squared	0.92		DW: 1.20	

Source: Author's Computation (2012)

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