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14 February 2012

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Abstract

This study used Granger causality and then error correction model to investigate the determinants of foreign direct investment inflow to Nigeria during the period 1970 – 2009. The results show that causality runs from government policy, fiscal incentives, availability of natural resources and trade openness to FDI without reverse or feed back effect. The parsimonious result of the error correction model reveals that past foreign investment flows could significantly stimulate current investment inflows. Also, while inadequate natural resources reduce the inflow of FDI, fiscal incentives, favorable government policy, exchange rate and infrastructural development are found to be a positive and significant function of FDI in Nigeria. Market size (at lags 2 and 3) and trade openness are positively signed while political risk is negatively signed. These variables, however impact insignificantly on FDI. Thus, fiscal incentives, favorable government policy and infrastructural development are positive predictors of FDI inflows and should be used as policy instruments. In the light of these findings, recommendations such as government, improving on the country's market size through its monetary and fiscal policy and revitalizing the agricultural sector for extraction of raw materials were made.

Keywords: foreign direct investment, error correction model, determinants of FDI,   natural resources, fiscal incentives, trade openness

1.0 Introduction

Foreign investment policies in Nigeria, since independence, have been crafted to reflect the posture of vogue development strategies. Prior to 1970 much of the non – agricultural sector was controlled by large foreign – owned trading companies which had a monopoly on the distribution of imported goods (Ogunkola et al, 2006). Between 1963 and 1972, an average of 65% of total capital was in foreign hands (Biersteker, 1987).

In 1972, the government pursued a policy of progressive elimination of foreign dominance, in terms of both ownership and management and technical control through an indigenization scheme and preferential credit to nurture indigenous entrepreneurs.

As a consequence, the Nigeria enterprises promotion decree was promulgated in 1972 and foreign equity ownership in local business concerns was limited to a maximum of 60 per cent. The drive of indigenization was extended in 1977 with the amended decree further reducing foreign ownership to not more than 40 per cent.

Government investment was no longer limited to public utilities as it increased its participation in industry through new investments and nationalization of some categories of foreign – owned business. Thus, expansion of agro – industry, growth of petroleum and petrochemicals, diversification of the textile industry, development of the iron and steel industry, installation of car assembly plants, and export – oriented industry were top of the list. This new strategy was encouraged and facilitated by the 1973 – 1975 "oil boom", which saw government's total revenue increase by 500% in just one year (Ogunkala et al, 2006).

In September 1986, the structural adjustment programme meant to restructure the economy and lay the part for self – sustaining growth was

adopted to resuscitate the vagaries/exigencies of the balance of payments crisis resulting from the oil glut in the world oil market. Government in pursuance of this aim invested enormously in a diversified portfolio of industrial projects which relatively yielded poor returns. This scenario led to government's realization that accelerated industrial development hinged critically on increased private sector participation. The abolition of the import licensing system, reduction and adjustment of import duties and tariffs, privatization of state – owned enterprises, and the introduction of the second tier foreign exchange market (SFEM) leading to the devaluation and managed float of the previously pegged naira were steps taken by the government to support this programme.

Though financial incentives such as outright grants and loans at concessional interest rates; fiscal incentives including tax holidays and reduced tax rates; and other incentives such as subsidized infrastructure or services, market preferences and regulatory concessions, including exemptions from labour and environmental laws were open to investors yet this is at the face of 40% foreign equity participation in Nigeria. Thus, government incentives over these years were superficial and/or inadequate and discouraged sizable FDI inflows.

In 1995, the Nigeria investment promotion commission (NIPC) was established through decree 16 of 1995. The decree repealed the existing inhibition and provided for foreign investors to set up a business with 100% ownership which must be registered with corporate affairs commission (CAC) in accordance with the provision of companies and Allied matters decree of 1990. Registration is finalized with the Nigeria investment promotion commission (NIPC). To ensure adequate protection, the NIPC guaranteed foreign investment against nationalization and expropriation by the government. Investment in any

sector was open to foreign companies. The Nigeria investment promotion commission (NIPC) decrees No.36 of 1988 and the Nigeria enterprise promotion decree (NEPD) of 1972 as amended in 1977 and 1988 which hitherto reserved for Nigerians the ownership of certain business and restricted the inflow of foreign investment became things of the past. This open door policy reinvigorated the interest of foreign investors and re-ushered considerable foreign inflows to Nigeria.

This paper therefore sets out to investigate the direction as well as magnitude of the determinants of foreign direct investment in Nigeria. To do this, the paper is divided into five sections. Section 1 is the introduction, section 2 deals on review of related literature, section 3 is the methodology. Section 4 discusses the empirical result while section 5 is the conclusion and recommendations.

2.0 Review of Related Literature

In making decisions to invest abroad, firms are influenced by a wide constellation of economic, political, geographic, social and cultural issues (Assanie and Singleton, 2002). It is important to note that while the list of factors is fairly long, not all determinants are equally important to every investor in every location at all times. It is also true that some determinants may be more important to a given investor at a given time than to another investor (see Ajayi, 2006).

The determinants of FDI are legion. While it is difficult to determine the exact quantity and quality of FDI determinants that should be present in a location for it to attract a given level of inflows, it is nevertheless clear that a critical minimum of these determinants must be present before FDI inflows begin to occur (Ngowi, 2001).

However, some of the outstanding common factors determining foreign investment in developing countries can be listed as follows.

- Size of the Market

- Trade Openness

- Government policy

- Labor cost and productivity

- Political risk

- Infrastructural development

- Exchange rate

- Natural resources

- Investment policy and

- Fiscal incentives

A number of studies such as that of Masayuki and Ivohasina (2005), Wafure and Nurudeen (2010), Raggazi (1993), Obadan (1982), Moore (1993), emphasized the importance of the size of the market and growth in attracting FDI. Ajayi (2006) maintained that market size and growth have proved to be the most prominent determinants of FDI, particularly for those FDI flows that are market seeking. In countries with large markets, the stock of FDI is expected to be large since market size is a measure of market demand in the country. This is particularly true when the host country allows the exploitation of economies of scale for import – substituting investment. For sub – Saharan Africa as a whole, Bhattacharya et al (1996) identified GDP growth as a major factor. According to them, only three Sub Saharam African low – income countries are amongst the nine main recipients of FDI flows in recent years, and of these only Nigeria is close to being classified as a large market when judged by the UNCTAD's benchmark of $36bn GNP.

Other researchers like Obadan (1982), Anyanwu (1998), Asiedu (2002), Chakrabarti (2001), Masayiki and Ivohasina (2005), Nwankwo (2006), Dinda (2009), Wafure and Abu (2010), who studied determinant

of FDI in Nigeria asserted that FDI is a positive and significant function of market size.

The costs as well as the skills of labour are identified as the major attractions for FDI. The cost of labour is important in location considerations, especially when investment is export oriented (see Wheeler and Mody (1992); Mody and Srinivasan, (1998). Lower labour cost reduces the cost of production, all other factors remaining unchanged. Sometimes, the availability of cheap labour justifies the relocation of a part of the production process in foreign countries. We comment here that quality labour or so to say the extent of the labour force of a country may attract FDI and not necessarily cheap labour as cheap labour as it sounds cheap may not give full productive capacity.

ODI (1997) reported that the rapid growth in FDI to Vietnam has also been attributed primarily to the availability of low – cost labour in India. In contrast, labour market rigidities and relatively high wages in the formal sector have been seen as deterring any significant inflows into the export sector in particular (ODI, 1997).

The availability of good infrastructure as crucial for attracting FDI is well documented in the literature, regardless of the type of FDI. It is often stated that good infrastructure increases the productivity of investment and therefore stimulates FDI flows (Asiedu, 2002). A study by Wheeler and Mody (1992) found infrastructure to be very important and dominant for developing countries. In talking about infrastructure, it should be noted that this is not limited to roads alone, but includes telecommunications. Availability and efficiency of telephones, for example, is necessary to facilitate communication between the host and home countries. In addition to physical infrastructure, financial infrastructure is important for FDI inflow. A well – developed financial

market is known from available evidence to enable a country tap the full benefits of FDI.

Country risk is very important to FDI. Several studies have found FDI in developing countries to be affected negatively by economic and political uncertainty. There is abundant evidence to show that there is negative relationship between FDI and political and economic stability. In a study on foreign owned firms in Africa, Sachs and Sievers (1998) concluded that the greatest concern is political and macroeconomic stability, while Lehman (1999) and Jaspersen et al. (2000) found that countries that are less risky attract more FDI. Perception of risk in Africa countries is still very high and could hinder foreign direct investment.

The ranking of political risk among FDI determinants remains somewhat unclear where the host country possesses abundant natural resources, as is seen in politically unstable countries such as Nigeria and Angola, where high returns in the extractive industries seem to compensate for political instability (ODI,1997).

Openness of an economy is also known to foster the inflows of FDI. The more open an economy is, the more likely it is that it would follow appropriate trade and exchange rate regimes and the more it would attract FDI.

One indicator of openness is the relative size of the export sector. Singh and Jun's (1995) study indicated that exports, particularly manufacturing exports, are a significant determinant of FDI flows and their tests showed that there is strong evidence that exports precede FDI flows. China, in particular, has attracted much foreign investment into the export sector.

The institutional environment is an important factor because it directly affects business operations. In this category is a wide array of factors that can promote or deter investment. The first of these is the

existence of corruption and bribery. Corruption deters the inflow of FDI because it is an additional cost and because wherever it exists, it creates uncertainty, which inhibits the flow of FDI. The second is the level of bureaucracy involved in establishing a business in a country. Complex and time – consuming procedures deter investment. The third institutional factor is the existence of incentives in the form of fiscal and financial attractions. A look at the trends of our data shows a remarkable dearth of fiscal incentives to foreign direct investment in Nigeria. This last factor is only useful to the extent that other favourable factors are already in place.

Fourth, there is also the institution of the judiciary, which is a key to protecting property rights and law enforcement regulations. A frequent measure of this is the rule of law, which is a composite of three indicators (Campos and Kinoshita, 2003): sound political institutions and a strong court system; fairness of the judicial system; and the substance of the law itself. It is expected that countries with better legal infrastructure will be able to attract more FDI. Related here is the enforceability of contracts: the lack of enforceability in many African countries raises risk of capital loss and hinders FDI.

Return on investment is another major determinant of FDI flows. In general, FDI will go to countries that pay a higher return on capital. For developing countries, testing the rate of return on capital is difficult because most developing countries do not have a well – functioning capital market (Asiedu, 2002). What is often done is to use the inverse of real GDP per capita to measure the return on capital. The implication of this is that all things being equal, investment in countries with higher per capita income should yield lower return and therefore real GDP per capita should be inversely related to FDI (Asiedu, 2002). The empirical result of the relationship between real GDP per capita and FDI is mixed.

In works by Edwards (1990) and Jaspersen et al. (2000), using the inverse of income per capita as proxy for the return on capital, they concluded that real GDP per capita and FDI/GDP are negatively related. Results of studies by Schneider and Frey (1995) and Tsai (1994) are different as they found a positive relationship between the two variables. This was based on the argument that a higher GDP per capita implies better prospects for FDI in the host country.

Investigating the determinants of FDI in Nigeria, Lousi (1998) using error correction specification, came out with the result that both political and economic factors constitute the major determinants of FDI in Nigeria. In contrary, Anyawu (1998) using cointegration technique, found political factors to be insignificant in the determination of FDI in Nigeria and that economic factors are the key determinants. In his finding, Ibrahim (2007) established that FDI is a negative and significant function of political factor.

From the results of their regression analysis, Udeaja et al (2008) showed that in five out of the six sectors considered in this study, past foreign investment flows could significantly stimulate current flows. This lends credence to the "agglomeration effect" thesis. According to them, the results obtained from this study supported the need for the Nigerian government to reverse the poor investment climate of the past in order to avert more severe consequences in the future. The current low FDI flows were reflection of the past investment environment.

Apart from this general finding their results also showed that trade liberalization is the key determinant of FDI inflows in the agriculture, forestry and fishery sector. Most investors in this sector are export – oriented firms; a restrictive trade policy would reduce the competitiveness of their product in the international market and, therefore, act as a disincentive to invest in Nigeria.

FDI inflows in the mining and quarrying sector, on the other hand, is strongly influenced by the rate of return on investment and macroeconomic stability apart from past foreign investment in the sector.

Focusing on Kenya, Elijah (2006) employed an econometric model to regress FDI on exogenous variables that include human capital, real exchange rate, annual inflation and openness of the economy. The author found that economic openness and human capital affect FDI inflows positively in the short – run. But inflation and real exchange were negatively related to FDI inflows in the short – run and long – run respectively.

Anyanwu (1998) maintained that domestic investment, openness and indigenization policy are very important determinants of FDI in Nigeria.

Fuat and Ekrem (2002) in examining location related factors that influence FDI inflows into the Turkish economy discovered that the size of the host country's market, infrastructure (proxied by share of transportation, energy and communication expenditures in GDP) and the openness of the economy (as measured by the ratio of exports to imports) are positively related to FDI inflows.

According to Harvey (1990), in the long – run the negative effects of exchange rate volatility were more than the positive effects in attracting FDI. Similarly, Goldberg and Kolstad (1994) found high exchange rate variability to be impediments to FDI inflows between United States and Canada, and Japan and United Kingdom.

According to Ahmet (1996), the movement in the exchange rate between the Turkish lira and the Deutsche mark, and interest rate affected inflows of Deutsche mark into the Turkish economy.

In Nigeria, Ekpo (1997) examined the relationship(s) between FDI and some macroeconomic variables for the period 1970 – 1994. The

author's results showed that political regime, real income per capita, rate of inflation, world interest rate, credit rating, and debt service explained the variance of FDI inflows to Nigeria.

According to Nwankwo (2006) FDI in Nigeria is mainly affected by political instability, macro-economic instability and the availability of natural resources. Anyanwu (1998) maintained that political factor is not a determinant of FDI but lent support to the efficacy of economic factors. Ibrahim (2007) on the other hand identified market size, real exchange rate and political factor as important determinants of FDI.

ODI (1999) observed that infrastructure covers many dimensions, ranging from roads, ports, railways and telecommunication systems to institutional development (e.g. accounting, legal services, etc.). Studies in China reveal the extent of transport facilities and the proximity to major ports as having a significant positive effect on the location of FDI within the country. According to it, poor infrastructure can be seen, however, as both an obstacle and an opportunity for foreign investment. For the majority of low-income countries, it is often cited as one of the major constraints.

Dinda, (2009) and Nwaknwo (2006) noted that natural resource is one of the major determinants of FDI to host country. According to him (Dinda, 2009) FDI takes place when a country richly endowed with natural resources lack capital or technical skill needed to extract and / or sale to the world market. The Nigeria economy is endowed with untapped agro-natural resources, yet the economy is monocultural as it concentrates on the tapping of oil resources thereby creating artificial scarcity of natural resources for agro-based industries. Even foreign investors see oil as the most viable venture and as such neglect the tapping of other resources. This lopsidedness in exploiting natural

resources constitutes artificially inadequate natural resources to the country.

3.0 Methodology

In this study, a systematic time series econometrics approach is used to investigate the determinants of FDI flow to Nigeria during 1970 – 2009. The data were soured from the statistical bulletin of the central bank of Nigeria. The Augumented Dickey Fuller (ADF) unit root test is used to verify whether the variables are difference stationary. We used the Johansen (1988) cointegration approach to determine the number of cointegration equations among the variables and then the granger causality test. Also error correction model (ECM) was used to verify short run dynamics with long-run equilibrium.

There are several techniques for ECM in econometric evaluation, such as the VECM which is more appropriate for multivariate framework, however, for simplicity, we employed ECM framework from static regression.

The data sourced from the statistical bulletin of the Central Bank of Nigeria include market size proxied by the real GDP growth, openness and infrastructure proxied by the ratio of export to import and government expenditure on transport and communication respectively. Natural resource was represented by the value of exported oil; while political risk and investment policy were proxied by dummy variables respectively.

3.1 Model specification

The independent variables are the size of the market, trade openness, political risk, infrastructural development, exchange rate, national resources, investment policy and fiscal incentives while the dependent variable is the real GDP. The model is stated as follows.

FDI = f(Avalabenr, Exchangerate, Fiscincentives, Govtpolicy, Infrastructure,
Marketsize, Politicrisk, Topenness)

or

FDI = λ_0 + λ_1Avalabenr + λ_2Exchangerate + λ_3Fiscincentives + λ_4Govtpolicy +λ_5Infrastructure +λ_6Marketsize +λ_7Politicrisk + λ_8 Topenness + U_t

Where

FDI	= foreign direct investment
Avalabenr	= availability of natural resources
Exchangerate	= Exchange rate
Fiscincentives	= fiscal incentives
Govtpolicy	= Government policy
Infrastructure	= Infrastructural development
Marketsize	= Market size
Politicrisk	= Political risk
Topenness	= Trade openness
λ_i	= parameters to be estimated.
U_t	= stochastic term

4.0 Empirical Results and Discussions

The results of the Augumented Dickey-Fuller test are presented in table.1 in the appendix. These results show that all the variables are integrated of order one, 1(1) at 5 percent level of significance with lag1. In other words, they are found to be stationary after differencing once. Thus, the model follows integrating process.

In order to determine whether there exist any cointegrating vector supporting the existence of long-run relationship between the FDI variable and the explanatory variables, the researcher employed the

Johansen cointegration test. The result of the test is presented in table 2 in the appendix.

The test indicates the presence of 3 cointegrating equations at 5 percent level of significance for the FDI model and therefore confirms the existence of long-run equilibrium relationship between FDI and its determinants. This existence suggests that causation runs at least from one variable to another. In ascertaining the direction (see appendix), it is found that availability of natural resources, government policy, fiscal incentiveness and trade-openess granger cause FDI without reverse or feed back effect while FDI only granger causes infrastructure(see table 4).

With these results, one specified the short run dynamic equation as an error correction model (ECM) incorporating the one period lagged residual from the static regression. The autoregressive distributed lag technique is used with a maximum lag of 3 to obtain an over-parameterized equation. Finally, parsimonious results were obtained and are presented in table 3 below.

Table 3. Pasimonious Results of FDI Model

Dependent Variable: FDI
Method: Least Squares
Date: 12/11/01   Time: 03:59
Sample(adjusted): 1974 2006
Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	0.296320	0.143896	2.059261	0.0945
D(FDI(-2))	-0.226938	0.074074	-3.063668	0.0280
D(FDI(--3))	0.004569	0.019050	0.239847	0.8200
AVALABLENR	-0.162506	0.020795	-7.814496	0.0006
D(AVALABLENR(-1))	-0.026584	0.053647	-0.495525	0.6412
D(AVALABLENR(-3))	0.153564	0.107142	1.433274	0.2112
EXCHANGERATE	-393.9102	573.2971	-0.687096	0.5226
D(EXCHANGERATE(-1))	8239.170	1687.868	4.881406	0.0045
D(EXCHANGERATE(-2))	6075.830	2109.858	2.879734	0.0346
FISCINCENTIVES	133754.3	48406.10	2.763171	0.0397
D(FISCINCENTIVES(	402089.5	102349.3	3.928601	0.0111

-1))				
D(FISCINCENTIVES(-2))	533340.9	148897.0	3.581946	0.0158
D(FISCINCENTIVES(-3))	178136.2	72836.29	2.445707	0.0582
GOVTPOLICY	133813.6	34910.12	3.833088	0.0122
D(GOVTPOLICY(-1))	1039919.	53609.62	19.39799	0.0000
INFRASTRUCTURE	22.63286	5.530829	4.092128	0.0094
D(INFRASTRUCTURE(-1))	-52.64116	4.191806	-12.55811	0.0001
D(INFRASTRUCTURE(-2))	-22.92932	4.486815	-5.110376	0.0037
MARKETSIZE	-0.344603	0.138970	-2.479702	0.0559
D(MARKETSIZE(-1))	-0.093086	0.187154	-0.497378	0.6400
D(MARKETSIZE(-2))	0.131304	0.192196	0.683176	0.5249
D(MARKETSIZE(-3))	0.338488	0.192223	1.760917	0.1386
D(POLITICRISK(-1))	-15860.36	36101.45	-0.439328	0.6788
TOPENNESS	17741.70	11044.37	1.606402	0.1691
D(TOPENNESS(-1))	28083.45	22906.31	1.226014	0.2748
D(TOPENNESS(-2))	23229.15	15871.11	1.463612	0.2032
ECT(-1)	-0.178755	0.124271	1.438431	0.2098
C	1307.420	60823.57	0.021495	0.9837
R-squared	0.999146	Mean dependent var		29062.83
Adjusted R-squared	0.994535	S.D. dependent var		313208.5
S.E. of regression	23154.24	Akaike info criterion		22.74764
Sum squared resid	2.68E+09	Schwarz criterion		24.01741
Log likelihood	-347.3361	F-statistic		216.6813
Durbin-Watson stat	2.388730	Prob(F-statistic)		0.000005

The result in table 3 shows that past foreign investment flows could significantly stimulate current investment inflows. This finding is in line with the finding of Udeaja et al (2008) in their sectoral study of foreign direct inflows in Nigeria.

Our results also reveal that in the long-run, the available natural resources which have been noted to be artificially meager in Nigeria exert negative and significant impact on foreign direct investment. In other words, inadequate natural resources reduce the inflow of FDI. This result corroborates with the findings of Asiedu (2002, 2006) and Dinda (2009) on the effect of natural resources but contrary to the results of Nunnenkamp and Spatz (2003) and Saltz (1992). While fiscal incentives, favorable government policy and infrastructural development are found to be positive and significant function of foreign direct investment. These results are consistent with the findings of Dinda (2009), Asiedu

(2002) and Wheeler and Mody (1992). Market size (at lags 2 and 3) and trade-openness have an increasing (positive) but insignificant effect on FDI. This contradicts the findings of many researchers such as Obadan (1982) Ragazi (1993), Ajayi (2006) and Wafure and Nurudean (2010) who found that market size is of significant effect. The result of our analysis however, corroborates with the findings of Dinda (2009) who contends that the assertion, that the market size is a major determining factor for FDI might be true for other countries but not for Nigeria during 1970 – 2009.

The FDI is positively and significantly related to exchange rate while political risk exerts negative and insignificant effect on FDI. That political risk is negative but not significant in influencing the flow of FDI supports the report of ODI (1997) that in the political unstable countries such as Nigeria and Angola, high returns in the extractive industries seem to compensate for political instability.

The ECM is negative and shows that about 17.9 percent deviation from the long-run equilibrium relationship between FDI and its determinants are corrected. There is therefore empirical evidence that there exist a long-run relationship between FDI and its determinants.

5.0   Conclusion

The study used error correction model to investigate the determinants of foreign direct investment inflow to Nigeria during the period 1970 – 2009. The results show that past foreign investment flows could significantly stimulate current investment inflows. Also, while inadequate natural resources reduce the inflow of FDI, fiscal incentives, favorable government policy, exchange rate and infrastructural

development are found to be positive and significant function of FDI in Nigeria. Market size (at lags 2 and 3) and trade openness are positively signed while political risk is negatively signed. These variables, however impact insignificantly on FDI. In the most recent times not captured in this study, political and social uncertainty are on the increase and could turn significant as to erode the hope of foreign investment inflow in Nigeria if not properly checked.

Thus, it is obvious that fiscal incentives, favorable government policy and infrastructural development are positive predictors of FDI inflows and should be used as policy instruments.

Government should improve on the country's market size through its monetary and fiscal policy so as to stimulate it to impact positively and significantly on FDI. The government should as well finance researches on agricultural sector for the purpose of sourcing raw materials for extractive industries.

The Nigerian economy is mono-cultural (oil dominated) and should be diversified through adequate attention to agricultural sector. Also more conducive investment environment should be created through eliminating political and social unrest/instability in the country. Government should work out means and ways of actualizing this. The positive sign of trade openness suggests the need to intensify trade liberalization policy so as to make openness significant, if the inflow of capital through FDI is considered desirous.

References

Ahmet, N.K. (1960), "The determinants of the inflows of deutsche mark banknotes into the Turkish economy," The Central Bank of the Republic of Turkey discussion paper, No.9618.

Ajayi, S.I. (2003), "The determinants of FDI in Africa: A survey of the evidence". Foreign direct investment in Sub-Saharan Africa: origins, targets, impact and potential, AERC, pp16 – 19.

Anyanwu, J.C. (1998). "An econometric investigation of determinants of foreign direct investment in Nigeria". In investment in the growth process: proceedings of the Nigerian economic society conference 198, pp. 219 -240. Ibadan, Nigeria.

Asiedu, E. (2003), "Foreign direct investment to Africa: The role of government policy, governance and political instability". Working paper. University of Kansas.

Asiedu, E. (2002), On the determinants of foreign direct investment to developing countries: Is Africa different? World development vol.30, No.1, pp. 107-119.

Assanie, N. and Bill, S. (2002), "The quality of FDI: Does it matter for economic growth? http://www.asiapacificesearch.ca/caprn/FDI-_and_economic_growth-CEA-May_2002.

Ayanwale, A.B. (2007), "FDI and Economic Growth: Evidence from Nigeria". AERC Research Paper 165. African Economic Research Consortium, Nairobi.

Bhattacharya, A; Montiel, P.J. and Sharma, S. (1996) Private capital flows to sub-saharan Africa: An overview of trends and determinants, unpublished paper, world bank, Washington DC.

Biersteker, T.J. (1987), Multinational, the state and control of the Nigerian economy. Princeton: Princeton University Press.

Campos, N.F. and Yuko, K. (2003), "Why does FDI go where it goes? New evidence from the transition economics". IMF working paper WP/03/228. International monetary fund, Washington, D.C.

Chakrabarti, A. (2001), The determinants of foreign direct investment sensitivity analyses of cross-country regressions, Kyklos vol. 54,

pp. 89-112.

Dinda, S. (2009), Factors Attracting FDI to Nigeria: An Empirical Investigation. Madras School of Economics, Chennai, India.

Edward, S. (1990), "Capital flows, foreign direct investment, and debt-equity swaps in developing countries". NBER working paper No.3497.

Ekpo, A.H. (1997), "Determinants of foreign direct investment in Nigeria: evidence from time series data," CBN economic and financial review, vol.35, No.1, pp 59-78.

Elijah, O.K. (2006), "Determinants of foreign direct investment in Kenya," Institute African de development Economique et de Planification publication, Dakar.

Fuat, E. and Ekrem, T. (2002), "Locational determinants of determinants of foreign direct investment in an emerging market economy: evidence from turkey," Multinational Business Review, vol.10, No.1.

Goldberg, L.S. and Kolstad, C.D. (1994), "Determinants of foreign direct investment exchange rate volatility and demand uncertainty, NBER working paper 4815.

Harvey, J.T. (1990), "The Determinants of foreign direct investment," journal of post Keynesian economics, 12(2), pp. 260-272.

Ibrahim, W. (2007), Determinants of Foreign Direct Investment in Nigeria: Political Factor Effect Revisited. Department of Economics, Al-Hikmah University, Ilorin.

Jaspersen, F., Aylward, A.H., and Knox, A.D. (2000), "The effect of risk on private investment: Africa compared with other developing countries" In P. Collier and C. Pattillo, eds. Investment and risk in Africa, pp.71-95. New York: St. Martins press.

Lehman, A. (1999), "country risks and the investment activity of U.S.

multinationals in developing countries "IMF/Working paper No. 133. International monetary fund, Washington, D.C.

Louis, N.C. (1998), "Determination of FDI: An error correction specification" Journal of economic and social studies. vol. 40, No.1

Masayuki, H and F. Ivohasina (2005), ''The Determinants of Foreign Direct Investment into Japan,'' Kobe University Economic Review 51

Mody, A. and Srinivasan, K. (1998), "Japanese and United States firms as foreign investors: Do they March to the same tune?" Canadian journal of economics, 31(4): 778-99.

Moore, M.O. (1993), "Determinants of manufacturing direct investments pp. 1980-1988," Weltwirtscaftsliches Archive, 129, pp. 120-137.

Ngowi, H.P. (2001), "Can Africa increase its global share of foreign direct investment (FDI)" West African Review 2(2):1-9.

Nwankwo, A. (2006), The determinants of foreign direct investment inflows (FDI) in Nigeria. 6th Global Conference on Business & Economics.

Obadan, M.I. (1982), Direct foreign investment in Nigeria: An empirical analysis African studies review vol.1.

Odi (1997), Foreign direct investment flows to low-income countries: A review of the evidence. Overseen development institute Brlefing paper vol.3, Sept.

Ogunkola, E.O. & Jerome, A. (2006), "Foreign direct investment in Nigeria; magnitude, direction and prospects". FDI is sub-Saharan Africa. Origin, target, potential and impact. AERC, p.164.

Ragazzi, G. (1973), "Theories of the determinants of foreign direct investment," The IMF staff papers, 20, pp.471-498.

Sachs, J. and Siever, S. (1998), "FDI in Africa". In Africa competitive report, 1998. Geneva: World Economic Forum.

Schneider, F., & Frey, B.S. (1995), Economic and political determinants of foreign direct investment. World Development, 13(2), 161-175.

Singh, H. and Jun, K.W. (1995), "Some new evidence on determinants of foreign direct investment in developing countries". Policy research working paper No.1531, the World Bank, Washington, D.C.

Streeton, P and Lele, S. (1973), Summary of methods and findings of study of private foreign manufacturing investment in six LDCO7 UNCTAD, Geneva May.

Thomas, B. J. (1987), Multinationals, the state and control of the Nigerian economy. Princeton: Princeton University Press.

Tsai, P.L. (1994), Determinants of foreign direct investment and its impact on economic growth. Journal of economic development, vol.19, pp. 137-163.

Udeaja A.E, Udoh .E.and Ebong F.S (2008) Do Determinants of Foreign Direct Investment in Nigeria Differ Across Sectors? An Empirical Assessment. Economic and Financial Review of the Central Bank of Nigeria, Vol.46 (2).

Wafure, O.G. and Nurudeen, A. (2010) Determinants of foreign direct investment in Nigeria: An empirical analysis. Global journal of human social science, vol.10, Issue1: 26-34.

Wheeler, D., & Mody, A. (1992), International investment location Decision. The case of US firms journal of international economics, 33:57-76.

APPENDIX

Table 1: Unit Root Test

Variables	Augmented Dickey fuller Test statistic	Max lay	Order of integration
FDI	-4.126792	1	1
Avalablenr	-3.222888	1	1
Exchangerate	-3.222351	1	1
Fiscincertives	-4.123108	1	1
Govtpolicy	-5.911383	1	1
Infrastructure	-2.989423	1	1
Market size	-3.906769	1	1
Political risk	-4.301163	1	1
Topeness	-6.205653	1	1

Critical values 1% = -36191, 5% = -2.4422, 10% = -2.6092%

Table 2.Cointegration Test

Date: 09/07/11   Time: 21:50
Sample: 1970 2009
Included observations: 39
Test assumption:
No deterministic trend in the data
Series: FDI AVALABLENR EXCHANGERATE FISCINCENTIVES GOVTPOLICY INFRASTRUCTURE
MARKETSIZE POLITICRISK TOPENNESS
Lags interval: No lags

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.832648	249.5060	175.77	187.31	None **
0.803048	179.7873	141.20	152.32	At most 1 **
0.641740	116.4204	109.99	119.80	At most 2 *
0.557115	76.38698	82.49	90.45	At most 3
0.330701	44.62363	59.46	66.52	At most 4
0.305506	28.96416	39.89	45.58	At most 5
0.179826	14.74587	24.31	29.75	At most 6
0.096323	7.014545	12.53	16.31	At most 7
0.075569	3.064489	3.84	6.51	At most 8

^{x}(xx) denotes rejection of the hypothesis at 5% (1%) significance level
L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Table 4 Granger Causality Test

Pairwise Granger Causality Tests
Date: 09/16/11   Time: 05:51
Sample: 1970 2009
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
AVALABLENR does not Granger Cause FDI	38	10.0856	0.00038
FDI does not Granger Cause AVALABLENR		1.88124	0.16838
EXCHANGERATE does not Granger Cause FDI	38	0.77504	0.46889
FDI does not Granger Cause EXCHANGERATE		0.48784	0.61831
FISCINCENTIVES does not Granger Cause FDI	38	4.41364	0.02002
FDI does not Granger Cause FISCINCENTIVES		0.01683	0.98332
GOVTPOLICY does not Granger Cause FDI	38	5.40895	0.00929
FDI does not Granger Cause GOVTPOLICY		0.08323	0.92033
INFRASTRUCTURE does not Granger Cause FDI	38	0.75928	0.47600
FDI does not Granger Cause INFRASTRUCTURE		19.8865	2.2E-06
MARKETSIZE does not Granger Cause FDI	38	2.51399	0.09633
FDI does not Granger Cause MARKETSIZE		0.05802	0.94373
POLITICRISK does not Granger Cause FDI	38	0.13849	0.87118
FDI does not Granger Cause POLITICRISK		2.2E-08	1.00000
TOPENNESS does not Granger Cause FDI	38	5.15993	0.01122
FDI does not Granger Cause TOPENNESS		0.42719	0.65590
EXCHANGERATE does not Granger Cause AVALABLENR	38	0.12645	0.88164
AVALABLENR does not Granger Cause EXCHANGERATE		1.36200	0.27017
FISCINCENTIVES does not Granger Cause AVALABLENR	38	0.03241	0.96814
AVALABLENR does not Granger Cause FISCINCENTIVES		0.15332	0.85846
GOVTPOLICY does not Granger Cause AVALABLENR	38	1.25419	0.29855
AVALABLENR does not Granger Cause GOVTPOLICY		1.93444	0.16054
INFRASTRUCTURE does not Granger Cause AVALABLENR	38	8.00619	0.00146
AVALABLENR does not Granger Cause INFRASTRUCTURE		14.9635	2.4E-05
MARKETSIZE does not Granger Cause AVALABLENR	38	2.64133	0.08629
AVALABLENR does not Granger Cause MARKETSIZE		0.70768	0.50011
POLITICRISK does not Granger Cause AVALABLENR	38	0.29967	0.74306
AVALABLENR does not Granger Cause POLITICRISK		2.5E-05	0.99998
TOPENNESS does not Granger Cause	38	0.51284	0.60349

Null Hypothesis	Obs	F-Statistic	Prob.
AVALABLENR			
AVALABLENR does not Granger Cause TOPENNESS		2.55968	0.09259
FISCINCENTIVES does not Granger Cause EXCHANGERATE	38	1.82051	0.17783
EXCHANGERATE does not Granger Cause FISCINCENTIVES		0.73282	0.48821
GOVTPOLICY does not Granger Cause EXCHANGERATE	38	1.59229	0.21870
EXCHANGERATE does not Granger Cause GOVTPOLICY		1.30030	0.28604
INFRASTRUCTURE does not Granger Cause EXCHANGERATE	38	1.57400	0.22238
EXCHANGERATE does not Granger Cause INFRASTRUCTURE		0.50734	0.60671
MARKETSIZE does not Granger Cause EXCHANGERATE	38	0.24957	0.78060
EXCHANGERATE does not Granger Cause MARKETSIZE		3.18785	0.05423
POLITICRISK does not Granger Cause EXCHANGERATE	38	0.26105	0.77181
EXCHANGERATE does not Granger Cause POLITICRISK		0.01219	0.98789
TOPENNESS does not Granger Cause EXCHANGERATE	38	0.19723	0.82196
EXCHANGERATE does not Granger Cause TOPENNESS		0.27953	0.75791
GOVTPOLICY does not Granger Cause FISCINCENTIVES	38	0.37520	0.69004
FISCINCENTIVES does not Granger Cause GOVTPOLICY		6.01166	0.00594
INFRASTRUCTURE does not Granger Cause FISCINCENTIVES	38	0.19487	0.82388
FISCINCENTIVES does not Granger Cause INFRASTRUCTURE		0.07718	0.92589
MARKETSIZE does not Granger Cause FISCINCENTIVES	38	0.05809	0.94366
FISCINCENTIVES does not Granger Cause MARKETSIZE		0.60672	0.55111
POLITICRISK does not Granger Cause FISCINCENTIVES	38	0.19310	0.82532
FISCINCENTIVES does not Granger Cause POLITICRISK		0.00000	1.00000
TOPENNESS does not Granger Cause FISCINCENTIVES	38	0.15333	0.85846
FISCINCENTIVES does not Granger Cause TOPENNESS		0.42037	0.66027
INFRASTRUCTURE does not Granger Cause GOVTPOLICY	38	1.09268	0.34714
GOVTPOLICY does not Granger Cause INFRASTRUCTURE		0.71176	0.49816
MARKETSIZE does not Granger Cause GOVTPOLICY	38	4.90010	0.01370
GOVTPOLICY does not Granger Cause MARKETSIZE		0.45629	0.63757
POLITICRISK does not Granger Cause GOVTPOLICY	38	2.65753	0.08509
GOVTPOLICY does not Granger Cause		0.18029	0.83585

POLITICRISK

TOPENNESS does not Granger Cause GOVTPOLICY	38	0.13256	0.87631
GOVTPOLICY does not Granger Cause TOPENNESS		1.13839	0.33259
MARKETSIZE does not Granger Cause INFRASTRUCTURE	38	2.07154	0.14207
INFRASTRUCTURE does not Granger Cause MARKETSIZE		1.18393	0.31874
POLITICRISK does not Granger Cause INFRASTRUCTURE	38	0.05283	0.94863
INFRASTRUCTURE does not Granger Cause POLITICRISK		0.02675	0.97363
TOPENNESS does not Granger Cause INFRASTRUCTURE	38	1.30673	0.28434
INFRASTRUCTURE does not Granger Cause TOPENNESS		0.71664	0.49583
POLITICRISK does not Granger Cause MARKETSIZE	38	75.4110	4.9E-13
MARKETSIZE does not Granger Cause POLITICRISK		0.00785	0.99218
TOPENNESS does not Granger Cause MARKETSIZE	38	0.33079	0.72071
MARKETSIZE does not Granger Cause TOPENNESS		1.40129	0.26055
TOPENNESS does not Granger Cause POLITICRISK	38	1.09673	0.34582
POLITICRISK does not Granger Cause TOPENNESS		1.04378	0.36346