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DETERMINANTS OF FOREIGN DIRECT INVESTMENT (FDI) IN NIGERIA: AN EMPIRICAL INVESTIGATION

BY

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This paper examines, empirically, the determinants of foreign direct investment (FDI) in Nigeria. The results indicate that exchange rate, government capital investment in infrastructure and credit to the domestic economy are some of the main factors that influence FDI flow to Nigeria. In particular, it shows that the ratio of external debt to GDP (Debt/GDP) was an important determinant of the flow of foreign investment. FDI was also observed to be sensitive to domestic interest rate and real per capita income. The study also highlights the need to maintain political stability in order to attract FDI.

1. INTRODUCTION

The need to accelerate the pace of economic growth and development by many countries, especially the Less Developed Countries (LDCs), have propelled them to make deliberate efforts to attract Foreign Direct Investments (FDI). This is because most LDC's economies (including Nigeria) are characterized by in adequate domestic savings, excessive imports relative to exports as well as high level of external debts. They therefore require external capital to finance their current account deficits and to accelerate the pace of economic growth and development through increased production activities. In this regard, FDI augments domestic savings in bridging the savings investment gap.

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The efforts made by LDC's are geared toward improving the general investment climate through the adoption and implementation of foreign investment-friendly policies and programmes such as tax incentives, export promotion and macroeconomic adjustments. Significantly, the drive for foreign investment derives from the various benefits it confers on the host country. These benefits include addition of new capital, technology, improved management and market access. FDI has also been acknowledged as a potent source of improving efficiency of the productive sectors through competition, stimulation of economic progress, creation of jobs and fostering growth in the host economies. However, in spite of the genuine desire and efforts by the LDCs to attract the much needed foreign investment, a number of factors render them unattractive. Some of the factors include heavy debt burden which has eroded confidence in developing countries as well as low credit worthiness. Others are recession and persistent macroeconomic and political instability which have further worsened the perception of foreign investors.

A proper understanding of the determinants of FDI inflow therefore, would guide policy choices and facilitate the institution and implementation of appropriate measures to attract the inflow of the desired quantum of investment. This paper is an attempt in this regard, as it aims to bring to the fore variables that influence the flow of FDI to Nigeria. The rest of the paper is divided into six sections. Section II reviews the framework and trend of foreign investment inflow into Nigeria. The theoretical framework and review of literature on FDI flows is undertaken in section III, while section IV contains an econometric model of determinants of FDI flows to

Nigeria. Section V presents the results of the empirical analysis of the model, while section VI concludes the paper with some policy recommendations.

SECTION II

APPRAISAL OF POLICIES AND INCENTIVES FOR INFLOW OF FDI

In recognition of its importance and role in the nation's economic growth process, the government has put in place various policies and incentives to attract FDI to Nigeria. For example, to augment the domestic shortfall of capital resources for the realisation of sustainable level of growth and development, the government expressed her readiness in the 1997 budget, to enter into investment protection, agreements with foreign governments or private organisations wishing to invest in Nigeria, as well as discuss additional incentives with prospective investors. In this connection, the government inaugurated, the Nigerian Investment Promotion Commission (NIPC), which replaced the Industrial Development Coordination Committee (IDCC), as a one-stop agency that would facilitate the inflow of FDI. The IDCC was established in 1988 for the purpose of fostering a conducive regulatory environment and serve as the first port of call to a potential investor. The Nigerian Investment Promotion Decree No. 16 of 1995 reflected the new enhanced liberal foreign investment policy of the government. There were also tax related incentive measures such as pioneer status, tax relief for Research and Development which provides for a graduated amount of tax allowance to be deducted from profit; company income tax which has been amended to encourage potential and existing

investors; tax free dividends as well as tax relief for investments in economically disadvantaged local government area.

The Debt Conversion Programme (DCP) was also introduced as a major vehicle for the inflow of foreign investment. The privatisation and commercialisation programme in which government disengage from activities that could be effectively undertaken by private economic agents was among others meant to encourage the inflow of foreign investments. Similarly, the establishment of the Export Processing Zone at Calabar was aimed at attracting more foreign investments through provision of infrastructural facilities and elimination of bureacratic bottlenecks. While, the repeal of the Nigerian Enterprises Promotion Decree (NEPD) of 1972, and the Exchange Control Act of 1962, were aimed at making the investment climate more conducive for foreign investors.

However, these measures are observed not to have yielded the desired results in terms of attracting FDI inflows. For instance, aggregate FDI inflow into Nigeria through existing foreign/jointly owned companies during the 1970s averaged 562.3 million yearly in nominal terms. As a proportion of the gross domestic product (GDP), it accounted for 3.6 per cent during the period. Before the introduction of the Structural Adjustment Programmes (SAP) in 1986, total foreign investment inflow for 1980s averaged 8,178.2 million annually and represented 4.3 per cent of GDP. During the period 1987 - 1990, average foreign investment inflow rose to 8,183.6 million, representing 3.0 per cent of GDP, while the average inflow was 15,402.5 million or 1.4 per cent of GDP during 1991 - 1998.

Specifically, Nigeria has not benefited significantly from this vital resource during the last two decades in spite of its high potential for the attraction of foreign investments because some aspects in her investment policies have not been generally investor-friendly.

SECTION III

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Theoretically, foreign direct investment is expected to be influenced by the size of the market for the products of such investments. Foreign direct investment is also expected to increase where there exists higher profit rates so as to follow the direction of marginal productivity of capital. Availability of relevant raw materials is also expected to catalyse the inflow of foreign direct investment, while the existence of protectionist policies is also expected to attract foreign investments for locally produced goods. Other factors which are likely to influence the direction and magnitude of FDI include domestic investment, low labour and production costs; political stability and enduring investment climate; international product differentials as well as cordial supplier relationships. Additionally, favourable regulatory environment as well as functional infrastructural facilities are expected to be pull-factors for FDI inflow. These above mentioned factors or determinants of FDI have been succinctly documented in numerous research works. In general, the results of most of these previous studies show that the principal determinants of FDI are related to the economic and political nature of the host country's economies.

For the developing economies, Pfeffermann and Madarassy (1992) identified the major determinants of foreign direct investment to include; the size of the domestic market, inflation, exchange rate volatility, interest rate and macroeconomic policies. They found that the size of the domestic market and capacity utilization are positively related to direct foreign investment, while inflation and volatile exchange rates have negative effects on foreign investment. High and rising inflation rates heightens fears of rising costs of imported capital goods and inputs, while an unstable exchange rate also creates foreign exchange risk and uncertain investment climate.

Several researchers have variously explored the importance of the size of domestic market on the inflow of FDI. They used tested proxies of market demand levels and market growth rates of host economies to see if there was a significant correlation between these proxies. For example, Dunning (1973) indicated that the dominant influences on FDI are the growth and size of the host country' s market while Root and Ahmed (1978) as well as Schneider and Frey (1973), also found a statistical relationship between FDI and market demand as measured by per capita GDP (GNP) of some developing countries. In addition to Pfeffermann and Madarassy (1962), the statistically significant relationship between inflation rates and Foreign Direct Investment (FDI) have further been established by Dornbusch and Reynoso (1989) who stated that it affected private investment rates in developing countries where inflation is less often correlated with rise in economic output than in industrial countries. This is because high rates of inflation adversely affect private investment by increasing the risk of longer term investment projects, reducing the average

maturity of commercial lending (credit), and distorting the information content of relative prices. Obadan (1994), also noted that high inflation rate reduces international competitiveness of exports, foreign exchange earnings and puts pressure on current account and exchange rates. In short, high inflation rates may be considered as indicator of macroeconomic instability and a country's inability to control macroeconomic policy, both of which contribute to an adverse investment climate.

The influence of political stability or conversely political risk on FDI flows have also been tested. Early studies of foreign investment decision process indicated that political instability was one of the main factors investors cited in explaining decision for not investing in a particular country. For instance, Bas and Aharoni (1963) concluded from their research works that next to market size and growth, political instability was the most dominant influence in investment flows. Root and Ahmed (1978) also found that political stability was a significant variable in direct investment flows. The importance of government investment, the change in bank credit and capital inflow to the private sector in determining private investment was confirmed by Wai and Wong (1982).

Osuagwu (1982) found that the determinants of investment demand in Nigeria from 1960-1975 were the expected rate of returns, the supply of funds; absorptive capacity and government policies. Obadan (1982) also confirmed the importance of market size, trade policies and raw materials as important determinants of foreign direct investment in Nigeria. This was further corroborated by Anyanwu's (1998) study which additionally highlighted the significance of domestic investment,

openness of the economy and indigenisation policy. Also, the rising bank lending rate profile in Nigeria during the 1987-90 period was noted by Ajakaiye (1995) to have discouraged productive investments. This is because lower lending rate in the host economy is expected to have an overall effect of higher internal rate of return (IRR) on investment, and boost investment inflow. Mckinnon and Shaw (1973), on the other hand hypothesised that private investors in LDCs must accumulate money balances before undertaking investment projects because of limited access to credit and equity markets in the LDCs. But Aremu (1997) observed that the host country of FDI make credit available to investors in the form of subsidized loans, loan guarantees as well as guaranteed export credits. These credits are provided directly to foreign investors for their operations particularly at defraying some inevitable costs which invariably have an immediate impact on cash flow and liquidity.

The importance of exchange rate on inflow of foreign private investment has been traced by Obadan (1994), who noted that its importance as the centre piece of the investment environment derives from the argument that a sustained exchange rate misalignment in terms of overvaluation or undervaluation, is a major source of macro-economic disequilibria which spells danger for investment. Consequently, an over valued exchange rate will discourage export and negatively affect the foreign private investment environment.

The presence of large external debt burden according to Borensztein (1989) and Froot and Krugman (1990) also plays a vital role in reducing investment activities. This is because the higher debt service payments associated with a large external debt reduce the funds available for investment. Secondly, the existence of a

large debt overhang in the form of high ratio of external debt to GDP, can reduce the incentives for investment, because much of the returns from investments must be used to repay existing debt. Thirdly, if substantial, external debt leads to difficulties in meeting debt-service obligation, which may strain relations with external creditors and make it harder or more costly to finance or attract private investment. The work of Essien and Onwioduokit (1999) finally confirmed that there is a long run equilibrium relationship between FDI flow to Nigeria and variables such as credit rating, debt service, interest rate differential, nominal effective exchange rate and real income.

The present study, apart from adopting the existing ones, incorporates government capital expenditure to capture infrastructural development and a proxy for political stability. It covers a period (1970 - 1998) which is considered to be large enough to test for stationarity and cointegration of the variables.

SECTION IV

MODEL SPECIFICATION AND ESTIMATION PROCEDURE

Contrary to the open policies adopted towards foreign investments in East Asian industrializing countries since the sixties, Nigeria, in the seventies and eighties, introduced a regulatory framework and institutional arrangements which had the unintended effect of retarding the inflow of foreign investments. In addition, there were other factors such as the debilitating external debt burden as well as some social, economic and political developments which militated against the inflow of foreign direct investments. These issues therefore become very crucial in specifying the determinants of FDI flows to Nigeria.

Generally, various approaches have been used in the literature in the modeling and estimation of investment functions depending on the objective at hand. These approaches are variants of the approach used by Tun and Wong (1988) and is adapted for this study. The model with expected signs is specified as follows:

$$FDI = f(DPCI, HGI, DIR, DEXR, DIF, DCPS, EDR, POLS) \quad \text{.....}$$
$$(+)\quad (+)\quad (+)\quad (+)\quad (-)\quad (+)\quad (-)\quad (+)$$

where:

FDI	=	Inflow of Foreign Direct Investment
FPCI	=	Domestic per Capital Income
HGI	=	Host Government Investment
DIR	=	Domestic Interest Rate
DEXR	=	Domestic Exchange Rate
DIF	=	Domestic Inflation Rate
DCPS	=	Domestic Credit to Private Sector
EDR	=	External Debt Ratio
POLS	=	Domestic Political Climate (Dummy Variable)

The estimation period is from 1970-1998. The data used in this study are from the Statistical Bulletin of the CBN (1998), CBN Annual Report (1998) and the International Financial Statistics Year Book of the IMF (1996). The ordinary least squares technique (OLS) estimation method was applied using computer software, microfit 286.

IV.1 Stationarity and Cointegration

For a guide to an appropriate specification of the regression equation, the characteristics of the time series data used for estimation of the model were examined to avoid spurious regression which results from the regression of two or more non-stationary series. Statistical properties of any regression analysis using non-stationary time series has been considered as being spurious" (Philips, 1987)

The presence of cointegration means that long-run equilibrium relationship exists among the non-stationary variables. Granger and Newbold, (1977) and Granger and Engle, (1985) have all shown that the existence of cointegration is a sufficient condition for the formulation of a model that allows for the incorporation of an error correction term (ECT). The inclusion of the ECT in a model ensures that the long-run relationship is preserved.

To test for stationarity and cointegration, the study adopted the Augmented Dickey-fuller (ADF) test, and the Sargan-Bhargavan Durbin-Watson (SBDW) test.

SECTION V

INTERPRETATION OF RESULTS

The results of the stationarity tests are presented in table 1 and it shows that all data points used were stationary.

The result from the regression of the inflow of FDI against the regressors, is as shown in Table 2. The result shows that exchange rate, government domestic investment, credit to private sector, external debt and political stability conformed with the a priori expectation while inflation rate, domestic interest rate, and

per capital income failed to conform to a priori expectation. The DW - statistic of 1.88 indicates the absence of serial correlation between FDI and the independent variables.

The exchange rate is directly correlated with FDI inflow in line with a priori expectation of a depreciating exchange rate. It was statistically significant.

The positive government capital investment shows the importance of the existence of basic infrastructure to attracting foreign investment inflow. Availability of sound and functional infrastructural facilities entice foreign investors into an economy.

The External Debt ratio (Debt/GDP) reflects the apriori expectation that a debt ridden country will not be able to attract foreign investors; i.e. the higher the Debt-GDP ratio the lower the foreign investment in the country. The result showed that when the external debt ratio rises by one per cent, the inflow of FDI will reduce by about 15 per cent.

Credit to the private sector is positive because since a foreign investor will be operating in the domestic environment and therefore benefit from such credits. This implies therefore that a favourable credit environment would result in higher inflow of FDI.

The period of relative stable political situation in the country as compared with coup years has a positive effect on the inflow of FDI. That is, the more stable the political climate in a country, the more inflow of FDI it might attract as this would create confidence in the business community. However, the relationship is satistically insignificant

Inflation failed to conform to apriori expectation though the result shows a statistically significant relationship with FDI flows.

The Real Per Capita Income is negative as against the positive apriori expectation, though statistically significant. This may be due to the fact that the PCI in the country is not being properly calculated especially with the contentious population figure used in the computation. Also, the fact remains that there are lots of income from several informal activities which enhance the purchasing power of the populace but which are not captured in the GDP used in computing Per Capita Income.

The coefficient of interest rate was also expected to be positive because a high interest is expected to induce savings and hence make more fund available for investment in the country. But from the result, it is negative probably due to the fact that the interest rate (especially the CBN discount rate) is tied to the lending rate and this means that a high interest rate will lead to a fall in investment and vice-versa. The GDP for the Industrial Countries (XGDP) who are potential investors was expected to be negative as shown in the result of the regression. The decline in per capita income in the industrial countries is expected to induce investors to look for better investment avenues in other countries as this is indicative of depression in economic activities in these countries.

V. RECOMMENDATIONS AND CONCLUSIONS

A. Recommendations

From the results of the empirical study carried out, the following recommendations are proposed to encourage and improve the inflow of foreign private investment. There is need to put in place appropriate policies and strategies that will ensure the maintenance of stable foreign exchange rate as this has been shown to be a very important factor influencing the inflow of FDI. Government should improve its investment especially on basic infrastructure such as road, energy, water supply, telecommunications, security etc. The provision of adequate functional basic infrastructure will go a long way in reducing the cost of operating business in Nigeria and encourage foreign investment inflow.

The issue of the country's debt problem should also be adequately addressed as it affects the country's credit worthiness and discourages foreign investments. Further efforts should therefore be geared towards reducing the debt burden in such a manner that it would boost the credit image of the country while not impairing the provision of financial resources for the improvement of infrastructural facilities.

B. Conclusions

The major factors which influence foreign direct investment inflow into Nigeria for the period 1970-1998 were examined. The preliminary empirical results show that exchange rate, government capital investment, domestic credit to the economy, rate of inflation and real per capita income are significant factors influencing foreign direct investment in Nigeria. However, domestic interest rate and per capita income are not properly signed though statistically significant, on the

other hand,. inflation rate was statistically insignificant though not properly signed. Furthermore, available data used in computing per capita income probably led to its non-conformity with a priori expectation. The political stability variable was included to capture uncertainty in the economic environment. Though not statistically significant, it has positive impact on foreign investment.

TABLE 1

TESTING THE ORDER OF INTEGRATION OR UNIT ROOT TEST

VARIABLES	DF/1		ADF/2-t statistics with constant		
RFPI	-3.284(-3.5943)		-2.53231(-3.60 I		--I(I)
	-3.134	"	-2.4262	"	--I(1)
DIR	-1.7979	"	-2.4706	"	--I(1)
EDR	-3.7455	"	-4.2744	"	--I(0)
XGDP	-1.258	"	-1.9515	"	--I(1)
RPCR	-2.2523	"	-2.3348	"	--I(1)
RGDIV	-2.0731	"	-2.1812	"	--I(1)
REXR	-3.7331	"	-4.6883	"	--I(0)
INFR	-2.143	"	-2.5074	"	--I(1)
RPCI					

First Differences

VARIABLES	DF/1		ADF/2- t statistics with constants	
DRFPI	-7.0886(-3.6027)		-4.6596 (-3.6119)	
DDIR	-6.6797	"	-5.1227	"
DEDR	-42245	"	-3.0114	"
DXGDP	-5.3718	"	-5.2091	"
DRPCR	-3.8157	"	-4.9413	"
DRGDIV	-6.1862	"	-3.3833	"
DREXR	-4.2262	"	-4.0580	"
DINFR	-4.6696	"	-4.8240	"
DWFR	-4.5907	"	-5.2747	"
DRPCI	-4.8586	"	-3.2094	"

Note:

1/Dickey -Fuller test statistics

2/Augmented Dickey - Fuller test statistics

TABLE 2

ORDINARY LEAST SQUARES ESTIMATION

Dependent Variables is DRFDI
27 Observation used for sentimation from 1970 to 1998

Regressor	Coefficient	Standard Error	T-Ratio(prob.)
E	-2.388	2.085	1.1453(270)
DREXR	-3.2791	1.0175	3.227(0.006)*
DDRGDIV	-0.10985	0.033664	3.2633(0.005)*
DDEDR	-0.15191	0.091236	-1.6651(.117)
DDCPS	0.2694	0.094276	2.8575(0.012)*
DINFR	0.25319	0.10326	2.45119(0.027)*
DDIR	-0.11753	0.4936	.23830(0.815)
POLS	3.3152	3.6866	0.89927(0.383)
DRPCI	-2.4782	0.91065	-2.7214(0.016)*
DXGDP	-2.6426	1.0451	-1.5717(0.137)

R- Square	0.81342	F- satistics; F(9,17)	7.2662(.000)
R- Bar - Square	0.70148	S.E of Regression	7.1929
Residual sum of Squre	776.0744	Mean of Dependent variable	0.19913
S.D. of Dependent	1.3164	Maximum of log likelihood	-78.4156
DW- Satistics	1.8854		

* Significant t- ratio at 5% level

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