MACRO-ECONOMIC ENVIRONMENT AND FOREIGN DIRECT INVESTMENT IN NIGERIA

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Abstract
The study investigated the role of macroeconomic environment in FDI inflows in Nigeria and found a joint significant effect of all variables chosen as proxies for the macroeconomy.A linear equation and F test were used. Most core proxies were individually significant, exhibiting the expected signs except growth of the economy which proved to be not significant, as well as current account balance which showed a negative relationship. We recommend a highly co-ordinated and focused development plan implementation. In particular, we recommend priority attention to infrastructural development and security challenges as well as an overhaul of training facilities in the country.

Keywords: macroeconomic environment; fdi, foreign investment, Nigeria

Introduction

The granting of special incentives to attract Foreign Direct Investments (FDIs), according to Danja (2012), is based on the belief that they bridge the 'idea gaps'. This facilitates the transfer of technology as well as the urgently needed capital for economic development. FDIs do, however, benefit host economies in other ways, whether developed or developing. It is no wonder that FDIs abound in developed economies, and are much sought-after by the underdeveloped. The main thing is the state of the 'pull' factor, the pre-conditions for their locating.

Notwithstanding Nigeria's large and virile population that has created a vast potential market for a wide range of industrial products, she has not significantly attracted foreign direct investment. Much of the foreign investments received thus far are in extractive industries, specifically in oil and gas sector. This can be improved upon considering the aforementioned potential and the poor state of investments in practically all other sectors, each of which can be as lucrative as oil, and each of which already constitutes the main stay of one economy or the other around the world. Plausible areas in Nigeria include tourism (in view of the abundant heritage), agriculture (in view of the lavish land and water resources), manufacture (in view of the teeming, modernizing population), etc.

In the push/pull categorization of forces driving foreign investments, it is obvious that little scope is open to the domestic economy to influence the external or push aspect. This is even more so as in the world setting the Nigerian economy can only be regarded as a small open economy, a price taker of sorts. The domain of competence of the nation is thus in the pull aspect, meaning the domestic conditions that are capable of attracting and anchoring foreign inflows.

A number of determining factors have been individually and collectively investigated, with a view to establishing what roles they play in attracting foreign investment. The aim had always been to optimize their contribution through policy action, thereby improving the flow and diversity of foreign investments. These factors include exchange rate, investment climate, human capital, external balance and so on. Significant improvements have, however, not resulted. This paper therefore examines the role of the macroeconomic environment, beyond the concept of investment climate, since this serves as the platform, the attracting force and the anchorage for foreign investment. The macroeconomic environment also shapes the future path of all investment, whether domestic or foreign. This establishes its role as crucial. The rest of the paper is organized as follows: section 2 examines related literature while section 3 outlines the methods of analysis. Section 4 presents and discusses results and section 5 concludes.

Brief review of related literature

In the so-called eclectic theory of Foreign Direct Investment, countries that have locational advantage attract more FDIs. Dunning (1988) opines that location specific advantages comprise of any characteristics (economics, institutional and political) that make a country attractive for foreign Direct Investment. These include large domestic market, availability of natural resources, an educated labour force, good intrastate low labour cost, good institutions and political stability. Wheeler and Mody (1992), Morisset (2000) pointed out that good infrastructure increases the productivity of investment and therefore stimulates FDI flows. A study by Noorzoy (1979) showed a positive relationship between FDI and human capital in the host country.

Furthermore, as pointed out by eclectic theory, ceteris paribus, countries that are more endowed with natural resources would receive more FDI; also, macroeconomic-environment instability should be inversely related to FDI. Asiedu (2005) and Noorzoy (1979) discussed the concept of openness to FDI, expressing the view that openness to FDI is one condition that attracts more foreign direct investment; thus a positive relationship between trade volume and foreign direct investment implies that countries that wish to attract more foreign direct investment should increase trade.

The stability of macroeconomic variables such as low level of inflation, little external debt, stable currency, better GDP rate are likely to encourage FDI inflow in any country. These are lacking in most developing countries and are not unlikely not to have impeded inflow of FDI in the region. Serven (2002) shows that exchange rate uncertainty/volatility, discourages private investment into developing countries.

Ayanwale (2007) employs an augmented growth model via the ordinary least square and the 2SLS methods to ascertain the relationship between FDI, its components and economic growth. His results suggest that the determinants of FDI in Nigeria are market size, infrastructure development and stable macroeconomic policy. Openness to trade and available human capital are, however, not I inducing but FDI was found to contribute to economic growth in Nigeria.

In the study of Omankhanlen (2011) inflation was found not to have any major effect on the inflow of FDI into the country. But exchange rate was found to have major effect on FDI inflow into the country. In addition FDI contributed to Balance of payment position through Current account balance. While Gross fixed capital formation is inelastic to Balance on current account.

The empirical findings of Egwaikhide (2012) reveals that the impact of FDI disaggregated into several components such as agriculture, mining, manufacturing, telecommunication and petroleum sectors are very little with the exception of the telecom sector which has a promising future for the economy especially in the long run. He also finds that the state of the country's infrastructures has, to a larger extent, reduced FDI inflows in Nigeria. He concludes that Nigeria is yet to fully reap the benefits of FDI, as its impact on growth at the moment is very little.

Otto and Ukpere (2014) in the result of the model estimation suggest that Foreign Direct Investments and the Exchange rate positively impact on the real Gross Domestic Product in Nigeria. The ordinary least squares regression results of the linear model show that the exchange rate and foreign direct investment can explain 79.88% of the changes in Gross Domestic Product in Nigeria.

Research Method

We regress FDI on a set of chosen proxies of the macro economy, namely price level, exchange rate, growth rate and external balance. Various diagnostic tests were conducted, directed at the time series property of the data, normality of residuals, autocorrelation, as well as long run relationships between the variables. The following equation was estimated thereafter:

$$lnfdi = \beta_1 + \beta_2 lninf + \beta_3 lnreer + \beta_4 lngdpg + \beta_5 lncagdp + \beta_6 lngdppc + \beta_7 top + \Theta$$

Where ln = natural log; fdi = foreign direct investment; inf = inflation rate; reer = real effective exchange rate; gdppc = gross domestic product per capita; gdpg = gross domestic product growth rate; cagdp = current account balance as a ratio of GDP; Θ = stochastic error term; while β_i = parameters to be estimated.

As control measures we introduce income per head (real GDP per capita) which indicates some important market characteristics; also trade openness which relates to market access both inward and outward.

While the individual effect of each explanatory variable is important for policy action, our interest here is the state of the macro economy and its possible influence on foreign direct investment. We therefore apply the F test for this purpose, while also not ignoring individual effects using the usual t test. A priori, our expectation from individual variables is as follows $inf = -ve; reer = -ve; gdpg = +ve; cagdp = +ve; gdppc = +ve \text{ and } top = +ve$

Data were obtained from World Bank's World Development Indicators as well as Central Bank of Nigeria's Statistical Bulletin. FDI net inflow normalized with GDP was used, while real effective exchange rate, GDP per capita and GDP deflator were all in 2005 US dollars. Current account balance was used to represent

external position as is commonly used in the literature to show how an economy stands with respect to the funding of its domestic activities. This was also normalized with GDP.

4. Results and Discussion

Table 1: OLS regression result

Dependent Variable: LNFDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNINF	0.019349	0.104169	0.185750	0.8541
LNREER	-0.569626	0.224929	-2.532474	0.0177
LNGDPG	0.173052	0.199786	0.866186	0.3943
LNCAGDP	0.015329	0.130199	0.117731	0.9072
LNGDPPC	0.261458	0.721913	0.362174	0.7201
LNTOP	0.232373	0.462637	0.502279	0.6197
C	0.560919	4.058524	0.138208	0.8911
R-squared	0.576409	Mean dependent var		0.979168
Adjusted R-squared	0.478657	S.D. dependent var		0.680756
S.E. of regression	0.491534	Akaike info criterion		1.603260
Sum squared resid	6.281747	Schwarz criterion		1.920701
Log likelihood	-19.45379	F-statistic		5.896651
Durbin-Watson stat	2.023229	Prob(F-statistic)		0.000547

JOHANSEN CO-INTEGRATION ESTIMATES

Table 2

Dependent Variable: lnfdi

variable	Coefficient	s.e.	t-stat
Lninf	-0.210446	0.08691	-2.4214*
Lnreer	-1.399382	0.15722	-8.9007*
Lngdpg	0.242761	0.87072	0.2788
Lncagdp	-0.805640	0.10921	-7.3769*
Lngdppc	0.369953	0.38958	0.9496
Lntop	-1.348570	0.28217	-4.7792*

*indicates significance at 5% level

All variables were found to be stationary. While *lngdpg* and *lncagdp* were stationary at level and at 1% level of significance, lninf was equally stationary at level but only at 10% significance level. However all variables were stationary at first difference and at 1% significance level (Appendix 1). At the value of 2.02, Durbin-Watson statistic (d) indicated no evidence of autocorrelation, whether negative or positive. Breusch-Godfrey Serial correlation LM test corroborated the correlation result with F test value of 0.423962 and Prob(F stat) equal to 0.65925. Jarque-Bera Residual test showed that the residuals were normally distributed (J.B.=1.097819 & Prob.=0.577579). R^2 of 57% was considered satisfactory (Table 1). Johansen co-integration test showed a stable long run relationship and 3 possible co integrating equations (Appendix 2). Long run parameter estimates were accordingly extracted (Table 2).

Using the F test as proposed, chosen proxies of the macroeconomy were found to be jointly and highly significant. This result accords with expectation. It is the joint effect of the many aspects of the macroeconomy, somewhat beyond the concept of investment climate, which impinges significantly on FDI inflow, and none may be singled out for attention at the expense of the other, however important such may be. This outcome underscores the need for holistic economic framework of action, and for sequencing and policy co-ordination in economic programmes.

As expected, all core proxies of the macroeconomic environment were individually significant in the long run (except growth of the economy). The external balance proxy, (current account balance normalized with GDP) while significant, showed a negative sign. This is connected with the 'uphill' capital flow phenomenon. Trade openness, a control variable, showed a negative sign within that framework, contrary to theoretical expectation, providing further indication of the ambiguous effect of trade openness on the nation's economic health. While exhibiting the expected sign, the second control variable and market indicator, GDP per capita, was not significant.

Conclusion
The study investigated the role of macroeconomic environment on FDI inflows in Nigeria and found a joint significant effect of proxies chosen to represent the macroeconomy, using the F test. Most core proxies were individually significant, exhibiting their expected signs except growth of the economy which proved to be not significant, and current account balance which showed a negative sign.

Recommendation
The paper recommends a highly co-ordinated and focused development plan implementation. In particular, we recommend that infrastructural facilities such as electricity, roads, and water supply which are highly needed to attract FDIs should receive priority attention. Insecurity has been one of the main challenges of foreign investment and government should deal decisively with situations such as the insurgency in the North East and South South zones in the country. An overhaul of training facilities should be carried out to emphasize actual manpower needs of the nation rather emphasis on paper qualifications.

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