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Effect of Foreign Direct Investment and Stock Market Development on Economic Growth in Nigeria (1980-2009)

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Abstract

This paper investigates the impact of Foreign Direct Investment (FDI) and stock market development on growth in Nigeria, for the period 1980-2009. The paper is imperative for policy makers to determine the trend of foreign direct investment and stock market development as well as the exert relationship that exists among foreign direct investment, stock market development and economic growth in Nigeria. The paper employs econometric techniques such as Unit Root test, Cointegration and Error Correction Mechanism. The results show that both foreign direct investment, its lagged and lagged stock market development have small, and a statistically significant effect on economic growth. The results seem to support the argument that extractive FDI and stock market development were growth enhancing. But the trends results show that both FDI and stock market development have cyclical movement. Finally, the results show that lagged exchange rate has positive effect on growth. These findings suggest that exchange rate appreciation enhance growth in Nigeria and there is need for more investment in these markets.

Keywords: FDI; Stock Market Development; Economic Growth; Error Correction Mechanism; Cointegration and Unit Root Test

1. Introduction

Foreign Direct Investment (FDI) is that investment which gives foreign owners control over the behavior of firms in which the investment is made. One of the key motives for FDI is to globalize production and competition. A second reason is to move some production to more profitable locations. Firms in advanced countries have moved much of their labor-intensive production to developing nations where wages are lower. It is doubtful that many (or any) of today's poor countries could achieve sustained, rapid growth paths without a substantial amount of FDI brought in by foreign owned transnational. Without such FDI, both the transfer of technology and foreign networking would be difficult to achieve.

Financial markets, and especially stock markets, have grown considerably in developed and developing countries over the last two decades this is as a result of rapid financial and political transformation. To increase their share of FDI flows, most of the countries easy restrictions on FDI, strengthened macro stability, privatization of state-owned enterprises, domestic financial reforms, capital account liberalization, tax incentives and subsidies have been instituted. For many emerging countries, the best policy will involve continuing the establishment of sound fundamentals and attracting FDI, but not necessarily the trading or even listing of securities locally. In addition, stock markets have been established to intermediate funds towards investment projects.

During the 1990s, the composition of capital flows changed dramatically, with bank lending being replaced mostly by foreign direct investment (FDI) and then by portfolio investment. Bank lending declined from 70

percent of net private capital flows in the 1970s to about 20 percent in the 1990s. While FDI constitutes the largest share of capital flows (around 50 percent), portfolio investment (bonds and equity) has also increased substantially, accounting for about 30 percent of total capital flows in the 1990s. In absolute values, bond and equity flows excluding those counted as FDI—increased from $1 billion in 1990 to $40 billion in 1996, with bond flows exceeding equity flows in developed economy since 1994.

FDI inflows in 2006 were 38% higher than in 2005, approaching the peak of $1,411 billion reached in 2000. Although FDI flows to all three major country groups rose, they varied greatly among regions and countries. FDI flows to developed countries in 2006 rose by 45%, well over the growth rates of the previous two years, to reach $857 billion.
The continued rise in FDI flows across regions largely reflects strong economic growth and performance in many parts of the world. High corporate profits (and stock prices) boosted the value of cross-border M&As, which account for a large share of such flows. The number of Greenfield and expansion investment projects increased by 13% to 11,800 projects, notably in developing countries and in the services sector. Thus, as in more recent years, FDI flows continued to be the most important and stable source of external financing for developing countries.

1.2 Research Problem

Although, the drive towards the establishment of stock markets in African countries during the last few decades may be linked to other important developments in the global economy. The financial markets of many advanced countries have undergone tremendous changes and become increasingly integrated. These changes have resulted from the operation of a number of interrelated factors (Cosh, Hughes, and Singh, 1992). Such as; the progressive deregulation of financial markets both internally and externally in leading economies; the internationalization of these markets; the introduction of a number of financial products allowing riskier and bigger financial investments; and the emergence and the increasing role of new actors in the financial markets particularly, institutional investors.
These developments in the financial systems of advanced countries have led them to seek liberalization in the international trade and exchange of services in world trade negotiations. The establishment of stock markets in African countries and the liberalization of capital accounts can be seen as parts of this global liberalization trend. Thus, it is expected to boost domestic savings and increase the quantity and quality of investment. More generally, stock markets are seen as enhancing the operations of the domestic financial system in general and the capital market in particular (Kenny and Moss, 1998). Critics, however, argue that the stock market might not perform efficiently in developing countries and that it may not be feasible for all African markets to promote stock markets given the huge costs and the poor financial structures (Singh, 1999).
Also, there has been a considerable research on the relationship between financial market development and macroeconomic variables, financial reform, and other country –specific factors, and the relationships among the development of the various parts of a financial system. It is clear from the previous studies that financial markets tend to develop as the economy grows and financial reform progresses. Stock market development is embodied in the general financial sector development. In other words, stock market complements the development of other parts of the financial system. For instance, Singh (1997) find positive relationship between economic growth and stock market development and a large number of empirical studies on the role of FDI in host countries suggest that FDI is an important source of capital, complements domestic private investment, is usually associated with new job opportunities and enhancement of technology transfer, and boosts overall economic growth in host countries. However, attention has not been centered on joint effect of stock market development and foreign direct investment on growth in Nigeria. Thus, this study intends to fill this gap.

1.3 Objectives and Scope of the Study

Given the foregoing, the primary objective of this study is to establish empirically whether foreign direct investment and stock market development contribute to the growth of Nigerian economy. The specific objectives of this study include to:

- examine the trend of foreign direct investment and stock market development in Nigeria;
- establish the relationship that exists among foreign direct investment, stock market development and economic growth in Nigeria.

The scope of this study is limited to the period from 1980 to 2009.

1.4 Justification of the Study

This research is justifiable because as a result of globalization in the world economy today, and since the global financial crisis in December 2007, there has been a drastic change in the stock market in the world over. This has been a disadvantage to the flow of FDI to less industrialized countries which come from highly industrialized countries which are the most affected of this global economic meltdown.

Although, research on the effects of FDI and/or stock market development on economic growth have been done extensively in most of the developing nations, it is of great privilege to say that no study (if at all) has worked extensively on the joint effect of foreign direct investment and stock market development in Nigeria which is the tenet of this study.

Apart from the above reasons, this study improves upon past econometric method used to examine the impact of FDI and stock market development on growth. Methodologically, the study utilizes a long sample data and cover recent period than all past studies in Nigeria either on FDI or stock market development. The recent democratic government witness in Nigeria has had significant effect on the investment flow and stock market development as well as the recent policy on banking industries (bank recapitalization) of the nations, all on increasing the societal welfare. All these development might affect the observed relationship among FDI, stock market development and economic growth.

1.5 Organization of the Study

Following this introductory section, section two discusses the reviews of the available literature on the subject matter. The model, data sources and estimation techniques are contained in section three. Section four presents the trend of foreign direct investment and stock market development; model estimation results and interpretations. The summary of findings and policy recommendations are contained in section five.

2. Literature Reviews

In the trend of economic globalization, the role of FDI in promoting economic development has been widely studied. Athukorala and Menon (1995), Zhang and Song (2001), Zhang and Felingham (2001) and Liu et al. (2001) find that FDI promotes the manufactured exports of recipient countries. Athukorala and Chand (2000) and Bala subramanyam et al. (1996) provide some evidence that the growth enhancing effect of FDI would be significant and strong in countries with open trade policies and better trade regimes with export promoting FDI. While many developing countries are competing for FDI inflow, recent studies attempt to identify conditions which would lead to more beneficial utilization of FDI. To support this, Narula and Dunning (2000) point out that the increased competition of FDI is more for the "right" kind of investment and less developed countries increasingly need to provide unique, non-replicable created assets to maintain a successful FDI-assisted development strategy.

Adelegan (2000) explored the seemingly unrelated regression model to examine the impact of FDI on economic growth in Nigeria and found out that FDI is pro-consumption and pro-import and negatively related to gross domestic investment. Akinlo (2004) found that foreign capital has a small and not statistically significant effect on economic growth in Nigeria.

Jerome and Ogunkola (2004) assessed the magnitude, direction and prospects of FDI in Nigeria. They noted that while the FDI regime in Nigeria was generally improving, some serious deficiencies remain. These deficiencies are mainly in the area of the corporate environment (such as corporate law, bankruptcy, labor law, etc.) and institutional uncertainty, as well as the rule of law.

According to Anokye and George (2008), the positive response of structural changes in attracting FDI and its consequences on its financial markets especially stock market is obvious. They show that FDI to developing economies in West Africa for example increased from $1.9 billion in 1995 to about $15.8 billion in 2006. The market capitalization of emerging market countries almost tripled from about $2 trillion to about $5 trillion over the same period. Yartey (2008) argues that foreign investment is associated with institutional and regulatory

reform, adequate disclosure and listing requirements and fair trading practices which inspire increase, inspire greater confidence in domestic markets. This increases the investor's base and participation and leads to more capital flows.

One of the few cross-country studies on trading is Domowitz et al (2000). They document the relations between turnover, equity trading costs, and volatility, and investigate the determinants of domestic trading. They show, among other things, that turnover is inversely related to trading costs, providing a possible explanation for the increase in turnover in recent years as direct costs (commissions, fees) have declined.

Also, the determinants of stock market capitalization have been analyzed for specific groups of countries in some studies. Catalan et al (2000), examine the determinants of stock market development for OECD and some emerging markets, studying 27 countries in total. They find, apart from macro stability and legal rights, that the size of the institutional investor bases positively affects stock market development, and report evidence of a causal times series relation between institutional investors and stock market development. Claessens, Djankov, and Klingebiel (2001), investigate the development of stock markets in a panel of transition economies and highlight the role of privatization for stock market development in this sample of countries.

The nature and economic significance of the relationship between stock market development and growth vary according to a country's level of economic development with a larger impact in less developed economies (Filler, Hanousek and Campos, 1999). The proponents of positive relationships between stock market development and economic growth hinged their argument on the fact that the stock market aids economic growth and development through the mobilization and allocation of savings, risk diversification, liquidity creating ability and corporate governance improvement among others.
In summary, studies have been conducted on either to examine the effect of foreign direct investment on economic growth or stock market development on economic growth in Nigeria but little or no study has jointly analyzed the effect of foreign direct investment and stock market development on economic growth in Nigeria, thus this is the tenet of this study.

3. The Model

In an attempt to investigate the joint effect of foreign direct investment and stock market development on economic growth in Nigeria, this study adopts Adam, Anokye and George (2008) approach. These authors employ market capitalization as a proportion of GDP to capture stock market development which measure equals the total market value of listed shares divided by GDP, foreign direct investment and exchange rate. The reason for including exchange rate is to capture the macroeconomic stability which may be an important factor for the development of the stock market and FDI attraction. The more stable the macro economy the more incentive firms and foreign investors have to participate in the stock market. Thus, we expect a stable macroeconomic environment to enhance stock market development and attract more foreign investors. In order to establish the joint effect of foreign direct investment, stock market development and macroeconomic variables, we specify our model as follows using growth rate of GDP to proxy economic growth as the dependent while market capitalization as a proportion of GDP (MKT) to proxy stock market development, growth rate of FDI, and exchange rate (exr) are the independent variables.

Hence, we have:

$$gr = f(fdigr, mkt, exr) \quad (1)$$

In linear form, equation (1) can be expressed as:

$$gr = \beta_0 + \beta_1 fdigr + \beta_2 mkt + \beta_3 exr + u_t \quad (2)$$

β_1 and $\beta_2 >$ while $\beta_3 < 0$

Equation 2 captures the percentage effect of the model equation and this represented the estimated model.

3.1 Estimation Technique

In order to investigate the theoretical relationship among the variables of interest, we employed time-series data on the variables which are first tested for stationarity using unit root test to avoid spurious regression result after which an ordinary least square was implored if the variables are $d \sim I(0)$ series but if not we test for co-integration among the variables using Engle and Granger (1987) techniques and the corresponding VECM

3.2 Source of Data

The data employed in this study was basically secondary data on growth rate of GDP, market capitalization, foreign direct investment and exchange rate. The data were obtained from mainly from the following source:

- World Development Database (2007), WDI, World Bank.
- International Financial Statistics, IFS-International Monetary Fund Database, 2007; and
- Central Bank of Nigeria-Statistical Bulletin- 2009.

4.0 Trend of Foreign Direct Investment and Stock Market Development

The aim of this section is to analyze the trends of foreign direct investment and stock market development and determine the extent to which they engendered the growth of the economy. It was evident from this figure that foreign direct investment in Nigeria provided a cyclical movement in direction for several years but in recent time, the inflow of FDI declined and perfectly elastic. Whereas, the trends of stock market development had inclined over time until the recent shock in stock exchange market which produced a downward curp in the trend meaning a reduction in it ability to enhance growth. (See appendix)

4.1 Model Estimation Results and Interpretations

4.1.1 Time Series Properties of the Variables Used

For the meaningful analysis therefore, we need to establish the time series properties of the variables used. Thus, the time series properties of the variables used in this study were examined through Augmented Dickey-Fuller (ADF) test as explained in Engle and Granger (1987). This development arises from the prevalence of substantial co-movement among most economic time series data, which has been argued in the literature as undermining the policy implications that could be inferred from such modeling constructs. (Engle and Granger, 1987).

The result of the unit root tests as shown in table 1 indicates that all the variables are integration of order one at five percent level. Thus, all the variables are stationary at first difference.

4.1.2 Cointegration Test and Vector Error Correction Model

Having established the order of integration of our series, we determine the number of long-run equilibrium relationships or cointegrating vectors between the variables. Since the variables are found to be integrated of the same order, such as I(1) as shown above, it implies that an equilibrium relationship exists among the variables. Therefore, since the main focus of the study is to establish whether there are long-run relationship among foreign direct investment, stock market development, exchange rate and economic growth in Nigeria, we conduct a Cointegration test in line with Johansen test.

Table 2 presents the test results for the number of cointegrating vectors. The results show that both the maximum eigenvalue and likelihood statistic suggest the presence of two cointegrating equation among the four variables in the Nigerian economy at 5 percent level in line with the Osterwald-Lenum critical values. This unveils the existence of a long-run equilibrium relationship between economic growth and the variables used in the model.

The empirical result as shown in table 3 was analyzed with the use of the two-step Engle and Granger (1987) model which suggests that any set of cointegrated time series has an error-correction representation, which reflects the short-run adjustment mechanism. The motive of the analysis is to discover whether the short-run dynamics are influenced by the estimated long-run equilibrium condition that is the cointegrating vectors.

A crucial parameter in the estimation of the short-run dynamic model is the coefficient of the error-correction term which measures the speed of adjustment of economic growth to its equilibrium level. The estimation using two-lag specification and by incorporating the error term (ecm), yield the result above. The results show that the parameter of the error-correction terms in the model is statistically significant and correctly signed. This confirms that economic growth in Nigeria has an automatic adjustment mechanism and that the economy responds to deviations from equilibrium in a balancing manner. The value of -0.3846 for the coefficient of error correction term suggests that the Nigerian economy will converge towards its long-run equilibrium level in a moderate speed after the fluctuation in foreign direct investment, stock market development and exchange rate. Eliminating, for instance, 95% of a fluctuation in foreign direct investment, stock market development or exchange rate would take a little less than two years or precisely 6.15 quarters.

In order to examine the relationship between economic growth and exogenous variables, the table 4 contains the regression results. From the table, foreign direct investment, stock market development and exchange rate impact positively and significantly on economic growth. An inspection of the difference among the three coefficients that is, the aggregate impact of both on growth shows that the F-statistic was significant as the indicators of economic growth. The explanatory power of the model explained approximately 96 percent total variations in economic growth, indicating that the model has high goodness of fit. The result of the Durbin-Watson d* statistic shows that the model has no serial autocorrelation problem.

5.0 Summary and Policy Recommendations

The study examined the impact of FDI and stock market development on economic growth in Nigeria. The study used annual data from 1980 to 2009. The Cointegration analysis reveals existence of long-run relationship among FDI, stock market development and economic growth. Contrary to previous researchers who found FDI and stock market development to be negatively affecting growth in Nigeria, we find significant positive impact on growth in Nigeria. The concentration of FDI in the mining sector which does not generate direct growth impacts on the wider economy has been cited as the reason for negative effect of FDI on economic growth. The Financial Market in Nigeria show that investment in share and stock in the market benefited both resident and non-resident from the listing of stock exchange market which accounts for about 50 per cent of the total market capitalizations and its exclusion from the non-resident investors restriction which allowed a single investor (i.e. one who is not a Nigerian and who lives outside the country) to hold up to 10 percent and no more than cumulative total of 74% of every equity. One important thing worth pointing stock market development play major role in attracting FDI (see Impulse response in Figure 3 in Appendix). Our results have several policy implications. First, we support the policy maker's decision to slash the non-resident investors for listed companies. This will attract major investors to other sectors of the economic to bring need growth in the exchange market and the economy as whole. Second, policy makers should devise strategies to increase the FDI stock (retain FDI) and offer incentive for long investing and listing on the stock market so that the main objective of the government to stimulate growth will be fulfilled.

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Table 1: Results of the Order of Integration

Variables	**Augmented Dickey-Fuller**	**Order of Integration**
Log(gr)	-3.3864**	1
Log(fdigr)	-3.3339**	1
Log(mkt)	-3.1672**	1
Log(exr)	-3.3272**	1

Note: ** (*) denote significant at 5% (1%) levels

Table 2: Johansen Cointegration Test

Hypothesized No. of CE(s)	**Max-Eigen Statistic**	**Likelihood Ratio**	**Critical Values**	
			1%	5%
None**	0.9819	165.8224	54.46	47.21
At most 1**	0.7904	57.5302	35.65	29.68

Max-Eigen and Likelihood Ratio Statistic tests indicate 2 cointegrating equations at 5% level.
** denotes rejection of the hypothesis at the 5% level.

Table 3: Parsimonious Short run Vector Error Correction Model (VECM)

Variable	**Coefficient**	**Standard Error**	**t-ratio**	**Probability**
ECM(-1)	-0.3846	0.1693	-2.2725	0.0342**
Log(GR(-1))	1.2313	0.1131	10.8873	0.0000*
Log(EXR(-3))	0.0743	0.0442	1.6787	0.1088
Log(FDIGR)	0.1250	0.0449	2.7827	0.0115*
Log(FDIGR(-1))	-0.3121	0.1109	-2.8153	0.0107*
Log(MKT(-1))	-0.5710	0.2651	-2.1538	0.0436**
R^2 0.9954		D.W 1.7848		
Adjusted R^2 0.9942		F-Statistic 4.07		0.0193**

(**)* indicate significance at (5%)1%.

Table 4: Economic Growth Regressions (1980-2009)

Variable	**Coefficient**	**t-Statistic**
C	4.3483	5.5120*
Log(FDIGR)	0.6140	11.5268*
EXR	0.0066	2.0458**
Log(MKT)	1.3543	5.7317*
R^2 : 0.9665 Adjusted R^2 : 0.9624	D.W: 1.7337 F-statistic: 231.0643	

Note: *(**) denote significant level at 1% (5%) level.

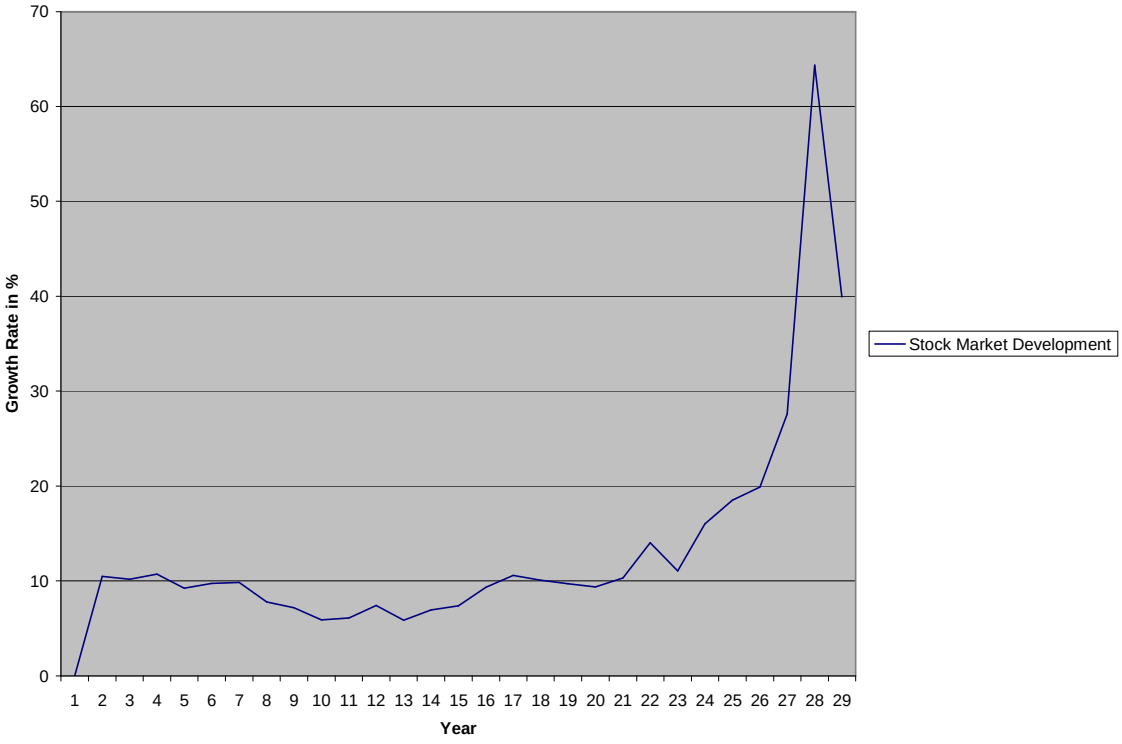

Figure 1. Trend of Stock Market Development

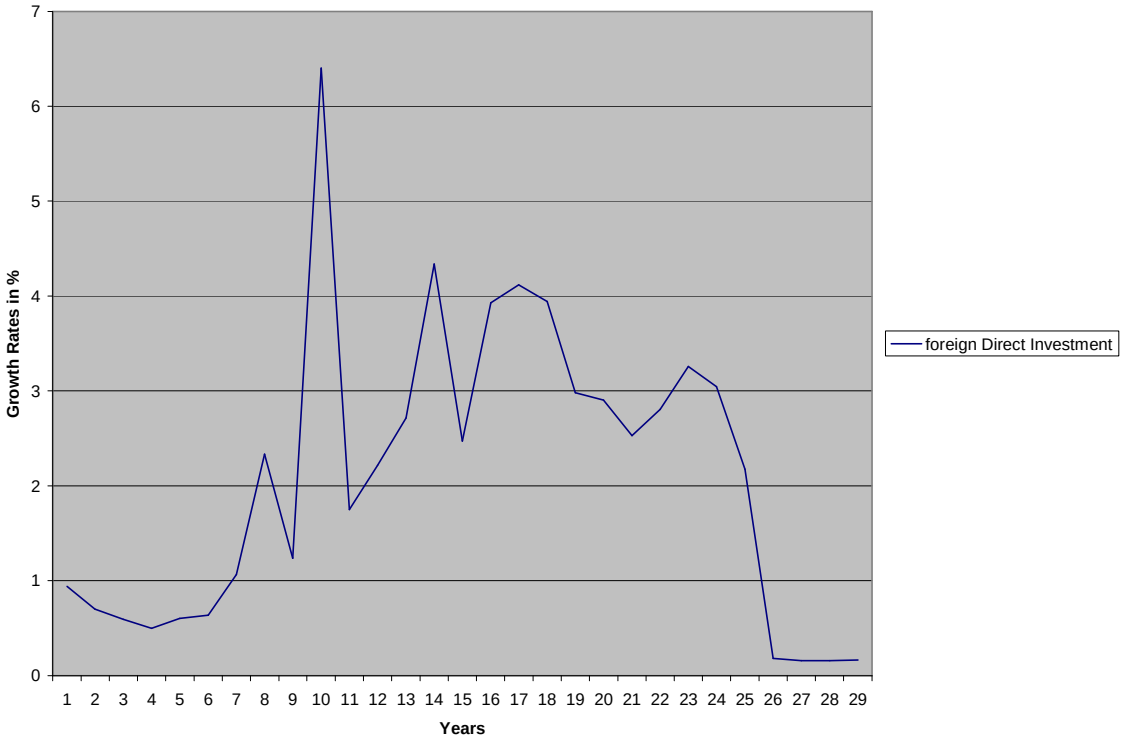

Figure 2. Trend of Foreign Direct Investment