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Transforming the Nigeria Economy through Foreign Direct Investment: The Role of Financial Development

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Abstract
The paper examines the causal relationship between foreign direct investment, the significance of the country's financial system development and economic growth over the period 1981-2013. The study moved away from the standard approach of estimating the effect of FDI on economic growth, by incorporating financial development to examine its role in attracting FDI for the promotion of growth process. Using time series data published in the 2014 statistical bulletin by central bank of Nigeria, the study investigated the time series properties of the variables employing the Augmented Dickey Fuller test approach, and adopted the multivariate autoregressive test to confirm the existence of causal relationship among the variables of study. The result confirmed the existence of bi-directional causality among the variables, except the ratio of money supply to economic growth which showed a unidirectional causality from GDP to MSS. The paper suggests the need for a comprehensive and sequential reform of the financial system and sound articulation of economic policy for continued attraction of more FDI to boost economic growth.
Keywords: FDI, Financial Development, Economic Transformation, Cointegration

1.0 Introduction

The analysis of the role of foreign direct investment (FDI) in the transformation process of the economies of the developing nations especially that of Nigeria, has attracted wide research interest. However, the results of these studies lack unanimity and the area remains increasingly foggy. Nevertheless, it is clear that inward bound FDI is important to the transformation process of developing economies by fulfilling three cardinal developmental objectives which includes: the provision of the much needed capital for domestic investment, hence bridging the saving-investment gap; providing foreign currency through initial investment and subsequent export earnings thus closing foreign exchange gap; and bridging tax-revenue gap by generating revenues through additional economic activities (Pradhan, 2008; Smith, 1997).

One of the features of Nigerian economy in the globalized world has been the continued dependence on increased inflow of foreign capital, for example foreign direct investment from the developed economies to solve the problem of insufficiency of capital from domestic sources for long term investment expansion. On the other hand, increased inflows of FDI have not been accompanied by significant improvement in macroeconomic performance. Notwithstanding this impressive trend of FDI inflows the Nigerian economy still faces severe challenges, such as aggravated poverty, low capacity utilization, declining output, burgeoning unemployment rates, epileptic power supply as well as infrastructural decay. The level of sophistication of the financial system is an important determinant both of the ability of the country to attract international capital and the ability of the country's financial system to withstand shocks to global capital flows (Ndikumana, 2003). Therefore, it is important to emphasize that the pre-condition necessary for FDI to generate positive macroeconomic performance in the host economy is the existence of a developed financial system. A developed financial system promotes efficient allocation of financial resources and helps to boost the absorptive capacity of the host country with respect to FDI inflows, which further contributes to the process of technological diffusion associated with FDI (Levine, 1997; 1991; Greenwood and Jovanovic, 1990).

Relatively, the Nigerian financial system is still shallow with limited range of financial products and services. For example, bank credit to the private sector is predominantly short term, government securities are principally of short term maturity, while inter-bank lending is still underdeveloped (Gelbard and Leite, 1999). Further to the above, the Nigerian capital market does not have a vibrant bond segment, thus rendering the market still small and illiquid. The Nigerian banking sector is continually embroiled in inefficient credit allocation and weak loan repayment enforcement mechanisms which exacerbate high proportion of non-performing loans.

The above debilitating financial ailments typically results in deficient financial intermediation, partly associated with low income and poor saving culture. These unimpressive characteristics inhibit efforts and policies (albeit inconsistent) initiated by successive governments to transform the Nigerian economy, generate employment, and improve the standard of living of the people. FDI is considered as a substitute for stock market investment in order to circumvent the difficulties of investing through the domestic capital market. This infers that FDI is attracted to economies with improved institutional and legal framework thus enhancing development of stock market working through various channels, and thus generating growth and transformation. Therefore, it could be inferred that FDI and financial market development may be complimentary and a substitute. This is

based on the assumption that FDI can positively influence the activities of capital market, and vice-versa.

The objective of this study therefore, is to empirically examine the cointegrating and the causal relationship between foreign direct investment, financial development and economic performance in Nigeria. After this introductory section, the rest of the paper is structured as follows: section two reviews related literature, while section three describes the methodology employed in the study. Section four analyses empirical results, and section five concludes the study.

2.0 Review of Related Literature and Theoretical Perspective

There are plethora of studies on the relationship between foreign direct investment and economic growth on one hand, and financial system and economic growth on the other hand. The results of these research studies usually lack unanimity.

2.1 Theoretical Underpinning

Foreign Direct Investment and Securities Market imperfection theory developed by Hymer (1960) is the first macroeconomic theory of FDI which investigates imperfection in the securities markets and its relationship with foreign direct investment. The theory postulates that where there is no developed, liquid and deepened financial markets for transactions in equities, bonds and other securities (both foreign and domestic), as common to Nigeria and other Sub-Saharan countries, FDI may be a substitute for portfolio investment and long term investment in capital stock. The basic argument also holds for other countries with impediments to investing in the country's domestic markets, such as legal restrictions, capital controls, prohibitive tax regulations, or even information processing difficulties. FDI therefore, reaps the benefits of higher returns that simply cannot be achieved through portfolio investment (Ragazzi, 1973).

Furthermore, the development of the securities market imperfection theories adds the benefits of diversification. Thus, in countries where portfolio and intermediated investment are difficult or unavailable FDI serves to diversify investors' portfolio to an extent that may not have been possible without FDI. Even if real returns are equal, there will be benefits of diversifying risk internationally (Click and Coval, 2002). It must be noted that the development of diversification motives for FDI is associated with Rugman (1976, 1977). However, Jacquillat and Solnik (1978) suggest that international investors are poor tools for diversification. This diversification motive is supported by the hypothesis of Hymer (1960). Hymer (1960) hypothesized that for FDI to thrive there must be market imperfections that create conflicts. Thus, firms only invest overseas if they can take advantage of those capabilities that the domestic competitors do not possess. Therefore, the motivation is to have control of more markets, maximize profits and create oligopolies. By investing directly and by reducing competition, the firm aims to reduce or eliminate the conflicts (Ietto-Gillies, 1992). Hymer (1960) concludes that FDI is a strong progressive force which enables planning and organization of production in a worldwide scale and leads to increase in productivity and the spread of new technology and new products.

2.2 Review of Empirical Studies

In spite of enormous studies on effect of FDI on economic performance in Nigeria, incoherent research results constitute a source of concern to researchers.

2.2.1 Foreign Direct Investment and Economic Growth

The inflow of foreign capital may be significant in not only raising the productivity of a given amount of labour, but also allowing a large labour force to be employed (Sjoholm, 1999). The drive in favour of increased quality and quantity of FDI inflows and the offering of special inducements to attract FDI arises from the conviction that capital flows enhances economic performance by engendering technological transfers and spillovers. According to Romer (1993), there are important idea gaps between the poor and the rich countries, which foreign investment can ease the transfer of technological and business know-how to poorer countries. Thus, these transmissions of spillovers could stimulate substantial contributions to the growth of the macro economy. This is corroborated by Rappaport (2000) in his postulation that foreign investment may boost the productivity of all firms, not just those receiving foreign capital.

Zhang (2001) in a study of eleven developing countries in Latin America and Asia adopted the cointegration and Granger Causality methodological approaches observed that FDI promotes economic performance only in five of the eleven countries of study. He also observed that technology transfer and spillover efficiency are the key benefits of FDI to recipient countries. Nevertheless, these benefits are contingent on the absorptive capabilities of the host country, such as liberal trade policy, human capital development, and an export-oriented FDI policy.

Balasubramanyam, Salisu and Dapsoford (1996) explain significant implication of FDI on human capital. In their earlier examination, the result supports the assumption that FDI is more important for export promoting economies than import substituting economies. This implies that the influence of FDI on growth varies across countries. Similarly, it infers that trade policy of the country can significantly affect the role of FDI

on economic growth.

FDI exerts a significant effect on economic growth (Blomstorm, Lepsey & Zegan, 1994). They add that there seem to be a threshold of income above which FDI has positive effect on economic growth and below which it does not. Ayanwale (2007) explains that only those countries that have reached a certain income level can absorb new technologies and benefits from technology diffusion, and therefore, reap the extra advantages that FDI can offer. Borensztein, De Gregorio and Lee (1998) observe the interaction of FDI and human capital as one of the reasons for differential response to FDI at different levels of income. This is due to the fact that it takes a well-educated population to understand and spread the benefits of new innovations to the whole economy.

Adewumi (2006) argues that GDP growth is usually the parameter for measuring economic growth of a country, even though it is not the only parameter. Gross domestic product includes all the production within the country for a given period. Foreign direct investment is included in GDP. Several research works have shown that FDI has positive impact on economic growth. An investigation by Loungani and Razin (2001) reports that of the three sources of capital flow (FDI, portfolio investment and primary bank loans) to the developing economies, FDI was observed to be more resilient during the global financial crisis from 1997-1998. Moss, Ramachandran and Shah (2005) produced similar conclusion in their investigation which focuses on Uganda, Tanzania and Kenya. The study reveals that the percentage of export from foreign investment is far more than the one from domestic investment in the three countries mentioned above.

According to OECD (2002) FDI simply increases efficiency of resources thereby raising factor productivity in the host country. It therefore, concludes that there is a positive influence of FDI on economic growth. The results of some empirical studies confirm the positive contributions of FDI to economic growth; but caution that the contributions depend on certain factors in the host country. Alfaro (2003) concludes that the contribution of FDI to growth depends on the sector of the economy where the FDI operates. According to him, FDI inflows to the manufacturing sector have a robust influence on growth, whereas FDI inflows to the extractive sector, especially of oil, appear to generate negative impact on growth. The effect of FDI inflows to the service sector could not be clearly established. However, an economy with a well-developed financial sector benefits more from FDI (Alfaro, Chanda, Kalemli-Ozcan and Sayek, 2003).

The impact of FDI on growth also depends on the local condition of the host country. Chowdhury and Mavrotas (2003) maintain that the contribution of FDI to growth depends on other factors which include human capital base in the host country as well as the degree of openness in the economy. They added that the impact of FDI on growth, in the short run, may be negligible. But Lall (2002) argues that FDI inflows affect many economic indices which in turn affect economic growth. Therefore, the impact of FDI on growth cannot be measured directly since the impact is through its contributions to these factors.

2.2.2. Contributions of foreign direct investment to economic growth in Nigeria

Studies on investment and economic growth in Nigeria produce varying outcome. The empirical evidence however is not unanimous. For instance, Odozi (1995) working on the determinants of FDI in Nigeria in pre and post periods of Structural Adjustment Programme (SAP) discovers that the macro policies in place during the pre-SAP era inhibited the inflow of FDI. This policy environment resulted in the proliferation and growth of parallel exchange markets and sustained capital flight.

Ogiogio (1995) identifies distortions as reasons for negative contributions of public investment to GDP growth in Nigeria. Contrarily, other researchers, such as Aluko (1961) and Obinna (1983) identify positive significant nexus between FDI and economic growth in Nigeria. However, Endozien (1968) submits that though there are linkages between FDI and the Nigerian economy, he maintains that the relationship is positively negligible. According to Oseghale and Amonkhienm (1987), FDI is positively associated with GDP growth. In their conclusion, they submit that increased inflows of FDI results in better economic performance.

Ariyo (1998) examined the trend of investment and its consequences on long-term economic growth in Nigeria. He observes that private domestic investment only consistently contributes to higher GDP growth rates between 1970 and 1995. However, reliable evidence that all the investment variables included in the analysis have any perceptible influence on economic growth was lacking. He therefore, suggests the need for an institutional re-arrangement that recognizes and protects the interests of major partners, (such as foreign investors) in the development of the economy.

Jerome and Ogunkola (2004) examined the magnitude, direction and prospects of FDI in Nigeria. They note general improvement in FDI regime in Nigeria. They also observe some serious deficiencies. These deficiencies were found in the area of corporate environment (such as corporate laws, bankruptcy and labour laws, among others), and institutional uncertainty as well as the rule of law.

Oyaide (1977), using indices of dependence and development as mirror of economic performance in Nigeria, concludes that FDI catalyses both economic dependence and economic development. According to him, FDI continuously promotes a level of development that would have been impossible without such inward flows of investment albeit, at the cost of dependence.

Furthermore, Oseghae and Amenkheinan (1987) explored the nexus between oil exports, international debt and foreign direct investment in Nigeria on one hand, and the impact of this relationship on the sectoral performance, on the other hand. They surmise that foreign borrowing and FDI negatively influence overall GDP. However, they conclude that the variables generate significantly positive impact on three main sectors of the Nigerian economy, viz: manufacturing, transport, communication, insurance, and finance.

Oyinlola (1995) examined the contributions of foreign direct investment to the prosperity or poverty of least developed countries (LDCs). He conceptualized foreign capital to embrace foreign loans, foreign direct investment and export earnings. Adopting a two-gap model credited to Chenery and Stout (1966), Oyinlola (1995) concludes that FDI generates a negative effect on economic growth and development in Nigeria. However, Ekpo (1995) using time series data reports that political regime, real income per capita, rate of inflation, global interest rates, credit rating and debt service are the key factors responsible for the variability of FDI into Nigeria.

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

However, according to Ayanwale (2007), these studies did not control for the fact that most of the FDI is concentrated on the extractive industry (oil, gas and natural resources). Assessing the influence of FDI on firm level productivity in Nigeria, Ayanwale and Bamire (2001) report a positive spillover of foreign firms on domestic firms' productivity.

2.2.3. The Significance of Financial Development

The significance of the financial development is based on the financial theory of repression. The theory suggests that efficient utilization of foreign and domestic financial resources/capital through a highly developed, organized and liberal financial market enhance economic growth Mckinnon, 1973; and Shaw, 1973). In his pioneering work, Shaw (1973) emphasized the role of developed financial system and efficient intermediation process in promoting savings and investment. Other related studies have also examined the relationship between finance and growth using cross sectional data/panel and time series data.

For instance, King and Levine (1993a), Levine and Zervos (1998) empirically provide evidence to support the hypothesis that financial development promotes economic growth. Similarly, Aziakpono (2002) and Nwakoma (2004) offer evidence that financial development positively support economic growth in Africa. This infers that a well-developed, liquid and functioning financial system is a necessary condition for efficient exploitation or realization of maximum benefits of foreign direct investment for the transformation of developing economies to full potential. Alfaro, Chandra, Kalemli-Ozcan and Sayek (2000) find that FDI promotes economic growth in economies with sufficiently developed financial markets. However, Balasubramanyam, Salisu, and Dapsoford (1996) emphasized the need for openness of the economy as a critical condition for realizing growth-effect of foreign direct investment.

In the 1980s, Nigeria embarked on various reforms of the financial systems. Nigeria, in 1986 introduced the Structural Adjustment programme designed to disentangle the economy from the cord of financial repression and liberalize the financial system to completely liberalized capital account transaction to provide the stimulant for growth and transformation. The emergence of democratic rule further boosted the upsurge of inflow of foreign direct investment in Nigeria through equity participation in the oil and gas sector, the privatization of public enterprises and investment in telecommunications. In Nigeria, FDI inflow increased from an average of N196.68million in the 1970s N2006.36 million in the 1980s and averaged N54,920.08 million through the 1990s. FDI maintained an upward trend from 2002 to 2007. It rose by 172.03 percent in 2004 to N1,775.59 billion in 2006, although it declined by 12.69 percentage point to N1553.72 billion in 2007, (Mordi, Englama, and Adebusuji, 2010).

3.0 Methodology and Data

Annual data between 1981 and 2013 published by the Central Bank of Nigeria in 2014 are employed for estimation of the causal relationship between foreign direct investment, financial development and economic growth. Two indicators of financial deepening are considered useful in the measurement of financial development. The first measure is the ratio of broad money supply (M2) to gross domestic product. M2/GDP measures the degree of the monetization of the economic system and serves as an indicator of the expansion payment system and saving function. The other measure of financial development used in this study is the ratio of credit to private sector to gross domestic product (CPS/GDP). CPS/GDP measures the degree to which financial intermediaries are able to identify profitable investments, monitor, manages, facilitate risk management and mobilize savings (Odeniran and Udeaja, 2010). According to Calderon and Liu (2003), CPS/GDP has an advantage because it considers credit channeled to the private sector, as opposed to credit issued to government, government agencies, and public enterprises. CPS/GDP also excludes credit issued by the Central Bank.

CPS/GDP is a reliable measure of financial development because CPS is an accurate reflection of the actual volume of funds directed to the private sector for long term productive investments (Gregorio and Guidotti, 1995). Real GDP growth (GDPG) is used as a measure for economic transformation. The ratio of FDI to GDP is used to measure the performance of FDI in filling the savings and investment gap.

3.1.0 Econometric Context

The significance of financial development in the estimation of FDI-led economic growth hypothesis employs a structure which encompasses the following econometric framework that:

i. investigates the order of integration to ascertain the stationary properties of the time series variables
ii. Conducts a cointegration test to determine the existence of cointegrating relationship between the variables, and
iii. Performs Granger Causality test to evaluate the direction of causality and feedback between the variables.

3.1.1. Investigation of Order of Integration

Examining the unit root property or stochastic non-stationary property of the individual time series variable to confirm the order of integration, the Augmented Dickey Fuller (ADF) process is estimated with the following equation:

$$\Delta Y_t = \Psi_0 + \Psi_{1t} + \beta y_{t-1} + \sum_{j=1}^{k} \delta j \Delta Y_{t-1} + \varepsilon_{1t} \qquad (1)$$

where Yt represents relevant time series, Δ is the first difference operator, t is a linear trend, and ε_{1t} is pure white noise. The null of no existence of non-stationarity is H_0. Failure to reject the null results in differencing of the series until stationarity is achieved and null rejected. Akaike Information Criterion AIC) was used to determine the lag length.

3.1. 2 Cointegration Test

Cointegration regression is conducted to confirm the existence of long run and equilibrium relationship between the variables of study. The existence of long run equilibrium equations infers that the variables move together over time and guarantees that the variables do not drift apart, so that short term disturbances from the long run trend are corrected. Thus we employ the Johansen and Jesulius (1990) maximum likelihood test which set up the economic procedure of a non-stationary time series as:

$$\Delta Y_t = \Pi y_{t-1} + \sum_{i=1}^{k-1} i\Delta Y_{t-1} + \beta_{xt} + \varepsilon_{1t} \qquad (2)$$

$$\Pi = \sum_{i=1}^{k=1} Ai-1, \qquad = -\sum_{i=i+1}^{k} Aj \qquad (3)$$

where Yt represents k-vector of the 1(1) variables, xt is a vector of a deterministic variables, is the number of cointegrating relations, whereas ε_{1t} is an identically and independently distributed error term. Trace test and maximum eigenvalue are used to confirm the hypothesized existence of cointegrating vectors. In the application of trace test, the number of distinct cointegrating vectors is less than or equal to against a general alternative , while the maximum eigenvalue test statistic is the likelihood ratio test statistic for the null hypothesis of cointegrating vectors against the alternative r+1 cointegrating vectors

3.1.3 Granger Causality Test

This test assumes that the information relevant to the prediction of the respective variables is solely contained in the time series data of the variables (Gujarati, 2003). The variables of this study are indicated as GDP, FDI, CPS and MSS captured in the model specified below:

$$GDP_t = \lambda_1 + \sum_{i=1}^{P} {}_1GDP_{t-1} + \sum_{j=1}^{q} \beta_1 FDI_{t-j} + \sum_{k=1}^{r} \delta_1 CPS_{t-k} + \sum_{\iota=1}^{s} \Pi_1 MSS_{t-l} + \varphi EC_{t-1} + \varepsilon_t \qquad (4)$$

$$FDI_t = \lambda_2 + \sum_{i=1}^{P} {}_2FDI_{t-1} + \sum_{j=1}^{q} \beta_2 GDG_{t-j} + \sum_{k=1}^{r} \delta_2 CPS_{t-k} + \sum_{\iota=1}^{s} \Pi_2 MSS_{t-l} + \varphi EC_{t-1} + \varepsilon_t \qquad (5)$$

$$CPS_t = \lambda_3 + \sum_{i=1}^{P} {}_3CPS_{t-1} + \sum_{j=1}^{q} \beta_3 FDI_{t-j} + \sum_{k=1}^{r} \delta_3 GDP_{t-k} + \sum_{\iota=1}^{s} \Pi_3 MSS_{t-l} + \varphi EC_{t-1} + \varepsilon_t \qquad (6)$$

$$MSS_t=\lambda_4+\sum_{i=1}^{P} {}_4CPS_{t-1}+\sum_{j=1}^{q}\beta_4FDI_{t-j}+\sum_{k=1}^{r}\delta_4GDP_{t-k}+\sum_{\iota=1}^{s}\Pi_4MSS_{t-l}+\varphi EC_{t-1}+\varepsilon_t \quad (7)$$

4.0 Empirical Analysis

4.1 Stationarity Test Results

The results of unit root tests performed on all the variables with the application of Augmented Dickey Fuller (ADF) statistics is shown in table 1 below. The null hypothesis of the existence of unit root can not be rejected at 5 percent for all the variables at the levels. All the variables attained stationarity after second difference, except FDI at first difference.

Table 1: Results of Unit Root Test at 5 percent Level of Significance

	Levels		First Difference		Second Difference		Order of	Lag
Variables	ADF Statistics	Critical value	ADF Statistics	Critical values	ADF Statistics	Critical values	Integration	Length
GDP	5.275731	-1.952066	-1.324443	-1.952473	-6.363158	-0.95291	1(2)	1
FDI	1.395226	-1.952066	-2.532758	-1.952473			1(1)	1
MSS	1.615783	-1.952066	-0.080155	-1.952473	-3.609165	-0.95291	1(2)	1
CPS	3.00323	-1.952066	-0.975811	-1.952473	-6.047099	-0.95291	1(2)	1

Source: Authors' Computation

4.2 Results from Cointegration test

The results of cointegration investigation under the assumption of linear deterministic trend presented in table 2 below indicates that the trace statistics and the maximum eigenvalue test statistics show evidence of three and two cointegrating relations at 5 percent and 1 percent respectively among the variables, hence the null hypothesis of the absence of cointegrating relations is rejected. This infers that there exists a unique long-run relationship between the variables.

Table 2 Johansen Maximum Likelihood Cointegrating Test Results

Date: 12/29/14 Time: 14:18
Sample(adjusted): 1984 2013
Included observations: 30 after adjusting endpoints
Trend assumption: Linear deterministic trend
Series: GDP FDI MSS CPS
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.957963	163.6606	47.21	54.46
At most 1 **	0.816607	68.58438	29.68	35.65
At most 2 *	0.376111	17.70059	15.41	20.04
At most 3	0.111515	3.547110	3.76	6.65

*(**) denotes rejection of the hypothesis at the 5%(1%) level
Trace test indicates 3 cointegrating equation(s) at the 5% level
Trace test indicates 2 cointegrating equation(s) at the 1% level

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.957963	95.07626	27.07	32.24
At most 1 **	0.816607	50.88379	20.97	25.52
At most 2 *	0.376111	14.15348	14.07	18.63
At most 3	0.111515	3.547110	3.76	6.65

*(**) denotes rejection of the hypothesis at the 5%(1%) level
Max-eigenvalue test indicates 3 cointegrating equation(s) at the 5% level
Max-eigenvalue test indicates 2 cointegrating equation(s) at the 1% level
Normalized cointegrating coefficients (std.err. in parentheses)

GDP	FDI	MSS	CPS
1.000000	33.27063	50.62723	-96.62645
	(5.54311)	(6.85599)	(13.1047)

Source: Authors' computation

The normalized cointegrating coefficient is expressed as:

GDP + 33.27063FDI + 50.62723MSS – 96.62645CPS. (8)

The ECM can be expressed as:
ECM=GDP -33.27063FDI-50.62723MSS+96.62645CPS (9)
The long run economic growth through FDI and financial system is elucidated by normalizing the estimates of the unconstrained cointegrating vector on economic transformation in equations (8) and (9).

4.3 Vector Auto-Regressive (VAR) Estimation Results

The results of the variables from Granger causality estimates are presented in table 3.
In establishing the nature of causality between the variables using a pair-wise Granger Causality test for the existence of causality and possible feedback with two lags of each variables, the estimated results obtained are discussed below.

Table 3 Granger Causality Test Results
Pairwise Granger Causality Tests
Date: 12/29/14 Time: 14:15
Sample: 1981 2013
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
FDI does not Granger Cause GDP	31	3.82193	0.03507
GDP does not Granger Cause FDI		5.77264	0.00842
MSS does not Granger Cause GDP	31	1.09374	0.34988
GDP does not Granger Cause MSS		8.60289	0.00136
CPS does not Granger Cause GDP	31	5.06088	0.01392
GDP does not Granger Cause CPS		13.9116	7.8E-05
MSS does not Granger Cause FDI	31	45.0422	3.6E-09
FDI does not Granger Cause MSS		13.5433	9.3E-05
CPS does not Granger Cause FDI	31	23.6081	1.4E-06
FDI does not Granger Cause CPS		7.98425	0.00198
CPS does not Granger Cause MSS	31	19.4648	6.8E-06
MSS does not Granger Cause CPS		20.5344	4.5E-06

Source: Authors' computation

The null hypothesis in each case is that the variables under consideration does not granger cause the occurrence or determine variation in the other variable. Since the estimated F- distribution is assumed to be significant at 5 percent level, thus the critical value $F\alpha = F_{0.05}$ at the n and n-k-1 degree of freedom (df), i.e. 3 and 33-3-1 df equals 2.92.

The estimated results show that GDP, FDI, MSS and CPS were significant at 95 percent confidence interval with feedback or by-directional causality. The result showing a bi-directional causality between CPS and GDP is consistent with the findings of Jean-Claude (2006) in China. Cases of feedback or bi-directional causality between the variables are observed, except between MSS and GDP. Therefore, the hypothesis that FDI does not granger cause GDP, taking into consideration the role of the financial development, is rejected because the calculated F-value in each of this bi-directional relationship is higher than the critical value of 2.92 at 5 percent level of significance. However, MSS has robust bi-directional causality with other variables, except with GDP where it exhibits a unidirectional causality. This result supports the findings of Nnanna, (2004). Therefore, we fail to reject the null hypothesis that MSS does not granger cause GDP. The calculated F-value of 1.09374 is lower than 2.92 at 5 percent level of significant. Nevertheless, past values of GDP have the predictive ability to determine the current values of money supply (MSS).

Concerning the bi-directional causality or feedback between FDI and GDP, it is likely that certain domestic economic policies, such as liberalization, privatization and commercialization, and tax incentives to foreign investors could be responsible for this robust bi-directional causality. It is also possible that both variables (GDP and FDI) themselves may have positively influenced the growth of the other variable. The two measures of financial development employed in this study show robust bi-directional relationship with FDI.

The absence of a bi-directional causality between MSS and GDP suggests the possibility of excess supply of money relative to economic activities over the demand for money. The imbalance arising from excess monetization of the economic system may have exacerbated distortions, stimulated inflation and instability and spawned adverse influence on expected returns on investment, and consequently impede growth.

Conclusion and Policy Recommendation

This study examines the causal robustness of FDI and economic growth with additional emphasis on the significance of the level of financial development between 1981 and 2013. Employing cointegration and multivariate vector auto-regressive (VAR) techniques to investigate long run equilibrium relationship and the causal relationship respectively between GDP, FDI and selected measures of financial development (MSS and CPS), the paper finds that GDP, MSS and CPS were integrated of order two, while FDI was integrated of order one. Furthermore, Johansen's multivariate cointegration test confirms that the variables were cointegrated, which infers the presence of long run equilibrium relationship between the variables.

The study confirms the presence of bi-directional causality between GDP and FDI, FDI and CPS, as well as FDI and MSS. A unidirectional causality was found from GDP to MSS. The findings above indicate that financial system is a significant conduit in attracting FDI inflows to boost economic growth in Nigeria.

The findings of this study have clear policy implications. The evidence of bi-directional causality between credit to the private sector relative to economic activities, the ratio of FDI and GDP; and the ratio of CPS and FDI is an indication of simultaneity between financial development and FDI, FDI and GDP as well as CPS and GDP. This emphasizes the significance of a well developed financial system in boosting inflows of foreign direct investment that has the capacity to support growth. This study, therefore suggests that greater emphasis be placed on comprehensive and sequential development of the country's financial system. Moreover, there is a need for monetary authority to be more prudent and cautionary in developing policies aimed at circumventing inflationary spiral and instability in managing the flows of money in the economic system. Additionally, economic policies aimed at improving FDI inflows need to be strengthened.

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Year	FDI/GDP	CPS/GDP	M2/GDP	GDPG
1981	3757.9	9.1	15.3	94.33
1982	5383.8	10.6	15.6	101.01
1983	5949.5	10.6	16.1	110.06
1984	6418.3	10.7	17.3	116.27
1985	6804	9.7	16.6	134.59
1986	9313.6	11.3	17.7	134.6
1987	9993.6	10.9	14.3	193.13
1988	11339.2	10.4	14.6	263.29
1989	10899.6	8	12	382.26
1990	1036.1	7.1	11.2	472.65
1991	12243.5	7.6	13.8	545.67
1992	20512.7	6.6	12.7	875.34
1993	66787	11.7	15.2	1089.68
1994	70714.6	10.2	16.5	1399.7
1995	119391.6	6.2	9.9	2907.36
1996	122600.9	5.9	8.6	4032.3
1997	128331.9	7.5	9.9	4189.25
1998	152410.9	8.8	12.2	3989.45
1999	154190.4	9.2	13.4	4679.21
2000	157508.6	7.9	13.1	6713.57
2001	161441.6	11.1	18.4	6895.2
2002	166631.6	11.9	19.3	7795.76
2003	178478.6	11.1	19.7	9913.52
2004	249220.6	12.5	18.7	11411.07
2005	324656.7	12.6	18.1	14610.88
2006	481239.1	12.3	20.5	18564.59
2007	552498.6	17.8	24.8	20657.32
2008	586309.8	28.5	33	24296.33
2009	811140	36.7	38	24794.24
2010	908880	18.7	20.4	54204.8
2011	1095840	16.9	19.2	63258.58
2012	1191740	20.6	19.5	71186.53
2013	1278670	19.7	18.9	80222.13

Source: Central Bank of Nigeria Statistical Bulletin 2014