Foreign Direct Investment and Stock Market Development in Nigeria

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***Abstract*: - This study examines the impact of stock market development on foreign direct investment inflows in the Nigerian economy. This was aimed at ascertaining how the development of the Nigerian Stock Exchange has stimulate the inflow of foreign direct investment to Nigerian businesses. The after effect research design was adopted to examine the dependent and independent variables in retrospect. Historical data spanning 1985 to 2018 was collated and estimated employing the Engle Granger error correction technique. The empirical results indicate that market capitalization and value of deals in the exchange exert a positive impact on foreign direct investment inflows to Nigeria. Although, further observations indicate that only market capitalization exert a statistically significant impact on foreign direct investment inflows to Nigeria. Furthermore, it emerged that all share index is nagative and has a statistically invalid impact on foreign direct investment inflows in Nigeria. The study concludes that market capitalization and value of deals which are a measures of stock market development stimulates foreign direct investment inflows to Nigeria. The study recommends the pursuit of policies of stability to ensure the attraction and retention of capital from overseas.**

I. INTRODUCTION

Foreign direct investment is a major source of external finance for developing countries like Nigeria. Existing literature posit that there is a positive relationship between stock market development and economic growth. Additionally, it is clear from 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 (Adam & Tweneboah, 2008).

The underdeveloped nature of the Nigerian economy has essentially hindered the pace of her economic growth and this has necessitated the demand for capital from overseas or foreign capital investment into the country, in order to supplement domestic capital. Nigeria as a developing country has adopted a number of measures aimed at accelerating growth and development in the domestic economy, one of which is to attract foreign direct investment. Irrespective of this, it is imperative to note that foreign direct investments and multinational investors are extremely sensitive to events in their host nations (more especially developing nations). The economic and political environments of developing nations are highly unstable (Waller-Hunter & Jones, 2002)due to lack of continuity in economic policies. This motivates investors to pull their investments and funds due to contrived economic policies (Yaqub, Adam, & Jimoh, 2013). The intense instability of capital from developing countries lead to rising inflation, cost of capital and declining employment figures which invariably render the host nation in an awkward position (Obadan & Obioma, 1999). These unwanted economic indicators are altogether signalled by the stock exchange which is a reliable gauge of the performance of businesses and the macro economy as indicated by the market capitalization; all share indexes, market turnover and the values of trades in the exchange.

It has long been recognised that the stock market is the foundation of any financial system. This is majorly as a result of the fact that the stock market provides the much needed funds for financing not only businesses and other economic institutions but also the programmes of government as a whole, on a long-term basis. It provides the conduit through foreign investors invest in overseas businesses. The stock market is thus, a major institution that propels an economy on track through sustainable investments. The intermediation role of the capital market in mobilizing long-term debt and equity finance for investments in long-term assets positions, render it a critical institution in driving investment, economic activity, and by extension, economic growth and development.

Given the centrality of the stock market and its role in creating the platform foreign capital inflow to the domestic economy as established in extant literature, the researcher decided to further interrogate this interaction and further to, expand the scope of the time series data with the supposition that the results may swing either way towards lending credence to its ability to stimulate the flow of capital from overseas.

II. REVIEW OF EMPIRICAL STUDIES

This section presents a review of related empirical studies on the impact of stock market development on foreign direct investment.

Aigheyisi (2016) examine the impact of development in stock market on foreign capital inflow and its impact on economic growth in Nigeria. Historical data spanning 1981 to 2014 was collated estimated employing the FMOLS technique. The results showed that there is a significant positive relationship between foreign capital inflow, investment within the country

and capital market development in Nigeria. It further emerged that the by-pass between the development of the stock market and capital from overseas exert a significantly nonlinear impact on economic growth in Nigeria. This implies the Nigeria capital market is not robust enough to stimulate economic growth via foreign capital inflow to the country. The drivers of economic growth according to the study are public expenditure on consumption and the degree of trade openness.

Arikpo and Ogar (2018) investigate the impact of stock market development on foreign capital inflow into Nigerian businesses. The dependent variable of the study is foreign direct investment, while the independent variables were market capitalization, number of listed corporations, all share index, turnover ratio and value of transactions in the Nigerian stock exchange. Consequently, historical time series data spanning 1972 to 2016 was collated and estimated using vector autoregressive model. The results indicate the existence of a significant linear relationship between foreign capital inflows and market capitalization, number of listed corporations, all share index, turnover ratio and value of transactions. The results averred that stock market development is a necessary stimulant to capital inflow to Nigerian corporations.

Adigun, Sakariyahu and Lawal (2017) examined the impact of foreign direct investment on stock market development in the era of post structural adjustment programme in Nigeria. Secondary data spanning 1986 to 2016 was collated and estimated using the Autoregressive Distributive Lag model to establish the relationship between the variables of the study. The dependent variable is market capitalization, while foreign direct investment is the explanatory variables and inflation and foreign exchange rate were used as the control variables of the study. The results indicated that capital inflow has a long run equilibrium relationship with the development of the Nigeria capital market. However, it also found the lack of short run equilibrium causal relationship between foreign capital inflows and stock market development in Nigeria.

Raza, Iqbal, Ahmed, Ahmed and Ahmed (2012) investigated the role of foreign capital inflow on stock market development in Pakistan. To achieve this, the study collated time series data spanning 1988 to 2009 on aggregate domestic savings, exchange rate and inflation in order to explain the effect foreign direct investment has on them. The analyses were done following the ordinary least square example to establish the relationship between the dependent variable and explanatory measures. Foreign direct investment and aggregate domestic savings were found to exert a linear significant relationship with market capitalization. This implies capital inflow and savings plays a significant role in enhancing the stock market development of a nation. It also emerged that inflation and exchange rate were negative and play a statistically insignificant role the development of her stock market.

Azeez and Obalade (2019) examine the factors determining the development of the Nigerian stock market from 1981 to 2017. The study regressed market capitalization as the dependent variable and employed gross domestic product, banking sector development, stock market liquidity, foreign capital inflow, the level of inflation and the level aggregate domestic savings in Nigeria. The autoregressive distributive lag model was employed to ascertain the long run equilibrium relationship and short run dynamics of the model. According to the results, the determinants of stock market development are the robustness of the banking sector, stock market liquidity and foreign direct investment inflows both in the long run and the short run. It also emerged that inflation and aggregate domestic savings were insignificant determinants of the stock market development in Nigeria.

Iriobe, Obamuyi and Abayomi (2018) investigated the impact of foreign portfolio investment inflows on the performance of the Nigeria capital market, using data spanning 2007 to 2017. The study thus relied on the ex post facto research design to examine the impact of the dependent variable of stock market development and the independent variable, foreign portfolio investment inflows in Nigeria using the autoregressive distributive lag model. The study that foreign portfolio direct investment inflows is a catalyst in the performance of the Nigerian capital market.

Musa and Ibrahim (2014) examined the effect of capital inflow, foreign exchange rate and inflation on stock market development in Nigeria. Time series data spanning 1981 to 2010 using the co-integration test to establish the existence of a long run relationship in the model and the error correct technique was also employed to determine the magnitude and direction of interaction amongst the variables of the study. The results indicate the existence of long term equilibrium relationship in the model. The study also found that there is an insignificant linear between capital inflows and stock market development. The measures of price stability showed mixed results. Inflation rate exerted an insignificant positive relationship with the dependent variable, this was however, found to be nonlinear and statistically insignificant between foreign exchange rate and stock market development in Nigeria.

Anthony-Orji, Orji and Ogbuabor (2018)study examined how the development of the Nigeria capital market stimulates the inflow of capital from overseas and how this foreign capital support economic growth in Nigeria. To achieve this, real gross domestic was used as the dependent variable, while market capitalization, all share index, aggregate savings, foreign capital inflow, degrees of trade openness and real exchange rate. Historical data spanning 1985 to 2016 was called and analysed using the ordinary least square technique and Johansen co-integration technique to ascertain the if a long run equilibrium relationship exist or not in the model. The co-integration results indicated the existence of long run equilibrium relationship in the model. The error correction results further indicate that foreign exchange rate, degree of

trade openness, foreign capital inflow and all share index exert negative and statistically insignificant impact on economic growth at the 5% tolerance level. The results further averred that market capitalization stimulates economic growth positively and significantly.

Akinmulegun (2018) examined the influence of the development of the Nigeria stock market on foreign capital inflows in Nigeria. The study collated time series data spanning 1985 to 2016 and analysed it using the vector error correction technique and granger causality test. The empirical results showed that market capitalization exert a nonlinear significant impact on foreign capital inflow in Nigeria. All share indexes on the other hand stimulate the inflow of foreign direct investment to Nigerian business corporations.

Ajayi, Adejayan and Obalade (2017) examined the role the development of the Nigerian capital market plays in influencing the flow of foreign capital inflow to Nigerian businesses. Historical data spanning 1986 to 2014 was collected and estimated using the error correction technique. The study assumed that market capitalization which is the measure of stock market development is a function of foreign direct investment and foreign portfolio investment in Nigeria. However, the results indicated that foreign portfolio foreign portfolio investments in Nigeria support the development of the Nigerian stock exchange positively but it only foreign direct investment inflows that substantially influence the development of the Nigerian stock exchange.

Olugbenga and Grace (2015) study assumed that foreign capital investment stimulate the robustness of the development of the Nigerian stock market. Secondary data covering 1970 to 2010 was collated and estimated using the ordinary least square. The results from the estimation portend that capital investment from overseas stimulates the performance of the capital market. This implies that foreign capital inflow determines the Nigerian capital market.

Idenyi, Ifeyinwa, Obinna and Promise (2016) study focused on the growth stimulating role foreign capital inflow has played in the growth of the Nigerian Stock Exchange (NSE) using historical data spanning 1984 to 2015. The variables used to measure the components of the study were market capitalization, foreign capital inflows and the value of imports and exports in Nigeria. The units of analysed employed were the vector error correction technique and the granger causality test. The empirical results indicate that foreign capital inflows and the value of exports exert a nonlinear impact on the indicator of stock market development. However, imports exerted a linear impact on the NSE. The causality test results averred that neither of the foreign direct investment and market capitalization has any causal relationship. The other variable showed that there is a one direction relationship.

Abubakar and Danladi (2018) investigated the effect of capital from overseas on the development of the Nigerian Stock Exchange (NSE). Historical data spanning 1981 to 2016 was collated on the study variables of market capitalization, foreign direct investment, foreign exchange rate, the general price level and aggregate savings were examined in retrospect using the autoregressive distributive lag model. The results indicate that foreign direct investment, aggregate savings and foreign exchange rate exert significant positive effect on stock market development in Nigeria. The general price level which was measured by the inflation rate was found to be a negative and inconsequential role in the development of the Nigerian stock market. This implies that the determinants of stock market development in Nigeria are foreign direct investment, aggregate domestic savings and foreign exchange rate.

Olotu and Oliogu (2014) investigated the effect of foreign portfolio investment on stock market development in Nigeria, using data covering 1980 to 2010. The error correction technique of data analysis was employed to determine the effect of FDI on the NSE. Domestic investment, degree of trade openness, real lending interest rate was is statistically insignificant in determining the growth of the NSE. Government spending on financial assets, foreign direct investment and foreign portfolio investment were found to be exerting a statistically significant impact on the robustness of the NSE. Otchere, Soumaré and Yourougou (2011) found that both foreign direct investment and financial market development in Africa tend to influence each other simulteanously. It was also found that foreign capital inflow stimulates economic growth in Africa.

Araoye, Ajayi and Aruwaji (2018) investigated the growth stimulating influence of the robustness of the stock exchange of Nigeria on its economic growth. Secondary data spanning 1985 to 2014 was collected for the analysis of the interaction of the variables of the study, which are real GDP, capital, labour, market capitalization and the market turnover ratio. These variables were examined in retrospect using the error correction technique. The results indicate that the NSE has positively impact on the economic growth rate of the country, although this was found to be statistically inconsequential in spurring national output.

III. METHODOLOGY

The after effect research design was adopted to examine the components of the study in retrospect. To achieve this, historical data spanning 1985 to 2018 was collated and analysed using econometric techniques. The time series data were obtained from the Central Bank of Nigeria statistical bulletin covering 33 years.

The units of analysis adopted in the study were the descriptive statistics, Augmented Dickey-Fuller test, the Johansen co-integration test and the error correction technique. These were altogether used to observe econometric traditions of data stationarity, test of long run equilibrium relationship that set pace for the error correction process.

Following extant empirical studies reviewed in this paper, the model is specified as follows;

FDI = f (MCAP, ASI, MT)

This is further expressed in econometric terms as;

$FDI_t = go + g_1MCAP_t + g_2ASI_t + g_3MT_t + Q_t$

Where;

FDI is foreign direct investment, the dependent variable of the study.

MCAP is market capitalization of the Nigerian Stock Exchange.

ASI is the all share index of the Nigerian Stock Exchange.

MT is the market turnover (otherwise known as the value of deals) in the Nigerian Stock Exchange.

g_0 is the intercept of the model, $g_1 - g_3$ are the coefficients of the explanatory variables, t is the time series and Q is the disturbance term of the model.

IV. ECONOMETRICS RESULTS

4.1 Descriptive Statistics

This section presents the results of the descriptive statistics test results.

Table 1: Descriptive statistics results

	FDI	ASI	MCAP	MT
Mean	392.0551	186795.5	5150.682	403987.9
Median	132.4337	122220.9	662.5000	57683.80
Maximum	1360.308	605096.4	21128.90	2350876.
Minimum	0.735800	1407.400	6.600000	225.4000
Std. Dev.	428.0249	181967.9	6961.907	584991.2
Skewness	0.768154	0.697463	1.020363	1.602970
Kurtosis	2.239353	2.412605	2.497187	5.173119
Jarque-Bera	4.040888	3.149921	6.073903	20.62568
Probability	0.132597	0.207016	0.047981	0.000033
Sum	12937.82	6164253.	169972.5	13331600
Sum Sq. Dev.	5862571.	1.06E+12	1.55E+09	1.10E+13
Observations	33	33	33	33

The descriptive statistics show that the variables have equal observations of 33. The means of the variables are; FDI (392.0551), ASI (186795.5), MCAP (5150.682) and (403987.9). Jarque-Bera statistics shows that, apart from MT which is statistical zero, FDI, ASI and MCAP are all normally distributed. The results also show that all the variables are positively skewed.

The standard deviation reported as follows; FDI (428.0249), ASI (181967.9), MCAP (6961.907) and MT (584991.2). The values indicate that all the other variables are noticeable dispersed around and below their respective median values.

4.2 Augmented Dickey-Fuller Statistics

The summary unit root test statistics are presented in table 2.

Table 2: Augmented Dickey-Fuller Unit Root Test Results

Variables	ADF Statistics @ Level	Critical Value @ 5%	ADF Statistics @ 1st difference	Critical Value @ 5%	Decision
ASI	-1.182214	-2.954021	-5.925983	-2.960411	I(1)
FDI	-1.072582	-2.957110	-7.180124	-2.960411	I(1)
MCAP	0.487502	-2.954021	-5.813428	-2.957110	I(1)
MT	-2.967767	-2.954021	-6.011522	-2.967767	I(1)

The summary results indicate that all the variables were not stationary at their level. This validate the long held belief that macroeconomic data at level is not stationary and that carrying out the ordinary least square process on non-stationary series will lead to spurious results. Thus, the data was differenced to avoid nonsense results. The augmented Dickey-Fuller statistics at the first difference indicate that all the variables are stationary at their first difference.

4.3 Johansen Co-integration Test Results

Table 3 presents the Johansen co-integration test results of the study.

Table3: Summary Johansen co-integration Results

Sample (adjusted): 1987 2017
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: FDI ASI MCAP MT
Lags interval (in first differences): 1 to 1
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.901618	127.6196	47.85613	0.0000
At most 1 *	0.757600	55.73371	29.79707	0.0000
At most 2	0.316385	11.80157	15.49471	0.1667
At most 3	0.000336	0.010405	3.841466	0.9185

The results show the existence of long run equilibrium relationships in the model. Specifically, the long run equilibrium test results indicate the existence of two long run relationships in the model. This gives econometric credence to kick start the error correction process.

4.4 Error Correction Results and Interpretations

Table 4 presents the results of the error correction process estimated using the least square technique

. Table 4: Error Correction Results

Dependent Variable: D(FDI)
Method: Least Squares
Date: 02/06/20 Time: 07:52
Sample (adjusted): 1986 2017
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.19431	27.88902	0.903377	0.3743
D(MCAP)	0.022530	0.018834	1.998696	0.0112
D(ASI)	-0.000645	0.000475	-1.357546	0.1858
D(MT)	3.04E-05	9.00E-05	0.337189	0.7386
ECM(-1)	-0.377137	0.141056	-2.673677	0.0126

R-squared	0.589611	Mean dependent var	23.88113
Adjusted R-squared	0.564368	S.D. dependent var	164.0426
S.E. of regression	148.1507	Akaike info criterion	12.97694
Sum squared resid	592613.3	Schwarz criterion	13.20596
Log likelihood	-202.6310	Hannan-Quinn criter.	13.05285
F-statistic	2.751831	Durbin-Watson stat	1.951546
Prob(F-statistic)	0.048558		

The crux of the study is addressed by the results in table 4. The estimates indicate that the adjusted coefficient of determination is 0.564368. This implies that approximately 56 percent of variation in private sector growth is collectively explained by the explanatory indicators. This indicates that the model is well fitted. Furthermore, the adjusted coefficient also indicates that the remaining 44 percent is explained by variables not captured in the model.

The Fisher's statistics is 2.751831 with a probability value of less than 0.05. This implies that the model is statistically significant. More precisely, this means that the independent indicators can collectively influence foreign direct investment growth in Nigeria.

The coefficient of market capitalization is positive. This indicates that market capitalization has a positive impact on foreign direct investment inflow to Nigeria. This further

allude that increase market capitalization stimulates the inflow of capital from overseas. Further observations indicate that market capitalization exerts a statistically significant role in the flow of capital to Nigerian corporations. This implies that as the market value of publicly traded corporates appreciates, so does the inflow of foreign direct investment to Nigeria. This was similarly the findings and conclusions drawn by Arikpo and Ogar (2018) and Araoye et al. (2018).

The coefficient of all share index was found to be negative. This implies that the all share index, which is an index of the prices of the securities traded in the Nigerian Stock Exchange exerts a nonlinear impact on the foreign capital inflow to the economy. Further observations indicate that the all share index is statistically inavalid in this respect. The study of Anthony-Orji, et al (2018) draw similar conclusions with this study.

The coefficient of the value of deals in the Nigerian Stock Exchange is positive. This implies that the value of deals in the exchange has a positive impact on foreign capital inflow to the economy.This further suggests that increase in the value of deals in the stock exchange stimulates the inflow of capital from overseas. Further observations indicate that the value of deals in the stock exchange exerts a statistically insignificant role in the flow of capital to Nigerian corporations.

V. CONCLUSION

This study examines the impact of stock market development on foreign direct investment inflows in the Nigerian economy. This was aimed at ascertaining how the development of the Nigerian Stock Exchange has stimulate the inflow of foreign direct investment to Nigerian businesses. Historical data was collated and estimated employing the Engle Granger error correction technique. The empirical results indicate that market capitalization and value of deals in the exchange exert a positive impact on foreign direct investment inflows to Nigeria. Although, further observations indicate that only market capitalization exert a statistically significant impact on foreign direct investment inflows to Nigeria. Furthermore, it emerged that all share index is nagative and has a statistically invalid impact on foreign direct investment inflows in Nigeria.The study concludesthat market capitalization and value of deals which are a measures of stock market development stimulates foreign direct investment inflows to Nigeria.The study recommends the pursuit of policies of stability to ensure the attraction and retention of capital from overseas.

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