Nigeria Stock Market Development and Economic Growth: A Time Series Analysis (1993 – 2013)

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Abstract: This study examined the impact of stock market development and economic growth; and also examined the direction of causality between stock market development and economic growth in Nigeria. This study applied Johansen co-integration model to evaluate the stock market development and economic growth and causal relationship using four measures of stock market development indices: market capitalization, number of deals, all share index and total value of market transaction. The study established the existence of co-integration for all the stock market development measures. Results obtained for all measures of stock market development indices point to the existence of a positive relationship between stock market development and economic growth except for market capitalization and total value of market transaction. The findings from pair-wise Granger Causality test suggest the existence of a unidirectional relationship between stock market development and economic growth. This entails that the state of development of the economy will determine the development and operations of the stock market. This study also reveals that there is correlation between stock market development and economic growth, via all share indexes, market capitalization, number of deals and total market transaction value. The Nigerian government should therefore create an enabling environment that would involve, amongst other things, putting in place key legislation to cover investment protection, friendly taxation policies and guaranteeing property rights, so as to stimulate investments. In addition, policies to enhance the trading of securities should be encouraged. In fact, the demutualisation of the Nigeria Stock Exchange needs fast-tracking measures. This has the potential of stimulating creation of financial instruments capable of deepen the operations of the Nigerian capital market and consequently improving liquidity
Keywords: Stock market, Economic growth, and capital market

INTRODUCTION

Stock markets are one of the relevant constituents of the financial system, which help firms or companies to raise capital by issuing their shares and also create an enabling environment which allows for trading of the shares. Alile[1]argues that the determination of the overall growth of an economy depends on how effectively and efficiently the stock market performs in its locative functions of capital. When the stock market mobilizes capital, it simultaneously allocates a larger portion of the same to firms with relatively high prospects as indicated by their returns and level of risk. The significance of this function is that capital resources are channelled by the mechanism of the forces of demand and supply to those firms with relatively high and increasing productivity thus enhancing economic expansion and growth.

The stock market development has played an important role in promoting economic growth in the Nigerian economy [2-5]. Yet, Odhiambo[6] explained that research on development and economic growth has

been inconclusive. This suggests that results are sensitive to the model employed and type of data used in the analysis. Outcome also differs from country to country over the time period.

Thus the growing importance of stock market in accelerating economic growth among nations has encouraged researchers to explore the relationship between stock market development and economic growth. The motivation is derived primarily from the vivid policy implications of the findings of such studies on the economy. Some related studies include the studies of Soumya for India[7], Bayar, Kaya and Yildrim (2014) for Turkey[8], Osho [9] as well as Oladipo and Adaramola [10] for Nigeria.

The liberalization and reforms in the capital market brings tremendous changes with respect to the volume of transactions, number of deals and value of securities traded as well as the number of securities listed in the market, yet there are concerns on the impact at the macro – economic level.

As much as the stock markets are important in facilitating privatization channels and diversification of the financial sector services, they also offer the investors alternative investments outlet. However, stock markets face serious constraints if not properly monitored and adequate measures taken to curb any externalities.

Many stock markets especially those in developing countries face constraints which result in serious implications such as liquidity issues, absence of activities and absence of well-developed investors' base. These are likely to hamper the effectiveness of the stock market towards economic growth.

The objectives of this study are to: examine the causal nexus between stock market development and economic growth in Nigeria; and examine the direction of causality between stock market development and economic growth. And, the formulated hypotheses formulated in null format are: Stock market development has no positive and significant influence on economic growth; and there exist no significant causal direction between stock market development and economic growth.

This work is divided into seven sections: the introduction; conceptual framework; theoretical framework; empirical review; research methodology; data presentation and analysis; and summary of findings, conclusion and recommendations.

CONCEPTUAL FRAMEWORK
The relationship between stock market development and economic growth has been is such that a positive relationship is expected. Stock markets play critical role in intermediation between surplus units (savers) and deficit units (i.e. parties that need fund for productive projects). Levine [11] explains that well functioning stock markets have often reduced problems of asymmetric information and thereby reduce the costs of lenders and borrowers. This ensures increased productivity through efficient and effective allocation of resources. He further relates that countries with a well-developed stock markets system have been associated with a better per capita income than countries that do not[11].

Financial markets including stock markets play an intermediary role in an economy in terms of the allocation and flow of funds. They provide various mechanisms through which funds for projects are available to the firms that needs the funds. While banks mainly play a role in providing debt financing through access to line of credit in short period equity financing is sourced mainly through the stock market. A well-

functioning and developed stock market ensures that there is economic growth through the reduced cost of capital or equity for listed companies and also boost domestic savings and increase the equity and level of investment[12].

A liquid financial market allows saving and investing in long term projects that have pay outs in the long term. As there is ease of entry and exist, an investor can sell equity at any time and thereby increasing investor confidence in long term projects. Stock markets provide a medium where there can be hedging of risks as they integrate, and allow investors to diversify risks. The other role a stock market plays in the economy is that resources are allocated to the most efficient places as investments mostly go to high risk, high return long term projects by government and private sector. This eventually leads to economic growth.

Despite the stock market laudable performance and benefits, it is still surrounded with some weakness in Nigeria. Osho, [9] explain that the bureaucratic nature of the Securities and Exchange Commission (SEC) is hindrance to easy processing of application submitted to it; the private sector which most enterprises belong is not used to the *"leap and tumble"* system of public sector, but operates by *leaps and bounds;* the fee charged by the Exchange is exorbitant and constitute a great burden on firms for whose sake the Second Tier Securities Market was established. The stock market is endowed with the capacity to create employments.

THEORETICAL FRAMEWORK
A school of thought argues that the financial system is not relevant for economic growth; another stress the necessity of financial system in mobilizing savings, allocating capital, exerting corporate control, and risk management. In addition, some theories provide a conceptual basis for adhering to the fact that more efficient stock markets boost economic growth. Stern [13]; Meier and Dudley[14] are of the idea that financial system plays an inconsequential role in economic development. Lucas [15] also observed that economists frequently exaggerate the role of financial factors in economic growth [15]. Such view is not restricted to popular observation that argues that financial system does not lead to economic growth; financial development simply responds to developments in the real sector. Thus, many influential economists give a very minor role, if any, to the financial system in economic growth.

Another school of thought stresses the importance of financial system in economic growth. For instance, some researchers [16-19] gave conceptual

descriptions of how; and empirical examples of when the financial system affects economic growth. Similarly [20-23], show that the measures of banking development are strongly correlated with economic development in a broad cross-section of countries. Thus, a well-functioning financial system is critical for economic growth.

Stock markets may affect economic activity through their liquidity. Many high-return projects require a long-run commitment of capital. Investors, however, are generally reluctant to relinquish control of their savings for long. Therefore, without liquid markets or other financial arrangements that promote, less investment may occur in the high-return projects. It has [11,25] shows that stock markets may provide liquidity: savers have liquid assets - such as equities – while firms have permanent use of capital raised by issuing equities. By implication, liquid stock markets reduce the downside risk and cost of investing in projects that do not pay off for a long time. With a liquid equity market, the initial investors do not lose access to their savings for the duration of the investment projects because they can quickly, cheaply, and confidently sell their stake in a company. Thus, more liquid stock markets ease investment in long-run, providing more profitable projects, thereby improving the allocation of capital and enhancing prospects for long term growth. However, [24] show the effects of the greater liquidity on growth. They revealed that by reducing uncertainty, greater liquidity may reduce saving rates enough to slow down economic growth.

EMPIRICAL REVIEW
Schumpeter [19] explains the relevance of financial sector development in promoting economic growth in his seminal works. His study revealed that a well-functioning financial system advances technological innovations by providing sufficient fund to the entrepreneurs that eventually turn to enhance economic growth. Other [17-18] found strong and positive correlations between the degrees of financial market development and the rate of economic growth. King and Levine [23] confirmed a very strong relationship between each of the four financial development indicators. Other [25-28] also agreed that financial markets development pushes economic growth. Similarly, [29-30] reported that financial institutions have a critical role to play for firm and industrial expansion. Jappelli and Payano [31] and Ram [32] incorporated the issue of causality and endogeneity in establishing the relationship between stock market development and economic growth. Beck and Levine [33], and Xu [34] found out that financial development is a good predictor of economic growth using dynamic panel estimator to overcome the issue of dynamics in the system. Thus, a more effective and efficient

financial system will always enable an economy to enhance its real Gross Domestic Product (GDP) growth. Decision makers will therefore make policies towards reducing market failures by stipulating the services that makes easy transaction, fund mobilization and application of corporate governance. By so doing economic growth is ultimately advanced [35].

The contribution of the stock market to economic growth is indisputable and unalloyed. An active and well-functioning stock market contributes to economic growth by increasing the liquidity of financial assets, making risk diversification possible, promoting feasible investment decision, and influencing corporate governance[36]. These activities ensure that investors receive interest on their investment, which ultimately leads to sustainable economic growth. Of course, Ahmed [37] shows that the stock markets have a considerable relationship with real and financial sectors of the economy. Developed market economies or countries doing well in terms of GDP performance tend to experience gain in domestic stock exchanges" and the stock market and GDP tend to move together[38]. This relationship can be described as causal affect between future economic growth and stock prices.

It is argued often times that stock market can predict the economic growth. It [39-40] shows that large increase in economic growth, and the large decrease in stock prices is the reflection of future economic recession. Randall, Hanousek and Campos [41] investigated whether financial development causes economic growth for sixty four countries using data from 1985 to 1997 on market capitalization over GDP, turnover ratio, and change in the number of domestic shares listed. Results of the cross – country growth regression suggests a positive and causal relationship going from stock market development to economic growth, especially from the emerging markets. Tuncer and Alovsat[42] examined the causal relationship between stock market development and economic growth on the time series data compiled from twenty (20) countries for the year 1981 through 1994. The study used annual data on real GDP, market capitalization, volume of transaction, and the causality test based on Granger definition revealed a two – way causation between stock market development and economic growth. Mohammed, Hossain and Sadi, [43] shows a long and short correlation between stock market development and economic growth. The Granger test suggests a unidirectional causality relationship.

Shahbaz, Ahmed and Ali, [44]reveals a very strong relationship between stock market development and economic growth. The Engle-Granger causality estimation confirms in the long run, there is bi-

directional causality between stock market development and economic growth. However, there exit only one-way causality; i.e. from stock market development to economic growth [44], from economic development to market performance[45]. Eita and Jordan [46] studied the causal relationship between financial development and economic growth in Botswana for the period of 1977 to 2006, using the Granger causality through co - integration vector auto regression method. The result showed a stable long run relationship between financial development and economic growth. El-Wassal [47] examined the relationship between stock market growth and economic growth, privatization, stock returns in twelve (12) emerging economies from 1988 to 2000 using monthly data, both the Johanseen co-integration and Granger causality tests was employed. His findings postulates a long run relationship between stock market liquidity and size and real activity, privatization, and stock return in five countries, India, Korea, Malaysia, Philippines and Zimbabwe. The results of the Granger causality tests indicate that there is a bi-directional relationship between stock market growth and real economic activity, privatization and stock returns for most of these countries. The result validates the co-existence of both the supply leading and demand following hypothesis in the intermediate stages of the economic growth i.e., the existence of a bi-directional relationship between stock markets and economic growth

Cheng [48] applied Hsiao's version of the Granger causality test, and co-integration analysis as to examine the nature of the empirical relationship between financial deepening and economic growth in Korea and Taiwan. Cheng's results revealed causality runs from financial development to economic growth in post war Korea and Taiwan. In addition, Cheng found that with respect to Korea, no co-integration test could be performed and for Taiwan financial development and economic variables are not co-integrated. Fisher and Thurman [49] showed that causality did not run from financial variable to real sector in Sweden in the 19th century (1861 to 1910). Rather causality ran from real sector to financial variable, which fulcrum is hinged to the demand-following hypothesis. On the contrary, Ahmed and Ansari [37] found that Granger tests provide support for the supply-leading hypothesis in India, Pakistan and Sri-Lanka from 1973 to 1991.

The relationship between financial development and economic growth is an important policy issue, and it is not only a matter of academic interest [50]. Financial development is explained in two ways; either as bank-based or stock-market based. Protagonist is of the view that banking development promotes economic development, and demerits associated with stock-market based development can be avoided by establishing a bank-based system. On the other hand, stock-market based economy gave a contradicting view, which upholds that a properly functioning stock market help in management of risk, promote growth and profit maximization. In this regard, the stock markets are considered to be the best predictor of the economy.

There exist some other researches dealing with risk diversification and economic growth. Vitchet[51] stated that economic growth and risk diversification does not appear to have any impact on stock market return across emerging markets. Pagano [52] has shown that an entrepreneur with borrowing constraints can improve his risk-sharing opportunities by going public and using the additional liquidity to buy shares of other companies, thereby encouraging marginal productivity of capital. Schmitz [53] in his analysis of twenty two (22) emerging markets shows strong evidence for pro-cyclicality of capital gain on domestic stock markets both over short and medium term horizon. This implies that domestic output fluctuations can be hedged through cross-border ownership of financial markets. Kose, Prasad and Terrones [54] found that emerging market economies have not benefitted from improved international risk sharing over the last decades when compared with industrial countries. Bracke and Schmitz [55] suggested for industrial countries net capital gain on international portfolio equity positions tends to be counter cyclical and that countries with more counter cyclical gain tend to obtain better consumption risk sharing. Barro [56] study indicated that stock market development does not support as a leading indicator of economy.

Ogboi and Oladipo [57] examined stock market-economic growth nexus in the Nigeria economy for the period of 1981 to 2008. The findings portrayed that there was un-directional causality between stock market and economic growth. Ozurumba and Chigbu [4] confirm an un-directional causality running from economic growth to capital market. The result validates the endogenous growth theory implying that the state of Nigeria economy will determine the capital market performance. Osho [9] using data spanning from 1980 to 2010 show that there is a linkage between capital market efficiency and economic growth. Ujunwa and Chikeleze [58] found that there is a bi-directional relationship between stock market development and economic growth. This result is in line with the findings of other [59-61]. Owolabi and Ajayi [61]tested whether or not stock market promote economic growth in Nigeria for the period of 1971 to 2010 by using annual data on real GDP, gross capital formation, foreign direct investment, capital market index and debt overhang. Their study finds a positive relationship between economic growth and all the stock market development

variables used. Igbodika[62] investigated the nexus between stock market development and economic growth of Nigeria by using real GDP, market capitalization ratio, value traded ratio and turnover ratio for the period of 1999 to 2011. Result of the study indicated that there is overall significant relationship between stock market performance and economic growth within the period under the study.

Muktar and Dantama [63] investigated the relationship between Nigeria capital market and economic growth using time series data from 1986 to 2012. The results indicated a long run relationship between capital market indicators and its subsequent impact on the Nigeria economy. Oke[64] identified a long positive relationship between capital market operations and economic performance in the short run with all the variables showing positive relationships with the GDP. Nurudeen[65] investigated whether stock market development raises economic growth in Nigeria, by employing Error Correlation approach. The result revealed that stock market development increases economic growth and this is consistent [66-67]. It is also [68-71] show that show, stock market development facilitates economic growth.

This research contributes to the existing debate on the stock market and economic growth by providing additional evidence in support of the endogenous growth theories for a single developing country.

RESEARCH METHODOLOGY

This study adopts a test of causation in order to look at the nexus between stock market development and economic growth in Nigeria over a twenty one year period from 1993 to 2013. The variables used in the study are Index of Industrial Production (IIP) as a replacement for the Gross Domestic Product (GDP), All Share Index (SHIDEX), Market Capitalization (MKCAP), Number of Deals (NOD) and Total Market Transaction Value (TMTV). Secondary data extracted were on an annual basis as provided in the various sourced official reports and publications.

Our model is based on Demirgue Kunt and Levine [29] which investigated linkages between stock market development and economic growth. The model specifies that economic growth (proxied by GDP) is significantly influenced by capital market and capital market indices: All share indexes, total market transaction value, number of deals and market capitalization. In this work the index of industrial production is included and used as a proxy to GDP.

The model specified as follows:
$$GDP = f(MAKCAP, NOD, SHIDEX, TMTV) \quad \text{-- (1)}$$
$$IIP = f(MAKCAP, NOD, SHIDEX, TMTV) \quad \text{-- (2)}$$

Thus, the multiple regression function will be:
$$LogGDP_t = \beta_0 + \beta_1 LogMAKCAP_t + \beta_2 LogNOD_t + \beta_3 LogSHIDEX_t + \beta_4 LogTMTV_t + U_t \text{ -- (3)}$$
$$LogIIP_t = \beta_0 + \beta_1 LogMAKCAP_t + \beta_2 LogNOD_t + \beta_3 LogSHIDEX_t + \beta_4 LogTMTV_t + U_t \text{ ---- (4)}$$

Definition of variables:

GDP	=	Gross Domestic Product
IIP	=	Index of Industrial Production
$MAKCAP$	=	Market Capitalization
NOD	=	Number of Deals
$SHIDEX$	=	All Share Index
$TVMT$	=	Total Market Transaction Value
U	=	Stochastic or disturbance
t	=	Time period under investigation
β_0	=	Intercept or level of economic growth that is Independent

The estimation of the parameter of relationship is done using an Ordinary Least Square (OLS) regression method using econometric view (E-views) software package. The Unit Root tests using Augmented Dicky-Fuller (ADF) and Phillips-Perron tests, Granger Causality test and Johansen co-integration test were carried out. Thus, we hypothesised:

$$GDP_t = \sum_{i=1}^{n} a_i SM_{i-1} + \sum_{j=1}^{n} \beta_j GDP_{t-j} + U_{1t} \dots\dots\dots\dots\dots\dots\dots (5)$$

$$SM_t = \sum_{i=1}^{n} \gamma_i SM_{i-1} + \sum_{j=1}^{n} \delta_j IIP_{t-j} + U_{2t} \dots\dots\dots\dots\dots\dots\dots\dots (6)$$

The distribution of U_{1t} and U_{2t} is uncorrelated by assumption. From equation (5) it can be said that current GDP/ or IIP is related to lag values of it and that of SM (Stock market development), and equation (6) postulates same behaviour for SM. Both equations can be obtained by Ordinary Least Squares (OLS).

We formulated that: Stock market development has no positive and significant influence on economic growth; and there exist no significant causal direction between stock market development and economic growth. Yet, four different hypotheses can be described from equations (5) and (6):

a. Unidirectional causality: Stock market development (SM) increases the prediction of the economic growth (GDP) but not vice versa. Therefore, $\sum_{i=1}^{n} a_i \neq 0$ and $\sum_{i=1}^{n} \delta_i \neq 0$

b. Unidirectional causality: Economic growth (GDP) increases at the prediction of the stock market development (SM) but not vice versa. Therefore, $\sum_{i=1}^{n} a_i \neq 0$ and $\sum_{i=1}^{n} \delta_i \neq 0$

c. Bidirectional (or feedback) causality: In this case $\sum_{i=1}^{n} a_i \neq 0$ and $\sum_{i=1}^{n} \delta_i \neq 0$ the prediction of the growth rate of the stock market development (SM) index increases if there is a growth in the economy (GDP) and vice versa.

d. Independence between the variables: No Granger causality in any direction. Therefore, $\sum_{i=1}^{n} a_i \neq 0$ and $\sum_{i=1}^{n} \delta_i \neq 0$

Table 1 shows the expected signs of the independent variables.

Table 1: A Priori Expectations

Independent Variables	Expected Signs
Market Capitalization (MKCAP)	+
Number of Deals (NOD)	+
All Share Index (SHIDEX)	+
Total Value of Market Transaction (TVMT)	+

DATA PRESENTATION AND ANALYSIS

Appendix 1 shows the data: Index of industrial production and their corresponding data on gross domestic product at 1990 factor cost, while in Appendix 2 the data on stock market development indices (market capitalization, number of deals, all share index and total value of market transaction) were depicted.

The relevant output data generated from the input data include:

Table 2: ADF Test Result for all the variable

Variables		ADF STATISTIC			
		Level		1st Difference	
		Constant & no Trend	Constant & Trend	Constant & no Trend	Constant & Trend
IIP		-2.417044	-2.364847	-3.582214	-3.475120
GDP		-3.63448	-2.704719	-7.307724	-8.745809
MKCAP		-1.288543	-2.069541	-3.552156	-3.588265
NOD		-2.237712	-3.600967	-7.138182	-6.983943
SHIDEX		-2.109575	-2.238275	-3.361416	-3.354519
TMTV		-1.452268	-1.704537	-3.506398	-3.693510
Critical Values	1%	-3.808564	-4.498307	-3.831511	-4.532598
	5%	-3.020686	-3.658446	-3.029970	-3.673616
	10%	-2.650413	-3.268973	-2.655194	-3.277364

Source: Ouput data using the E-views

Analysis: A necessary but not sufficient condition for co-integrating test is that each of the variables be integrated of the same order. The Johansen co-integration approach uses two statistic tests namely: the Trace test and the likelihood Eigen value. The first row in each of the table test the hypothesis of no co-integrating relation, the second row test the hypothesis of one co-integrating and so on, against the alternative of full rank of co-integration. The results are shown in Table 3a and Table 4b.

Table 3a: Co-integration Test Result between the Variables: LNIIP LNMKCAP LNNOD LNSHIDEX LNTMTV
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen Value	Trace Statistic	0.05 Critical Value
None *	0.907575	93.19502	69.81889
At most 1 *	0.704056	47.94921	47.85613
At most 2	0.591887	24.81509	29.79707
At most 3	0.253453	7.787060	15.49471
At most 4	0.110903	2.233424	3.841466

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Ouput data using the E-views

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigen Value	Maximum Eigen value Statistic	0.05 Critical Value
None *	0.907575	45.24581	69.81889
At most 1*	0.704056	23.13412	47.85613
At most 2	0.591887	17.02803	29.79707
At most 3	0.253453	5.553636	15.49471
At most 4	0.110903	2.233424	3.841466

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Ouput data using the E-views

Table 3b: Co-integration Test Result between the Variables: LNGDP   LNMKCAP LNNOD LNSHIDEX LNTMTV
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen Value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.950621	121.7800	88.80380	0.0000
At most 1 *	0.730846	64.62358	63.87610	0.0432
At most 2	0.645574	39.68660	42.91525	0.1014
At most 3	0.554490	19.97872	25.87211	0.2270
At most 4	0.215709	4.616537	12.51798	0.6520

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigen Value	Maximum Eigenvalue Statistic	0.05 Critical Value	Prob.**
None *	0.950621	57.15645	88.80380	0.0000
At most 1*	0.730846	24.93698	63.87610	0.0432
At most 2	0.645574	19.70788	42.91525	0.1014
At most 3	0.554490	15.36219	25.87211	0.2270
At most 4	0.215709	4.616537	12.51798	0.6520

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Ouput data using the E-views

From the table 3a and table 3b, the Trace and Maximum Eigen value are high**.** The result from the table indicates the presence of two co-integrating equations at 5% significance level which implies that IIP (as proxy to GDP) and stock market are co-integrated. This reveals that there is a long run relationship between stock market and economic growth indicators.

TESTING HYPOTHESIS ONE

The first hypothesis proposed that: Stock market development has no positive and significant influence on economic growth. The relevant output data are depicted as follows:

Table 4a: Ordinary Least Square Equation for Stock Market Development indicators where IIP is a proxy to GDP

Dependent Variable: IIP				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LNMKCAP	-0.091120	0.047870	-1.903479	0.0751
LNNOD	-0.008599	0.014038	-0.612557	0.5488
LNSHIDEX	0.120663	0.065058	1.854691	0.0822
LNTMTV	0.027134	0.041645	0.651552	0.5239
C	4.225627	0.391247	10.80042	0.0000
R-squared	0.317954	Mean dependent var		4.904148
Adjusted R-squared	0.147443	S.D. dependent var		0.080967
S.E. of regression	0.074760	Akaike info criterion		-2.144812
Sum squared resid	0.089425	Schwarz criterion		-1.896116
Log likelihood	27.52053	F-statistic		1.864708
Durbin-Watson stat	1.110826	Prob(F-statistic)		0.165942

The result in Table 4a revealed that two of the variables (market capitalization and all share index) are statistically significant at 10% level of significance while the other two variables (number of deals and total market transaction value) are not statistically significant. On the basis of a priori expectation the coefficient of two variables i.e. log all share index (LNSHIDEX) and log total market transaction value are positively signed while the coefficient of log market capitalization (LNMKCAP) and log number of deals (LNNOD). Log all share indexes is significant at 10% which implies that 10% increase in LNSHIDEX leads to 12% increase in IIP. It is also found that log market capitalization is significant at 10% level of significant; this implies that 10% increase in LNMKCAP leads to 9.11% decrease in IIP. Log number of deals is not statistically significant which implies that a percent increase in LNNOD tends to cause 0.859% reduction in IIP. Log total market transaction value is not statistically significant and this implies that a percent increase in the TMVT tends to cause 2.713% increase in IIP.

Furthermore, the Durbin-Watson value of 1.110826 shows that there is element of positive autocorrelation meaning that there is a linear relation between IIP and the independent variables. The t-value of LNMKCAP (-1.903479) which is negatively signed has significant impact on IIP. The negative signed of

the LNMKCAP may not be unconnected with the yet shallow nature of the Nigeria Capital Market contribution to growth of industrial/small scale industries. Only 14.74% of changes in IIP can be described by the stock market development indices. Thus about 85.74% of the changes in IIP were not explained by the stock market development indicators. This implies that stock market development does not adequately support growth in Nigerian industrial sector.

From Table 4b showed that stock market development indices and economic development is not statistically significant at 5% level of significance. The coefficient of the constant is 5.339745. This means that holding number of deals (NOD), market capitalization (MKCAP), all share index (SHIDEX), and total market transaction value (TMVT) constant, the value of GDP will increase by 5.339745 units or N5.339745billion. From the result also market capitalization and total market transaction value have a negative relationship between with Gross Domestic Product (GDP) while number of deals and all share index have a exist a positive relationship with GDP.

The coefficient of LNMKCAP is -0.135130 (a negative relationship with GDP), which implies a percent increase in LNMKCAP tends to decrease the GDP by about 13.513% within the period under study. This finding agrees with Osho (2014) and Ozurumba

and Chigbu (2013) who have found negative relationship between market capitalization and GDP. This is contrary to a prior economic theory which postulates that increase in stock market capitalization will lead to increase in economic growth. The coefficient of LNNOD is 0.109255 (a positive relationship with GDP), which implies a percent increase in LNNOD tends to cause 10.9255% increase in GDP. The coefficient of SHIDEX is 0.960805, this means a percent increase in SHIDEX will cause a 96.0805% increase in GDP. Number of deals (LNNOD) and all share index (LNSHIDEX) having a positive relationship with GDP agree with the findings of Oke (2013) and Ozurumba and Chigbu (2013). The coefficient of total market value of transaction is -0.159989, which implies that a percent increase in LNTVMT tends to cause a 15.9989% reduction in GDP. This in line with the findings of Muktar and Dantama (2013) that there exist a negative relationship between total market value of transaction and GDP.

The Durbin-Watson value of 2.49433 shows that there is element of positive autocorrelation meaning that there is a linear between GDP and the independent variables. Furthermore, the coefficient of the Adjusted R-squared revealed that only 22.55% of changes in economic growth can be explained by the stock market development indicators. Thus 77.45% in economic growth of Nigeria were not explained by stock market development. This implies entails that stock market development does not adequately support the economy growth of Nigeria.

The OLS regression analysis showed that variables of stock market development have no significant influence on economic growth; and about 77.45% change in GDP is not explained by stock market development. The null hypothesis is accepted and the alternative hypothesis rejected.

Table 4b: Ordinary Least Square Equation for Stock Market Development indicators where GDP is the dependent variable

Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNMKCAP	-0.135130	0.451328	-0.299406	0.7685
LNNOD	0.109255	0.132356	0.825461	0.4212
LNSHIDEX	0.960805	0.613379	1.566412	0.1368
LNTMTV	-0.159989	0.392638	-0.407472	0.6891
C	5.339745	3.688728	1.447585	0.1670
R-squared	0.380420	Mean dependent var		13.06109
Adjusted R-squared	0.225525	S.D. dependent var		0.800924
S.E. of regression	0.704847	Akaike info criterion		2.342585
Sum squared resid	7.948948	Schwarz criterion		2.591281
Log likelihood	-19.59714	F-statistic		2.455989
Durbin-Watson stat	2.494333	Prob(F-statistic)		0.087805

Evaluation of the parameters in table 4a and table 4b is summarized thus:

Table 5a: A Priori Expectations and observed

Independent Variables	Expected Signs	Observed Signs	Remarks
MKCAP	+	-	Does not conform
NOD	+	-	Does not conform
SHIDEX	+	+	Conform
TVMT	+	+	Conform

Market capitalization and number of deals did not conform while all share index and total value of market transaction conformed to the economic theory.

Table 5b: A Priori Expectations and observed

Independent Variables	Expected Signs	Observed Signs	Remarks
MKCAP	+	-	Does not conform
NOD	+	+	Conform
SHIDEX	+	+	Conform
TVMT	+	-	Does not conform

Market capitalization and total value of market transaction did not conform while all share index and number of deals conformed to the economic theory

TESTING HYPOTHESIS TWO
The hypothesis two stated that there exist no significant causal direction between stock market development and economic growth. Using the pair-wise Granger causality test at 10% level of significance, the output data is presented in Table 6. The null hypothesis of no significant direction of causality was tested against the alternative that there exists a significant direction of causality between variables.

Table 6a: Pair-wise Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Probability
LNMKCAP does not Granger Cause LNIIP	19	0.12316	0.88507
LNIIP does not Granger Cause LNMKCAP		2.89467	0.08869
LNNOD does not Granger Cause LNIIP	19	0.79031	0.31135
LNIIP does not Granger Cause LNNOD		1.26971	0.47294
LNSHIDEX does not Granger Cause LNIIP	19	0.05686	0.94494
LNIIP does not Granger Cause LNSHIDEX		2.89093	0.08893
LNTMTV does not Granger Cause LNIIP	19	0.21914	0.80591
LNIIP does not Granger Cause LNTMTV		2.42596	0.12457
LNTMTV does not Granger Cause LNGDP	19	1.99258	0.17318
LNGDP does not Granger Cause LNTMTV		3.12951	0.07526
LNSGIDEX does not Granger Cause LNGDP	19	3.06472	0.07872
LNGDP does not Granger Cause LNSGIDEX		1.77577	0.20544
LNNOD does not Granger Cause LNGDP	19	1.26764	0.31190
LNGDP does not Granger Cause LNNOD		1.69923	0.21843
LNMKCAP does not Granger Cause LNGDP	19	1.59793	0.23710
LNGDP does not Granger Cause LNMKCAP		1.01787	0.38661

Source: Computer Analysis using E-views

The result of the Pair-wise Granger test indicates the following:
a. Market capitalization (MKCAP) and all share index (SHIDEX) have a unidirectional causality with IIP. The causality runs from IIP to two variables (MKCAP and SHIDEX). The F-statistic for MKCAP and SHIDEX was statistically significant at 10% as indicated by their p-values which are less than 0.5. The economic implication of the finding suggests a need for more focus on the enhancement of the stock market so as to engender greater growth in the IIP via reduction of entry conditions to enable companies have access to fund in the stock market.
b. Both total market transaction value (TMTV) and all share index (SHIDEX) have a unidirectional causality with GDP. The causality runs from GDP to TVMT and from SHIDEX to GDP. The F-statistic for TVMT and SHIDEX was statistically significant at 10% as indicated by their p-values. This validates the endogenous theory which entails that the state of development of the economy will

determine the development of the stock market and versa. The economic implication of the finding suggests a need for more focus on the enhancement of the stock market so as to engender greater growth of the economy.
c. Furthermore, there is independence "no causation" between the LNNOD and LNIIP, LNTVMT and LNIIP, LNNOD and GDP as well as LNMKCAP and GDP. This is a clear indication of the relative positive impact of the stock market operations on economic growth of Nigeria.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS
The study established the existence of co-integration for all the stock market development measures. Thus, results obtained for all measures of stock market development indices used in this research point to the existence of a positive relationship between stock market development and economic growth except for market capitalization and total value of market transaction. The findings from pair-wise Granger

Causality test suggest the existence of a unidirectional relationship between stock market development and economic growth. This entails that the state of development of the economy will determine the development and operations of the stock market.

This study reveals that there is correlation between stock market development and economic growth, via all share indexes, market capitalization, number of deals and total market transaction value. Yet the debate over the nexus between stock market and economic growth continues the result of the present study is an additional motivation for further research in the area.

To tap into the growth enhancing capacity of the stock market, it is essential to adopt measures favourable to stock market development. The Nigerian government can do so, by creating an enabling environment that would involve, amongst other things, putting in place key legislation to cover investment protection, friendly taxation and guaranteeing property rights, so as to stimulate investments. In addition, policies to enhance trading of securities should be encouraged. In fact, the demutualisation of the Nigeria Stock Exchange needs fast-tracking measures. This has the potential of stimulating creation of financial instruments capable of deepen the operations of the Nigeria capital market and consequently improving liquidity.

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Appendix 1: Nigeria Gross Domestic Product (GDP) at 1990 basic price and the Index of Industrial Production from 1993 to 2013

YEAR	GDP at 1990 Basic Prices N'Million	Index of Industrial Production
1993	274,800.0	131.70
1994	275,500.0	133.30
1995	281,400.0	127.50
1996	293,700.0	131.80
1997	302,000.0	132.60
1998	310,900.0	137.50
1999	312,200.0	131.00
2000	329,200.0	137.00
2001	357,000.0	143.20
2002	433,200.0	143.90
2003	477,500.0	144.70
2004	527,600.0	146.70
2005	561,900.0	155.10
2006	595,800.0	158.90
2007	634,300.0	124.80
2008	672,200.0	117.60
2009	718,900.0	115.23
2010	775,500.0	124.40
2011	834,000.0	128.80
2012	889,000.0	136.95
2013	950,000.0	138.30

Source: CBN Statistical Bulletin of various years and National Bureau of Statistics

Appendix 2: Nigerian Stock Exchange (NSE) market capitalization, number of deals, all share index and total value of market transaction from 1993 to 2013

YEAR	All Share Index	Total Value of Market Transaction N'Million	Market Capitalization N'Million	Number of Deals on the Nigerian Stock Exchange
1993	1,543.80	804.4	47,500.0	40,398
1994	2,205.00	985.9	66,300.0	42,074
1995	5,092.00	1,838.8	180,400.0	49,564
1996	6,992.00	6,979.6	258,800.0	49,515
1997	6,440.50	10,330.5	281,900.0	78,089
1998	5,672.70	13,571.1	262,600.0	84,935
1999	5,266.40	14,072.0	300,000.0	123,509
2000	8,111.00	28,153.1	472,300.0	256,523
2001	1,096.10	57,683.8	662,500.0	426,163
2002	12,137.70	59,406.7	764,900.0	451,850
2003	20,128.90	120,402.6	1,359,300.0	621,717
2004	23,844.50	225,820.7	2,112,500.0	973,526
2005	24,085.80	262,935.8	2,900,100.0	1,021,967
2006	33,358.30	470,253.4	5,120,900.0	1,367,954
2007	57,990.22	1,076,020.4	13,181,700.0	2,615,020
2008	31,450.78	1,679,143.7	9,563,000.0	3,535,631
2009	20,730.63	685,717.3	7,030,800.0	1,739,365
2010	24,770.52	799.911.0	9,918,200.0	1,925,314
2011	20,730.63	638,925.7	10,275,300.0	1,235,467
2012	28,078.81	808,991.4	14,800,900.0	1,147,174
2013	41,329.19	2,350,875.7	19,077,400.0	3,224,639

Source: Nigeria Stock Exchange Fact book of various editions