Capital Market Development: A Spur to Economic Growth in Nigeria

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Abstract: This paper examines the relationship between capital market development and Nigeria’s economic growth using data covering the range of 1981 to 2010 using a Johansen Cointegration technique to test for long run relationship among the variables under study. The empirical findings from the research work suggest that the capital market is an essential catalyst for economic growth and is on the average and beneficial to the economy. However, the high costs of raising capital and structural imbalances in the market as well as inconsistent government policies may distort the speedy growth of the market and thus, limit its positive impact on the economy. Keywords: Financial Institutions; Economic Growth; Cointegration; Nigeria

Keywords: CSR, Firms Performance, Chi-Square, Nigeria

JEL Classification: C01; E44

1. Introduction

Economic development is said to require long-term plans, which in turn needs long term investments. In a developing economy like Nigeria, there is the additional requirement for foreign direct investment in order to meet the lacuna created by the inadequacy of the local savings for propelling investment, which is a motivating factor to rapid economic development and growth. For Samuel (1999), a developed and functioning financial infrastructure (financial market) is important for propelling economic development through the mobilization of savings and efficient allocation of these savings for production. Despite the afore discussed importance of long-term capital mobilization and the role of financial institutions, it may be noted that there is no consensus in literature on the effects of the capital market (as a financial institution) on economic growth. At the firm level, Gurly and Shaw (1967) and Shaw (1973) emphasize the importance of the role of financial

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institutions in positively contributing to economic growth. Some others including Shleifer and Sumner (1988), Bhide, (1993) and Mayers (1988) find to the contrary. Indeed, Stiglitz (1994) and Killick and Martins (1990) are of the opinion that the growth of capital markets can be detrimental to corporate organizations. At the macroeconomic level, Kolapo and Adaramola (2011), Atje and Jovanovich (1993) and Adeniyi (2010) report positive correlation between the variables. On the other hand, the study by Alajekwu and Achugbu (2012) reports that market capitalization and value traded ratios have a very weak negative correlation with economic growth.

Thus, there is a need to determine whether or not, the Nigerian capital market has had any significant positive impact on the Nigeria economy during the study period. In addition, the study will examine the factors responsible for the market growth, especially in view of the series of financial policy reforms in the country. The market reforms have recapitalization as part of its cardinal focus (which so many studies that focused on the capital market growth seem to have omitted overtime). This study therefore, attempts to fill this gap, by incorporating the financial policy implication (i.e. bank recapitalization) and other factors responsible for the changes in the Nigerian capital market and thereafter, determine the research examines the impact of the capital market on the economic growth of Nigeria. The organization of the rest of the paper follow thus: Section two is about the background analysis of study and section three deals with the literature review. In Section four, the theoretical and methodological framework of the study is presented while the empirical results are discussed in section five. Section six concludes the paper.

2. **Analysis of the Nigerian Capital Market**

The market started operations formally in June 1961 with eight (8) securities (five government bond, zero industrial loan stock and three equities) that had been previously quoted in the London Stock Exchange. The major types of securities listed on the NSE since its establishment is government loan stock, industrial loan stock and equities. From the modest beginning in 1961, the number of listed securities have increased in leaps and bounds from 8 at inception to 52 a decade later and 264 by end 2010 (Figure 1)
The components of securities on the Exchange during the period, also rapidly changed. For example, in 1961, about 63% of securities were in the form of government stock as against 0% industrial loan stock and 37% equity. In 1990, share of stock holdings of government was 19.82%, industrial loan stock 19.82% and equity 60.36% (Uwubannwen, 2001). While in 1995, government’s share was 12%, industrial loan stock was 22% and equity 66%. By 2005, government stock stood at 8%, industrial loan stock 18% and equity 74%. Only shift in 2010 with government bond/debt security 15%, industrial loan 3% and equity 82% (Figure 2).

The phenomenal growth of the capital market during the last four decades was brought about by government legislation, monetary policies and technical
advancement in stock operations– privatization policies and exercises (1972,1977,1989-1993, 2001 and likely 2003), recapitalization for banks (2004-2005, electronic processing/automated trading activities, on-line trading, etc. The market capitalization as at 1995 stood at N180.31 Billion, N472.30 Billion in 2000 and N2, 900.10 Billion in 2005. That is an increase of 161.9% and 574.03% respectively but stood at 9918.2 billion in 2010. Over the years, quantum leap of listed securities listed on the Nigerian Stock Exchange (Fig. 2) was recorded. The number of equities rose to 13 in 1971 from a 3 in 1961. This is leap of 333.3%. The figure in 1981, improved to 93 (615.4%). As at 2001 it sky rocketed to 178 (91.4%), 214 in 2005 and 217 by 2010. Only one security was listed on the second tier securities market (SSM) at its inception 1985. The number had risen to 20 (1,900%) a decade later but not before it had declined from 23 in 1993. The mounted securities on this platform fell thereafter to 16 in 2005, which were maintained to 2010.

**Review of Literature**

In spite of the developments in stock markets, researchers have focused on the relationship between financial intermediaries (especially commercial banks) and economic growth while empirical investigations of the link between capital market and economic growth have been relatively limited.

Atje and Jovanovich (1993) for a decade long period spanning 1979 to 1988 investigated the dynamics of stock market size in 40 countries. Their research reporta strong positive connection amongst the stock market development, financial development level and growth of the economic. Levine (1991) and Bencivenga, et al. (1996 focusing on the common stock financing, identified the role provided by liquidity from stock exchanges activity in positively influencing the size of investments in new real asset. The marketability of stock on the Exchanges encourage investors to deal in common stocks. This confidence inspires corporations to go to for public offer finance vehicle in meeting capital investment gaps. Contrarian opinions has been contending that the motive for a higher liquidity level mitigate against the propensity to save (Bencivenga and Smith, 1991). However, Japelli and Pagano (1994), piots out that such arguments are not well supported by empirical evidence.

In addition, Levine and Zervos (1998), even after controlling for political and economic factors, report the positive and significant influence of stock market generated liquidity on current and future rate of growth of the economy. In this study, the authors deployed cross section data. The study also confirms the significant predictive ability of both the bank development and stock market liquidity on the future rate of rate of growth. The stock market is very important in liquidity mobilization. They therefore submitted that stock market although crucial for economic development is but a different financial service from
banks. Filer et al (1999) employed Granger causality test to investigate and one-way find significant and positive causality relatedness going from stock market development to economic growth, especially in the case of less developed countries. As regards financial variables, they found a positive link between market capitalization ratio and future economic growth although the link is more significant for higher income countries.

Adjasi and Biekpe (2006)’s 14 country, dynamic panel data model the influence of the development of the stock market on the growth of economy. The research reports positive affiliation between economic growth and stock market development. According to N’zué (2006), the association between the stock market development in Ivory coast and the country’s economic performance is positive. The findings also confirms the cointegrated GDP and stock market development even when the control variables are included in the regression. This causality is however unidirectional from stock market development to economic growth.

Carporale, et al. (2005)’s endogenous growth model study of the link between investment, stock market and economic growth applied the Vector Auto Regression (VAR) framework. The findings overall show that the stock market components is significantly influenced by the investment and economic growth. The study also identified the transmission mechanism through which, investment which stock markets in the long-run, improve economic growth.

Capasso (2006) reports a positive and strong connection between economic growth and stock market development in a study of 24 OECD and some emerging economies. The research also concludes that stock markets tend to appear and mature only when a reasonable economic size is attained together with high capital accumulation level. Capasso (2008) also finds a strong link between stock market and economic growth. At micro level, with companies demonstrate preference for equity instead of debt financing as strategic positioning to achieve optimal capital structure model. This preference accentuate to provide a link between components of stock development of the capital market and improves long-term economic growth.

Adeniyi (2010) deploys the premise that the development of the stock market stimulates economic growth with Nigerian quarterly data from 1990:1 to 2009:4. The vector error correction model (VECM) method was applied. On the stock market development indicators and GDP. The result of the model estimation of the total value of shares traded ratio (vr) has the best fit followed by the market capitalization ratio (mcr) model while the model for the turnover ratio (tr) lagged behind. Mishra et al (2010), examines the effect of the efficiency of the capital market on Indian economic growth. The time series data on total market turnover, capitalization of the market and stock price index were collected spanning over a decade from first quarter of 1991 to the first
quarter of 2010. Thus, the authors recommend that market organizations and regulations should be such that large number of domestic as well as foreign investors enters the market with huge listings, investments, and trading so that the very objective of optimal allocation of economic resources for the sustainable growth of the country can be ensured.

Kolapo and Adaramola (2011) examine the impact of the Nigerian capital market on its economic growth applying Granger causality tests and Johansen co-integration. The Nigerian results supports the cointegration of both the capital market and economic growth. This suggests long-term significant and positive relationship between the two variable of interest. Similar study by Chinwuba and Amos (2011), on capital market performance in Nigeria and the economic development signpost positive relatedness among the number of listed companies, All-Shares Index, and market capitalization Gross Domestic Product. The market capitalization and transactions volume were positively related to Gross Fixed Capital Formation. They also conclude that the Nigerian capital market performance of the positively propels on the economic development of Nigeria. On the other hand, have a very weak negative correlation with economic growth.

Ihendinihu and Onwuchekwa (2012) attempted to determine possible causal link between stock market performance and economic growth in Nigeria using time series data for the period 1984 to 2011. The result of the Ordinary Least Square (OLS) technique utilized in analyzing indicate that about 88% and 95% of the changes in economic growth could be explained by changes in stock market performance in the short run and long run respectively. Oke and Adeusi (2012), examines the impact of capital market reforms on the Nigerian economic growth using the ordinary least square method of regression and the Johansen cointegration analysis, the results show that capital market reforms positively impact the economic growth. The study recommends among others the objective evaluation, review and reform of monetary and capital market laws and regulations with a view to engender and enhance economic growth rather than putting political consideration ahead of sound economic rationale before embarking on reforms.

3. Theoretical Foundation and Methodology
The theory of this study is based on neo-classical growth model drawn from CobbDouglas production function to capture the impact of capital market growth on economic growth. Such that:

\[ Q = f(K, L) \]
Where, Q is output (indicating economic growth), K is capital and L is labour input. Following a Cobb-Douglas production function:

\[ Q = K^\alpha L^\beta \] \hspace{1cm} (2)

Equation (2) is however, restrictive in the sense that it restricts the factors that influences output to only capital and labour, leaving out other factors that also influence the growth of the economy, for which we introduce the shift factors ‘A’ to account for technological, reformative and economic shift factors that affect economic growth. Introducing this into the equation by augmenting to labour, we have:

\[ Q = K^\alpha AL^\beta \] \hspace{1cm} (3)

Taking the log of both sides to linearize the equation, we have:

\[ \ln Q = \alpha \ln K + \beta \ln AL \] \hspace{1cm} (4)

If capital- ‘K’ is dependent on accumulated fund gotten from both the Money Markets (that deal in short term capital mobilization) and Capital Market (that deals majorly in long term capital mobilization), capital investment ‘K’, will therefore be a function of the amount saved in the money markets and/or raised in the capital market. Decomposing ‘K’ we have:

\[ K = f(SAV_{mm}, Mkt_{cap}) \] \hspace{1cm} (5)

Substituting for K in equation 4:

\[ \ln Q = \alpha \ln (SAV_{mm}, Mkt_{cap}) + \beta \ln AL \] \hspace{1cm} (6)

Thus, the specified model:

\[ \ln RGD P = \delta_0 + \alpha_1 \ln SAV_{mm} + \alpha_2 \ln Mkt_{cap} + \beta \ln LAB_{pop} + \varepsilon \] \hspace{1cm} (7)

Equation 7 is the specified model of the study which shows that the growth in output as a function of the savings in the money market, the growth rate in the capital market proxy (by the growth in the market capitalization), and the improvement in the active labour population growth rate. All parameter coefficients are expected to be positive.

In this research work, causal econometric analysis is employed. Data obtained from various (secondary) sources would be tabulated, analysed and tested. Series of multiple regression analysis with the method of Ordinary Least Square (OLS) is used to establish relationship between variables. In addition, tests for stationarity, correlation and variance inflation factor analysis is conducted for a confirmation of the unit root, linear relationships and the absence of multicollinearity respectively to avoid spurious regression.

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Data employed for the study are extracted from secondary sources, such as official government documents published by the Central Bank of Nigeria (CBN), Federal Office of Statistics (FOS), the Nigerian Stock Exchange (NSE), Securities and Exchange Commission (SEC) and World Bank Development Indicator.

5. Empirical Analysis
5.1 Augmented Dickey Fuller Unit Root Test and Cointegration Test

To avoid obtaining a spurious result by regressing non-stationary series, and also to scrutinize the integrating level of the variables which is to ensure that the variables are not of order I(2), the Augmented Dickey-Fuller (ADF) is employed to test for Stationary and the order of integration of variable. The results of the ADF unit Root test for checking for Stationary of the data, and the determined order of integration is shown in the Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>At Level I (0)</th>
<th>At First difference I(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGMCAP</td>
<td>0.4578</td>
<td>-4.1801***</td>
</tr>
<tr>
<td>LOGPOP</td>
<td>0.8180</td>
<td>-2.6350*</td>
</tr>
<tr>
<td>LOGRGDP</td>
<td>-0.2365</td>
<td>-3.1018**</td>
</tr>
<tr>
<td>LOGSAV</td>
<td>-1.5591</td>
<td>-3.8068***</td>
</tr>
</tbody>
</table>

Critical Levels: 

Note: *, ** and *** implies significant at 10%, 5% and 1% significant levels

Source: Authors Computation

The table above shows that all the variables are stationary at first difference. Hence, we conclude that the variables are stationary and the model is specified and regressed at first difference. However, following the rule of thumb as put by Gujarati (2003); that spuriousity in regressed result, is observed when the goodness of fit measure – “R-Square (R²)” is greater than the autocorrelation indicator - —Durbin-Watson (DW)l. That is, if $R^2 > DW$, we have a spurious regression and the result is not reliable. But if the $DW > R^2$, then we have a non-spurious regression whose report is reliable for forecasting and policy making. Thus, considering the regression at level may still be considered with the regression technique to be employed, dependent on whether or not a cointegrating relationship exist among the variables, after which diagnostic-post test for multicollinearity and auto-serial correlation (Durbin Watson) are considered.
From the Augmented Dickey Fuller (ADF) test, all the variables are stationary at first difference; we therefore go further to test for any cointegrating relationship among the variables, as this would likely suggest the regression technique to be employed.

Table 2. Johansen Cointegration Test

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigen value</th>
<th>Max-Eigen value</th>
<th>Critical value 0.05</th>
<th>Trace statistic</th>
<th>Critical value 0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.444398</td>
<td>16.45570</td>
<td>27.58434</td>
<td>38.68548</td>
<td>47.85613</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.330704</td>
<td>11.24281</td>
<td>21.13162</td>
<td>22.22977</td>
<td>29.79707</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.290500</td>
<td>9.609437</td>
<td>14.26460</td>
<td>10.98696</td>
<td>15.49471</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.048007</td>
<td>1.377521</td>
<td>3.841466</td>
<td>1.377521</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

* denotes rejection of the hypothesis at the 5% level

The Johansen cointegration test presented in Table 2 above, shows that there exist no cointegrating relationship among all four variables at 5 percent critical levels. This conclusion of no cointegrating relationship among the variables is confirmed in both the Trace test and the Maximum Eigen value test as expressed in the table. For this reason, we therefore conduct the regression using the basic Ordinary Least Square regression for a multivariate model.

Table 3. Estimates of the Static Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGSAV</td>
<td>0.54241</td>
<td>0.183689</td>
<td>5.565274</td>
<td>0.0001***</td>
</tr>
<tr>
<td>LOGPOP</td>
<td>0.46146</td>
<td>0.406451</td>
<td>1.133539</td>
<td>0.2666</td>
</tr>
<tr>
<td>LOGMCAP</td>
<td>0.38241</td>
<td>0.016116</td>
<td>3.724047</td>
<td>0.0030***</td>
</tr>
<tr>
<td>C</td>
<td>0.24609</td>
<td>2.870419</td>
<td>0.130897</td>
<td>0.8057</td>
</tr>
</tbody>
</table>

Where: ***, ** and * implies significant levels at 1%, 5% and 10% respectively
R-square ≈ 0.761, Adjusted R-square ≈ 0.615, F- statistics ≈ 212.3, Durbin-Watson stat. ≈ 1.463, Prob (F-statistic) ≈ 0.00

Source: Authors Computation

The result in table 3 shows that market capitalization does have a significant positive effect on the growth of the economy. Significant at 1%, the result shows
that a 1 percent increase in the growth of the capital market measured by its market capitalization, will lead to a 38% increase in growth. This conforms to the finding of earlier empirical results such as Capasso (2006) for 24 OECD countries, Mishra et al (2010) for India, and Chinwuba and Amos (2011), Kolapo and Adaramola (2011), Oke and Adeusi (2012) for Nigeria, amongst many that all agree that the capital market is an essential catalyst for economic growth and development against the views of Wai and Patrick (1973), De Long et al (1990), Jappeli and Pagano (1990), Killick and Martin (1990), and Morck et al (1990) that suggest otherwise. The commercial bank savings was found to have a similar effect on economic growth, though with a marginally higher percentage effect on the economic growth. From the result, a percentage increase in the savings rate, will lead to 52% increase in the growth of the economy. Given its slightly larger effect on the economic growth, the result implies that growth in the Nigerian economy is bank /money market based than capital market based. That is the Nigerian economy seems to source more of its investment capital (capital structure) from the banks than the capital market.

From the result, the growth in labor population was found to have a positive (0.46) but insignificant impact on economic growth. This suggests that the labor input of the working population of the country is yet to have a significant contribution on the economic growth of Nigeria. In addition, the F-statics value (212.3) which confirms the joint significant of the included independent variables to influencing economic growth, as the critical significance value on the joint probability is less than 0.05. The result shows that approximately 70 percent of the variation in the economic growth is a result of the included independent variables. This is indicated by the R-square, while the remaining 30 percent are caused by other factors. The Durbin Watson (D.W) statistics of 1.46 is below the traditional benchmark of 2.0 in the model, the study can conclude that there is no of sign auto- correlation or serial correlation in the model specification; hence the assumption of linearity is not violated. Also, the Durbin Watson value is greater than the estimated R-square. So following Gujarati’s (2003) rule of thumb, the result is not spurious.

4. Conclusion

This study has examined the development of capital market and its impact on the economic growth in Nigeria. The empirical findings from the research work suggest that the capital market contributed positively and significantly to growth of Nigerian economy along with the developments in the banks from 1981 to 2010. All in all, growth of the capital market is on the average and beneficial to the economy, the high cost of raising capital and structural imbalances in the market as well as inconsistent government policies may distort the speedy growth of the market and thus, limiting its positive impact on the economy. Based on the findings
and conclusion drawn on this study, the following recommendations are therefore proposed:

- Regulatory authorities of the market, should initiate policies that would encourage more companies to access the market such as a downward review of lending rates, relaxation of entry requirement for companies, etc; as the number of listed securities as found in the study indicates the potency of this factor to produce positive impact and the high lending rate that increases financing constraint.

- Market organisation and regulation should be comprehensive and robust enough to handle plethora of issue that may arise from a surge of foreign and domestic entry investors. In order to ensure optimal resource allocation, the issues of investments, high market listings and trading need to be addressed so as to engender the achievement of the country’s sustainable growth.

- Also, the authority needs to in their surveillance role, proactively anticipate and deal with possible sharp practices which may weaken the integrity of the market thereby eroding the confidence of investors.

- Finally, government should ensure an investment friendly environment, by putting in place the necessary social infrastructures, services, and policy reforms that will enhance and encourage its labour force, domestic and foreign investor, the functioning of its financial markets, and economic growth.

5. References


