HAS STOCK MARKET DEVELOPMENT ENGENDERED SHORT AND LONG-RUN INCLUSIVE GROWTH IN NIGERIA?

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ABSTRACT

This study examines the impact of capital market performance on economic growth. Time series data obtained from the official publications of the Securities Exchange Commission, Nigerian Stock Exchange and Central Bank of Nigeria were analyzed using regression estimation technique, in which we related the proxies of stock market performance indicators (such as stock market capitalization, value of new issues and value of shares traded) to economic growth (represented by the Gross Domestic Product). Results show that both market capitalization and the value of new issues have a positive relationship with economic growth while value and the volume of shares traded had negative relationships with economic growth. It was therefore recommended that the stock market should be made more liquid in order for turnover rate to increase. This will boost investors’ confidence and awareness and would make funds available for long-term development of the industrial sector and the economy.

Keywords: Stock Market Development, Long-Run, Inclusive Economic Growth.
INTRODUCTION

Since the studies of Schumpeter (1911), Shaw (1973), and McKinnon (1973), the link between stock market development (henceforth SMD) and economic growth (henceforth EG) has piqued the interest of scholars, policymakers, and other interested parties in the field of finance. Therefore, the impact of SMD on EG has become a subject matter of unending debate and contention. For example, Greenwood and Smith (1997), Levine (1997), among others, have affirmed that stock markets (SMs) promote EG, while Stiglitz and Weiss (1981), do not believe that SMs alone can promote EG. Several studies (such as Adeyemi 1998, Aigbokhan 1996, and Adebiyi, 2005) have examined this relationship in the context of the Nigerian economy but reported mixed results. However, there is still no definite and clear-cut empirical consensus.

Emanating from these studies is the conclusion that the SM as a sub-sector of the financial market is fundamental to EG (Levine and Zervos, 1996; Ishioro, 2015c). The Nigerian economy, regardless of the rapid rate of growth experienced by the SM in recent decades, is still largely underdeveloped. These vestiges of underdevelopment reflect the gap between the deficit and surplus units and the exacerbated inequitable distribution of income in the economy. In the developed economy, where a large proportion of production takes place in sophisticated industrial units, the SM promotes steady and healthy growth of the economy. These developmental strides are made possible by making capital and funds available to both manufacturing and the industrial sector to enable them to acquire the necessary equipment for the purpose of production of goods and services.

However, the capital formed and utilized may not be equal to the amount of money saved (or idle funds in banks and those kept for "precautionary motive" at home) in the economy. The disparity is due to the fact that savings are generally made by economic agents (such as individuals, households, and firms) and invested at the firm level by households, institutions, or individual investors.

Among less developed countries (LDCs), including Nigeria, banks almost always either deter lending to new innovative and productive borrowers simply because of the high risk of default associated with new but unreliable borrowers or change in the risk premium in the lending rate (Stiglitz and Weiss, 1981). Historically, the financial sector in developing economies has been primarily bank-dominated. But in recent years, there has been a gradual shift away from a more holistic approach alongside the banks that seek to develop the securities markets and other non-bank financial institutions.

Hence, the main objective of this study is to investigate the impact of SMD on the EG of Nigeria and to ascertain the nature of the relationship between it and the EG. Also, we intend to apply the fundamental textbook econometric criteria in the interpretation of our resultant estimates in order to teach our students and young researchers how econometric results ought to be interpreted in a step by step manner. The rest of this paper is divided into four sections. Following the introduction in section one, section two reviews the SM channel and its contribution to EG. Section three presents the materials and methods, including model specification, with estimation techniques highlighted. This is followed by the discussion of the results. Section five concludes the study with some policy implications.
LITERATURE REVIEW

Stock Market Performance and Economic Growth
Arising from Patrick (1966) and other studies, the findings of recent studies on this topical issue can be categorized into four dimensions; these include but are not limited to:

(i) Financial development (represented as SMD) versus economic growth in which financial development (SMD) is hypothesized to cause economic growth (this has been described as the supply-leading hypothesis or finance-led growth hypothesis);

(ii) Economic growth versus financial development (SMD), where economic growth is posited to promote and cause financial development (stock market development). This has been christened the "demand-following hypothesis" or "growth-led finance hypothesis."

(iii) The combination of (i) and (ii) (is known as the Feedback hypothesis)

(iv) Neither Financial development nor economic growth affect each other. This has been known as neutrality hypothesis.

In line with the above categorization, the findings in the literature supported either one or all the categories. For instance, Boubakari and Jin (2010) in their study found a statistically significant positive relationship between SMD and EG in developed and liquid SMs of France and the United Kingdom, while a negative relationship was found for Belgium and Portugal.

Luintel and Khan (1999), Magid (2007), Hongbin (2007), and Dawson (2008) were among the studies whose results synchronized with the findings of category (iv) and were among the results of some of the studies (that supported the existence of bi-directional or feedback causality between SMD and EG).

Badr (2015) investigated the relationship between SMD and Egyptian EG using the Vector Auto-Regressive Granger causality test and discovered that SMD alone cannot promote EG. The study included a control variable (foreign direct investment) in the econometric model and established a causal relationship between SMD and EG. This finding supports the results of Boubakari and Jin (2010) that weak SM does not positively affect the growth of an economy. Other studies like Osaze(1985), Popiel(1990), Adubi(1996), Pagano, Panetta & Zingales (1996), Adeyemi (1998),and Emenuga(1998) focused on stock market-related issue.

Table 1
Summary of Studies on Economic Growth and Stock Market Development

<table>
<thead>
<tr>
<th>S/No</th>
<th>Study/Author</th>
<th>Country Studied</th>
<th>Estimation Technique</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Atje and Jovanovic</td>
<td>40 Countries</td>
<td>Cross Country Regression analysis</td>
<td>Positive relationship between economic growth and stock market development.</td>
</tr>
<tr>
<td>2</td>
<td>Levine and Zervos</td>
<td>41 Countries</td>
<td>Pooled and Cross Country Regression Technique</td>
<td>Positive relationship between economic growth and stock market development.</td>
</tr>
<tr>
<td>4</td>
<td>Adjasi and Biekpe</td>
<td>14 African</td>
<td>Dynamic Panel Data Analysis</td>
<td>Positive relationship between economic growth and stock market development for upper and middle-income countries while low-income countries' stock markets were development-requiring.</td>
</tr>
<tr>
<td>Page</td>
<td>Authors</td>
<td>Country</td>
<td>Methodology</td>
<td>Results</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>5</td>
<td>Akinlo and Akinlo (2009)</td>
<td>SSA Countries</td>
<td>ARDL Bounds Test</td>
<td>Positive relationship between economic growth and stock market development for all 7 SSA countries</td>
</tr>
<tr>
<td>6</td>
<td>Enisan and Olufisayo (2009)</td>
<td>Selected African Countries</td>
<td>ARDL Bounds Test and vector error correction model (VECM)</td>
<td>There was cointegration between stock market development and economic growth in Egypt and South Africa with a significant positive long run impact on economic growth; also stock market development Granger caused economic growth in Egypt and South Africa.</td>
</tr>
</tbody>
</table>

Source: Author's Computation

Akinlo and Akinlo (2009) examined the link and type of relationship existing between SMD and EG in Germany for a period of 44 years, that is, from 1965 to 2007. The study applied the unit root and cointegration tests, Granger causality and the Vector Error Correction Model (ECM) as the estimation techniques. The study re-affirmed the existence of a unidirectional causality between SMD and EG. The unidirectional causality does not flow from EG to SMD, but rather it runs from SMD to EG implying that the stock market is one of the drivers of economic growth in Germany. Conversely, the Granger causality results further suggest that the growth of the German economy does not Granger cause stock market development during the period 1965 to 2007. The results are empirically instructive for other economies.

Levine and Zervos (1996) re-visited the empirical discourse on the long-run association existing between efficient stock markets and growth, and banking sector development and growth for 41 selected countries for the period 1976 to 1993. Pooled cross-country and time series data for the selected countries were used to test the models. Furthermore, the study noted that, among the financial indicators, it is a well-developed SM that contributes more to EG than the banking sector. The justification of their argument is that, an increase in the stock market capitalization helps the economy to mobilize capital and diversify risks. This is expected to foster EG.


Nurudeen (2009) using time series data from 1981 to 2007 for the Nigerian economy and employed the ADF unit root and cointegration test, Error Correction Model (ECM) and Granger causality estimation techniques. The indicators used are the growth and stock market development represented by market capitalisation and turnover ratio and all share price index with selected control variables. The study found that increased EG was caused by the SMD and its metrics. Specifically, the results show that there is a negative and statistically significant relationship between growth and turnover ratio. Cointegration was also established, and Granger causality was observed between some of the selected indicators.

In the same vein, Adamopoulos and Vazakidis (2009) using Vector Auto-regression (VAR) model in the study of SMD and EG in France; established that economic growth has a positive and significant effect on SMD during the period 1965 to 2007.

Vazakidis and Adamopoulos (2009) examined the nature of the casual relationship between financial development (represented by SMD) and EG in Greece for the period of 30 years spanning from 1978 to 2007. Similar to the empirical results obtained by Marques, Fuinhas
and Marques (2013) for the Portugal economy, the study established a positive relationship between EG and financial development. Also, Azarmi, Lazar and Jeyapaul (2005) found both positive and negative relationship between SMD and EG for the period of 21 years (1981 - 2001). The positive relationship was affirmed during the pre-liberalization period while the negative relationship was during the period of post-liberalization. They concluded that the Indian SM can be best described as \textit{casino} (because it has not impacted the growth of the Indian economy). Finally, Karim and Chaudhary (2017) investigated the effect of SMD on EG of major South and East Asian economies. They adopted a panel data regression estimation technique and re-affirmed that the contribution of SMD to EG is not significant for the East Asian region while it is relatively significant for South Asian region.

From the above literature review, stock markets can either drive the economy positively or negatively. 

\textbf{The Nigerian Stock Market in Retrospect}

Stock markets are designed to bridge the gap between savings-investment through the channels stated above. The development of the SM followed logically from the discovery of the joint stock company as an instrument for facilitating commerce and for sharing the risks of enterprises. The Stock market facilitates the refinancing of joint stock companies which no longer need to be dissolved after one venture irrespective of how successful or disastrous it may have performed (Osaze, 1985; Osaze, 2000). In Nigeria, during the period preceding the economic boom of the 1970s; most enterprise were forced to look inward for local raw materials and funds. With strangulating interest rate in the latter part of the 1980s in the money market, the Stock market became the last hope of many investors. With an increasing patronage, industrial stocks and bonds listed on the floor of the Nigerian Stock Exchange grew during this phase from 14 in 1981 to 35 in 1998, while equities including those of the Second Tier Securities Markets (SSM) declined from 93 in 1981 to 51 in 1998 (Odife, 2000; Olugunde \textit{et al}, 2006). This decline was due to governments' decision not to float development stocks again as from 1987, in order to allow the market grow according to the operations and interactions of the forces of demand and supply. Following the continuing depth of meaningful foreign investments, the Nigeria Enterprises Promotion (issue of non-voting equity shares) decree 34 of 1987 was promulgated in order to attract needed foreign investment in the country. The SSMs dream was to make room for smaller indigenous companies which could not meet the listing requirements of the first tier companies to come to the market. Hence, the daily official list was reclassified in first tier equities and the SSM equities. The period 1989/1990 was regarded as the fifth phase. Since the beginning of this phase, there has been a spate of activities following the privatization exercise that introduced new dimensions into the Capital market and has kept on expanding till date.

\textbf{Contribution of the Stock Market to the Development of the Nigerian Economy.}

The Nigerian stock exchange has continued to play an important role in the expansion of inclusive growth-facilitating and industrial development in the Nigerian economy. Specifically, the SM has been a source of capital and funds for sectoral development in particular and inclusive growth in general (Ndanusa, 2004; Ishioro, 2013a and 2022e). For
instance, government at different levels and time have sourced for funds from the stock market. Funds sourced and generated by state governments have been used for the purpose of housing and infrastructural development (provision of water, roads, building of market, drainages, etc). In 2000, Edo and Delta state sourced for funds from the capital market. Edo state generated ₦1 billion for a housing project and Delta state raised ₦5 million for a variety of developmental projects. Also, in 2002, the Yobe state government raised a ₦2.5 billion bond, Ekiti state generated ₦4.0 billion also for infrastructural development and Lagos state floated ₦1.5 billion bonds to refinance short-term facilities. This trend has continued till date. The SM has also provided opportunities for investment diversification. It discourages investors from investing in other economies’ stock markets or other forms of business. This implies that capital flight is discouraged by the existence and patronage of a functional and inclusive stock market (Odife, 2000).

MATERIALS AND METHODS

Sources and Description of Data
The data used for the estimation of our model were collected from the official publications of the Central Bank of Nigeria (CBN): Annual Reports and statement of Accounts (for various years), Statistical Bulletin (for various years); Securities Commission publications; and the Nigerian Stock Exchange official publications: Fact Book. The study covered the period of 1980-2021, we applied time series data from the Nigerian economy for the estimation of our equation.

Table 2 Description of Stock Market Development and Inclusive Economic Growth Variables

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variable</th>
<th>Symbol</th>
<th>Definition</th>
<th>Theoretical Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Market capitalization ratio</td>
<td>M_CAP</td>
<td>Percentage change in the market capitalization of listed companies.</td>
<td>Positively related to the growth of GDP</td>
</tr>
<tr>
<td>2</td>
<td>Volume of stock Traded</td>
<td>NW-IS</td>
<td>This is the total volume of the stock traded in the market expressed as a quotient of GDP</td>
<td>Positively related to the growth of GDP</td>
</tr>
<tr>
<td>3</td>
<td>Value of stock Traded</td>
<td>VL-SC</td>
<td>This is the total value of the stock traded expressed as a quotient of GDP</td>
<td>Positively related to the growth of GDP and reflects SM impact on the economy through the liquidity channel.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Variable</th>
<th>S/N</th>
<th>Variable</th>
<th>Symbol</th>
<th>Definition</th>
<th>Theoretical Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Economic Growth</td>
<td>R_GDP</td>
<td>Measured as GDP per capita: the percentage change in per capita GDP</td>
<td>Positively related to the explanatory variables</td>
</tr>
</tbody>
</table>

M_CAP is one of the most important measures of the size of the SM and it is a function of the prevailing market price of quoted equities and the quantum of their issued and paid-up capital. The volume (NW-IS) and values of stock traded (VL-SC).

The volume of stocks traded (NW-IS) is used as an indication/parameter of the popularity and effectiveness of the tempo of investments in the market. A high volume traded suggests active and vibrant market. However, the value of stocks traded (VL-SC) is relatively more important compared to the volume traded as persistent rise in stock prices often result in high value of stocks traded (an indication of economic activities and performance).
value traded usually fosters and/or complements $M_{CAP}$ as it measures the structural organization of the tempo of firms’ trading activities.

**Specification of Our Short-run Model**

The functional form of our short-run model is specified as:

$$\log R_{GDP} = f(\log M_{CAP}, \log NW_{IS}, \log VL_{SC})$$

where $\log R_{GDP}$ represents the log of real Gross Domestic Product and it is the proxy for economic growth in this study.

$\log M_{CAP}$ is the log of Market capitalization (including equities and debts).

$\log NW_{IS}$ represents the log of the Volume of stocks traded.

$\log VL_{SC}$ represents the Value of stocks traded.

Equation (1) represents the functional relationship existing between EG proxied by real $R_{GDP}$ while the explanatory variables of interest are stock market development proxies as previously defined in table 1.

To accommodate the effects of indicators that are necessary but not included, we introduced the stochastic term. Our model for estimation is specified below as:

$$R_{GDP} = \Phi_0 + \Phi_1 M_{CAP} + \Phi_2 NW_{IS} + \Phi_3 VL_{SC} + \varepsilon$$

(2)

The log form of our model or the logarithmic transformation (linearization) of our model is expressed as:

$$\log R_{GDP} = \Phi_0 + \Phi_1 \log M_{CAP} + \Phi_2 \log NW_{IS} + \Phi_3 \log VL_{SC} + \varepsilon$$

(3)

Where $\varepsilon$ is the error term and all the other variables are as previously defined.

**Theoretical Expectations of our Model**

The theoretical expectations about the coefficients of equation (2) can be expressed as:

$\Phi_1 > 0$, $\Phi_2 > 0$, $\Phi_3 > 0$; $\Phi_0$ representing the intercept is greater than zero (that is, $\Phi_0 > 0$), implying that it can assume values ranging from zero to values above zero (positive values) while $\Phi_1$, $\Phi_2$ and $\Phi_3$ which are in fractions are usually either positive or negative but are theoretically expected to be positive in the context of this current study.

**Market capitalization** ($\log M_{CAP}$) is expected to have a positive relationship with per capita $R_{GDP}$ (national output), meaning that, as market capitalization (which is one of the most important measures of the size of a Stock market and market price of quoted equities) expands, it will lead to increased economic growth. The details of the impact of this channel is entirely macroeconomic and as such transcends the spheres of this current study.

The **Volume of stock traded** ($\log NW_{IS}$) is expected to have a positive relationship with the GDP, implying that, as the volume or quantum of new issues traded increases, the popularity of the capital increases, thereby boosting investors confidence. This will lead to an increased investment in the economy resulting into economic growth.

**Value of stocks traded** ($\log VL_{SC}$) is also expected to have a positive relationship with the GDP, which implies that, since high value of securities traded suggests a virile, active and vibrant market, it will definitely encourage and attract investment which will eventually result into an enhanced inclusive economic performance.

However, our adoption of $R_{GDP}$ as a proxy for inclusive growth deserves some explanations. Jhingan (2001) posited that the $R_{GDP}$ is still one of the best measures of inclusive growth and performance because of its components and how it is derived.
Estimation Technique
The highlight of the estimation techniques adopted and applied in this study are presented below.

Unit Root Tests
The unit root and stationarity test of the time series data we used in this study was tested using the Augmented Dickey Fuller (ADF) as in Dickey and Fuller (1979), Phillip-Perron (PP) as in Phillips and Perron (1988), and Kwiatkowski, Phillips, Schmidt and Shin (1992), KPSS unit root test procedures. The test for the stationarity of our series is necessary because non-stationary series are bound to produce inconsistent and spurious results (Ishioro, 2022c; 2020a; 2018; 2017 and 2015c).

Short-run Ordinary Least Square Estimation Technique
The Ordinary Least Squares (OLS) Error Correction model was used as the estimation technique for the short-run analysis of our models. The resultant estimates were evaluated using the following criteria: first, economic signs and magnitude 'a priori' expectations criteria; second, statistical criteria, and third, econometric criteria. In order to enhance our results, the logarithms of our variables of interest were used (as in Ishioro, 2022a, 2022b, 2022d, 2022e).

Test for Cointegration
The variables which have been tested for the order of integration and found to have the same order, are used to estimate the cointegration regression model and Granger causality tests. Therefore, we implemented the standard Granger causality test relying on the empirical tradition of Ishioro(2015b, 2020b), and Granger (1969).

The Granger Framework
A simplified bivariate Granger framework is specified as equation (4a) and (4b) in consonance with studies that adopted the econometric framework of Granger causality. These include Tekin (2019); Ishioro (2020a, 2019, 2018, 2013b); Rezina et al.,(2017); Bayar et al.,(2014); Osamwonyi and Kasimu (2013); Kaya et al.,(2011), and Antonious (2010).

\[ R_{GDP_t} = \alpha_0 + \sum_{i=1}^{n} \alpha_i R_{GDP_{t-i}} + \sum_{j=1}^{m} \beta_j SM_{t-j} + \varepsilon_t \]  \hspace{1cm} (4a)

\[ SM_t = \beta_0 + \sum_{i=1}^{p} \beta_i SM_{t-i} + \sum_{j=1}^{q} \theta_j R_{GDP_{t-j}} + \varepsilon_{2t} \]  \hspace{1cm} (4b)

In equation (4a) and (4b), \( R_{GDP} \) represents current value of inclusive growth while \( SM_t \) is the vector for Log M\textsubscript{CAP}, LogNW\textsubscript{IS} and LogVL\textsubscript{SC}; \( n, m, p \) and \( q \) denote the optimal lag lengths selected for the implementation of the Granger causality framework; the subscripts \( t, t-i \) and \( t-j \) are the current and previous lagged values of our series; \( \alpha, \beta \) and \( \theta \) are the coefficients of our lagged series; and \( \varepsilon_{1t} \) and \( \varepsilon_{2t} \) are the white noise (assumed to be iid and mutually uncorrelated).

DISCUSSION OF RESULTS

Results of Unit Root Tests
The results of the unit root, cointegration and Granger causality tests, and the short-run ordinary least squares are presented in tables 3, 4,5, and 6 with the ensuing explanations and discussions.
Table 3
Results of the Unit Root Tests

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF UNIT ROOT TEST</th>
<th>PHILLIPS-PERON UNIT ROOT TEST</th>
<th>KPSS UNIT ROOT TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>First Difference</td>
<td>Level</td>
</tr>
<tr>
<td>R_GDP</td>
<td>-1.954</td>
<td>-5.042*</td>
<td>-1.963</td>
</tr>
<tr>
<td>NW_IS</td>
<td>-2.954</td>
<td>-5.665*</td>
<td>-2.386</td>
</tr>
<tr>
<td>VL_SC</td>
<td>4.339</td>
<td>-3.680**</td>
<td>-3.226</td>
</tr>
<tr>
<td>M_CAP</td>
<td>3.512</td>
<td>-6.082</td>
<td>-1.623</td>
</tr>
</tbody>
</table>

Source: Author’s Computations

The resultant outcomes of the ADF, PP and KPSS displayed in table 3 confirmed that the series are only stationary at first difference (that is, I(1)) when tested at the 1 percent and 5 percent levels of significance. The absolute values of the calculated ADF test statistics for all the variables are less than their critical values at either 1, 5 or 10 percent significance level at the series levels.

Results of the Short-run Ordinary Least Squares

Table 4
Results of the Ordinary Least Squares Error correction

<table>
<thead>
<tr>
<th>Growth proxy</th>
<th>Constant</th>
<th>Stock Market Variables</th>
<th>Short-run Adjustment Statistic</th>
<th>Econometric Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log R_GDP</td>
<td>C</td>
<td>Log M_CAP</td>
<td>Log NW_IS</td>
<td>Log VL_SC</td>
</tr>
<tr>
<td>Coefficient</td>
<td>2.798*</td>
<td>(+) 1.0859*</td>
<td>(+) 0.0447</td>
<td>(+) 2.30*</td>
</tr>
<tr>
<td>S.E.</td>
<td>(0.3551)</td>
<td>(0.08301)</td>
<td>(0.0690)</td>
<td>(0.5552)</td>
</tr>
<tr>
<td>t-values</td>
<td>7.88</td>
<td>13.08</td>
<td>0.65</td>
<td>4.14</td>
</tr>
<tr>
<td>Lagged Values</td>
<td>Log R_GDP&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>Log M_CAP&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>Log NW_IS&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>Log VL_SC&lt;sub&gt;t-1&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coefficient</td>
<td>0.064</td>
<td>0.562</td>
<td>1.077</td>
<td>0.1089</td>
</tr>
<tr>
<td>S.E.</td>
<td>(0.224)</td>
<td>(0.5300)</td>
<td>(0.034)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>t-values</td>
<td>0.29</td>
<td>1.060</td>
<td>8.04</td>
<td>9.90</td>
</tr>
</tbody>
</table>

Source: Author’s Regression Result

NOTE: Standard errors (S.Es) are in parentheses and the t-values reported underneath the S.Es.

Following and adopting the practice of Koutsoyiannis (1977) and Dougherty (1992), we adopted the stages outlined above in the interpretation of the resultant outcomes our regression equation (estimated models).

First, we used the signs of the coefficients of our explanatory variables in the discussion of our resultant estimates. From table 4, the signs of the coefficients of Log M_CAP, Log NW_IS and Log VL_SC are congenial to our a priori / theoretical expectations. For market capitalization (Log M_CAP) representing market size, value of stocks traded (Log NW_IS) and volume of stocks traded (Log VL_SC) the signs of the coefficients are positive and are in consonance with our a priori expectations. This means that market capitalization, the volume of Stocks traded and the value of stocks traded increase or boost the growth performance of the Nigerian economy during the period studied.

Second, we adopted the statistical criteria in the interpretation of our results. In terms of statistical significance, all the series except the value of stocks traded (Log NW_IS) were statistically significant at the 5 percent level. This implies that all the series except value of stocks traded are significant in explaining the observed changes and variations in the growth of the Nigerian economy within the period studied. The positive and statistical significance of the constant term means that there are other important explanatory variables that were not...
included in the econometric model adopted in this study that are quite insightfully and empirically potent (Ishioro, 2022e).

Third, we adapted the magnitude of the slope coefficients. The slope coefficients were relatively large except that of Log NWIS. The slope coefficients indicated that as each of Log M\textsubscript{CAP}, Log NW\textsubscript{IS} and Log VL\textsubscript{SC} increases by one unit of each of the explanatory variables, GDP increases by 1.0859, 0.0447 and 2.30 units (of Log R\textsubscript{GDP}) respectively. But, both Log R\textsubscript{GDP}, Log M\textsubscript{CAP}, Log NW\textsubscript{IS} and Log VL\textsubscript{SC} are measured in N millions, so, the slope coefficient predicts that if Log M\textsubscript{CAP}, Log NW\textsubscript{IS} and Log VL\textsubscript{SC} increase by one percent, the Log R\textsubscript{GDP} will increase by N\textsterling108.6 million, N\textsterling4.47 million and N\textsterling22.96 million respectively. This depicts the high degree of potency and robustness of our results.

The coefficient of the error correction term (Ecm\textsubscript{t-1}) is -0.38 indicating that, the model corrects 38 percent of previous short-run disequilibrium during the current period. The lagged values of R\textsubscript{GDP}, Log M\textsubscript{CAP}, LogNW\textsubscript{IS} and LogVL\textsubscript{SC} are all statistically significant except Log M\textsubscript{CAP} (t-1). This according to Ishioro (2022e) is an indication of positive retrospective tendency of the stock market fundamentals.

Fourth, the R squared criteria shows that about 98 percent of the variations in the dependent variable was explained by the changes in Log M\textsubscript{CAP}, Log NW\textsubscript{IS} and Log VL\textsubscript{SC} respectively.

The value of the constant term indicated that the predicted level of R\textsubscript{GDP} when each of the explanatory variables is zero; implying that, if all the explanatory variables were equated to zero, about N279.8 million would still have been contributed by other unspecified variables to R\textsubscript{GDP}.

The value of the DW statistic shows that our results are not auto-correlated. However, the findings of Adebiyi (2005) and Ishioro (2022e) that studied the relationship between stock market development variables and economic growth in Nigeria approximated to our findings.

Results of the Generalized Cointegration Tests.

Table 5

<table>
<thead>
<tr>
<th>Hypothesized CE(s)</th>
<th>No. of Eigen Value</th>
<th>Trace Statistics</th>
<th>0.05 C.V.</th>
<th>Max. Eigen Value</th>
<th>0.05 C.V.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None * : (0.000)</td>
<td>0.9743</td>
<td>194.023</td>
<td>47.856</td>
<td>128.132</td>
<td>27.584</td>
</tr>
<tr>
<td>At Most 1*: (0.000)</td>
<td>0.7063</td>
<td>65.890</td>
<td>29.797</td>
<td>42.877</td>
<td>21.132</td>
</tr>
<tr>
<td>At Most 2*: (0.031)</td>
<td>0.4589</td>
<td>23.014</td>
<td>15.495</td>
<td>21.494</td>
<td>14.265</td>
</tr>
<tr>
<td>At Most 3*: (0.218)</td>
<td>0.4250</td>
<td>1.520</td>
<td>3.841</td>
<td>1.520</td>
<td>3.841</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation

The resultant outcomes of the cointegration test displayed in table 5 indicated the Johansen Cointegration test is optimized at most at 3 cointegrating equations for both trace and maximal Eigen value statistics. The empirical connotation of the resultant estimates of the cointegration test is an empirical prima facie indication that, there is a long-run joint movement, variation and performance among the market and inclusive growth fundamentals towards a common steady state and/or equilibrium. Like Adebiyi (2005) and Nurudeen (2009), we established that there is a long-run and statistically significant relationship between R\textsubscript{GDP} and stock market development exemplified as M\textsubscript{CAP}, NW\textsubscript{IS} and VL\textsubscript{SC} at the current period. That is, one percent increase in stock market development using market capitalization ratio would lead to a rise in real R\textsubscript{GDP} in the long-run. This shows that stock market has significant impact on economic growth as exemplified by the growth rate of real R\textsubscript{GDP} (Ndansusu, 2004).
Table 6
Results of the Granger Causality Test

<table>
<thead>
<tr>
<th>Equations</th>
<th>F-Statistic</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_0$: $M_{CAP}$ does not Granger cause $R_{GDP}$</td>
<td>30.021***</td>
<td>$M_{CAP}$ $R_{GDP}$: Significant Causality</td>
</tr>
<tr>
<td>$H_0$: $R_{GDP}$ does not Granger cause $M_{CAP}$</td>
<td>5.124*</td>
<td>$R_{GDP}$ $M_{CAP}$: Significant Causality</td>
</tr>
<tr>
<td>$H_0$: $NW_{IS}$ does not Granger cause $R_{GDP}$</td>
<td>9.806***</td>
<td>$NW_{IS}$ $R_{GDP}$: Significant Causality</td>
</tr>
<tr>
<td>$H_0$: $R_{GDP}$ does not Granger cause $NW_{IS}$</td>
<td>17.422***</td>
<td>$R_{GDP}$ $NW_{IS}$: Significant Causality</td>
</tr>
<tr>
<td>$H_0$: $VL_{SC}$ does not Granger cause $R_{GDP}$</td>
<td>6.332**</td>
<td>$VL_{SC}$ $R_{GDP}$: Significant Causality</td>
</tr>
<tr>
<td>$H_0$: $R_{GDP}$ does not Granger cause $VL_{SC}$</td>
<td>0.7710</td>
<td>$R_{GDP}$ $VL_{SC}$: Not significant Causality</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation

In the context of causality test, it suggests the existence or flow of either a bidirectional or unidirectional causality. The results displayed in table 6 show and support the feedback hypotheses for $R_{GDP}$ versus $M_{CAP}$ and $R_{GDP}$ versus $NW_{IS}$ while it indicated the existence of one-way causality flow from $VL_{SC}$ to $R_{GDP}$. Our results established that $M_{CAP}$ Granger caused $R_{GDP}$; $NW_{IS}$ Granger caused $R_{GDP}$, and $VL_{SC}$ Granger caused $R_{GDP}$, implying unequivocally that either SMD or its surrogate(s) Granger caused $R_{GDP}$. This is a validation of the existence of the supply-leading hypothesis or SMD-led growth hypothesis for the Nigerian economy. This also means that growth in Nigeria over the period considered is SMD-led; thus confirming SMD as a veritable and potent determinant of inclusive growth in Nigeria.

Also, our results affirmed that $R_{GDP}$ Granger caused $M_{CAP}$ and $NW_{IS}$ in Nigeria during the period studied. Arising from our findings, since $R_{GDP}$ does not Granger cause $VL_{SC}$ but Granger caused only $M_{CAP}$ and $NW_{IS}$; this could be a partial confirmation of the existence of the growth-led or the demand-leading hypothesis for the Nigerian economy.

**CONCLUSION AND RECOMMENDATIONS**

Our study confirmed that the value of stocks traded is a determinant of inclusive growth and development and, it is statistically significant in explaining the tempo of economic and productive activities and growth in Nigeria during the period studied. However, the contribution of $M_{CAP}$ to the performance of real Gross Domestic Product ($R_{GDP}$) is positive and that of the value of stocks traded is also positively related to $R_{GDP}$. Our results supported Adebiyi (2005) and other studies such as Ishioro (2013a, 2013b, and 2022e) that $M_{CAP}$ boosts and enhances the performance of economic and productive activities.

It must be borne in mind that stock markets are not mere casinos where players come to bet, rather, they provide funds, that are critical elements for economic development of a country. Therefore, if the market is more liquid and as a result turnover rate increases based on investors' reaffirmed confidence and awareness; the growth of the economy would be achieved within both short and long-run periods.

**References**


Market and Nigeria's Economic Development held at the Nigerian Institute of International Affairs, Lagos, (January 21st, 1998)


