EFFECT OF STOCK EXCHANGE OPERATIONS ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT
This study examined the effect of Nigerian Stock Exchange operations on the Economic Growth in Nigeria. Data was collected from secondary sources, through the central bank of Nigeria database. To achieve the objective of the study, Nigerian Stock Exchange operations was proxy by All Share Index while Economic Growth was proxy by Gross Domestic Product. The study covered a seventeen year period. Ordinary least square regression technique was employed in examining the effect of all share index on economic growth. The findings revealed that all share index and gross domestic product are positively and significantly correlated. Based on the findings of this study, it is therefore recommended that an enabling environment should be created in order to enhance the participation of both private and public sector in the security market so as to stimulate economic growth.

Keywords: All Share Index, Economic Growth, Gross Domestic Product

1. Introduction
Economic growth is the persistent rise in the business activities of a country as well as improvement in the quality of lives of its citizenry. A country is said to experience economic growth if the key indicators of measuring a nation’s progress are favorable. These indicators include: gross domestic product, foreign direct investment, exchange rate, industrial production index, money supply and inflation. Economic growth also represents a long run expansion in the productivity potential of a country (Gupta, 2015). The sanity and soundness of a nation’s financial system determines her economic activities.

All share index measures the daily movement of stock prices. As a broad base index, it reflects the behavior of the common stock listed on the Nigerian Stock Exchange. The utilization of all share index as a determinant of economic growth has been a contentious issue in finance and economics. It is generally believed that huge declines in all share index are insightful of future recession. However, an increasing all share index are driving indicators of future economic growth (Mun, Siong & Thing, 2008). For example, the uncertainty encountered in the recession of 2009 set off a huge scale drop in all share index that was reflected in the Dow Jones and the S&P 500 (Fuentes, 2010). All share index has proven to have a link with economic growth. But to what extent does this relationship exist?

The concepts of economic growth and all share index have come a long way but research on this area in the Nigerian context is still rudimentary. It is on this premise that the study seeks to fill the literature, variable inclusion and environmental gaps. This paper is focused on examining the influence of all share index on the economic growth of Nigeria from 1999-2015. The choice of the period is based on the introduction of the Automated Trading System. Prior to the period under review, trading activities were carried out manually with so many associated bottlenecks.

The specific objective of this study is to:

i. Assess the influence of all share price index on the economic growth of Nigeria.

The study formulated the hypothesis in null form:

H0: All share price index has no significant influence on the economic growth of Nigeria

2. Literature Review

The Conceptual Clarification
According to Okpara (2006) economic growth is the increase in the amount of goods and services produced in an economy which is measured by positive changes in a country’s gross domestic product. Economic growth is the increase in national income, as reflected in the capacity of production of goods and services regardless of either the increase is on a larger or smaller population growth rate (Anyanwu, 1997). Furthermore, Adebiyi (2005) opined that economic growth is a positive change in the level of production by a country over a certain period of time. Overall, economic growth is the increase in a country’s productive capacity, as measured by increase in capital stock, advancement in technology and improvement in the quality and level of literacy.

Ebimobowei (2012) also defines economic growth as ‘an increase in an economy’s ability to produce goods and services as well as increase per capita national output or net national product over a long period of time.'
Economic growth in this regard is reflected in an increase in the productive capacity of a country over a given period of time which is characterized by increased production of goods and services.

All share index measures the daily movement of stock prices. It is a key indicator of investors’ confidence in the economy. All share index measures the accessibility dimension of the market activities. Low concentration of large firms to raise funds into productive ventures thereby boosting economic activities. All share index can be representative of the entire market - like the Nigeria Stock Exchange all-share index - or just for a section - like tech stocks or top 100 most capitalized stocks. All-share Index is a total market (broad-base) index, reflecting a total picture of the behaviors of the common stocks listed on the Nigerian Stock Exchange. It is calculated on a daily basis, showing how the prices have moved. It started in January 1984, the base year, with a value of 100 and has now risen beyond the 6,000 mark.

Empirical Review

Under this section, previous studies were reviewed to assess their empirical structures. It also helps to provide knowledge on previous methods and findings in the subject of study. Antonios (2010) conducted a study on the causal relationship between stock market development and economic growth in Germany for the period 1965-2007 using a Vector Error Correction Model (VECM). The variables used for the study were stock market index, and bank lending while gross domestic product was used as the dependent variable. The result of Granger causality tests indicated that there is a unidirectional causality between stock market development and economic growth with direction from stock market development to economic growth.

Sylvester and Enabulu (2011) examined the Effect of Stock Market Development on Economic Growth in Nigeria. Stock Market Development was proxy by labour, capital formation, investment and technology while Economic growth was proxy by gross domestic product. The study employed the use of Ordinary least squares regression (OLS) techniques to test the time series data from 1989 to 2008. The results indicated that there exist a positive relationship between economic growth and all the stock market development variables used. The study affirmed positive links between the stock market development and economic growth; and suggests the pursuit of policies geared towards rapid development of the stock market.

Ovat (2012) examined the role played by stock market in driving growth, with evidence from the Nigerian stock market. The study employed preliminary test such as unit root test, co-integration test and Granger causality to find out if the variables are stationary and free from unit root. The study disaggregated stock market development into two components: Stock market size and stock market liquidity. The findings suggest the dominance of stock market liquidity over market size. While there is a two way causation between stock market liquidity and economic growth with the strength of the causality coming more from stock market liquidity, market size is found to have little or no effect on growth. Equally the results suggest one way causation between financial deepening and growth with causality flowing from financial depending to economic growth.

Owolabi and Ajayi (2013) examined whether or not stock market promotes economic growth in Nigeria. Growth of GDP was the dependent variable while Labour, Capital formation/Investment and Technology was used as the independent variables. Ordinary least square regression (OLS) was employed using the data from 1971-2010. The result indicated that there is a positive relationship between economic growth and all the stock market development variables used. With 97% R-squared and 95% adjusted R-squared, the result showed that economic growth in Nigeria is adequately explained by the model for the period between 1971 and 2010. By implication 95% of the variation in the growth of economic activities is explained by the independent variables. The result of the study, which established positive link between the stock market and economic growth, suggests the pursuit of policies geared towards rapid development of the stock market.

Sa’adu (2014) studied the impact of Capital Market performance on economic growth of Nigeria for the period 1983 – 2010. Economic growth was proxy by gross domestic product while capital market performance was measured by market capitalization, total new issues, volume of transaction and listed equities. Data was collected using secondary source of data only. The technique employed was multiple regressions as tool of analysis for the study. The findings of the study show that the capital market performance has positively and significantly impacted on the Nigerian economy within the period of the study.

Jibril, Salihi, Wambai, Muhammad, Ahmad and Adamu (2015) investigated the effect of Nigerian Stock Exchange market development on economic growth using a20 year time series data from 1990-2010. The method of analysis is ordinary least square techniques. The study measures the relationship between stock market development indices and economic growth. The stock market capitalization was adopted as a proxy for market size while value traded ratio and turnover ratio were used as proxy for market liquidity. The study revealed that market
capitalization and value traded ratio have a negative correlation with economic growth while turnover ratio has a strong positive correlation with economic growth.

**Theoretical framework**

This study has been anchored on the following theories advocating the relevance of Nigerian Stock Exchange in enhancing economic growth.

**Harrod–Domar Model of Economic Growth theory**

The theory presupposed that growth depends on a country’s savings rate, capital/output ratio, and capital appreciation. Harrod–Domar model is a classical Keynesian model of economic growth. This theory is used in development economics to explain an economy's growth rate in terms of the level of saving and productivity of capital. It suggests that there is no natural reason for an economy to have balanced growth. The model was developed independently by Harrod (1939) and Domar (1946), although a similar model had been proposed by Cassel (1924). The Harrod–Domar model was the originator to the exogenous growth model.

Warranted growth rate is the rate of growth at which the economy does not expand indefinitely or go into recession. Actual growth is the real rate increase in a country's GDP per year. Natural growth is the growth an economy requires to maintain full employment. For example, if the labor force grows at 3 percent per year, then to maintain full employment, the economy’s annual growth rate must be 3 percent.

**Solow-Swan Growth Theory**

The neoclassical growth theory also known as the Solow-Swan growth theory or exogenous growth theory explains a class of economic model of long-run economic growth. It allowed for diminishing returns, perfect competition but not externalities. In the neoclassical growth process, savings were needed to increase capital stock, capital accumulation had limits to ensure diminishing marginal returns, and capital per unit of labour was limited. It postulates that growth also depends on population growth rate and that growth rate amongst countries was supposed to converge to a steady state in the long-run. Despite the modifications, the basic problems associated with the neoclassical thinking are that it hardly explains the sources of technical change (Essien&Bawa, 2007). The growth theory explains long-run economic growth by looking at productivity, capital accumulation, population growth and technological progress (Solow & Swan, 1956). This theory was developed independently by Solow and Swan (1956) and supersedes the post Keynesian Harrod – Domar theory. Due to its attractive mathematical characteristics, Solow-Swan proved to be a convenient starting point for various economic growth theories.

**Paul Romer Growth Theory**

According to Romer (1986) anything that enhances economic efficiency is also good for growth. Thus this theoretical framework indigenized technological process through “learning by doing” or “innovation processes”. It also introduced human capital, governance and institutions in the overall growth objectives. In this regard, Romers (1994) viewed creation of knowledge as a side product of investment and he takes knowledge as an input in the production functions of firms. His theory sees new knowledge as the ultimate determinant of long-run growth which is determined by investment in research technology. To Romer, ideas are more important than natural resources. Therefore, ideas are essential for the growth of an economy.

**Endogenous Growth Theory**

The newer growth theory (endogenous theory) fits the real world perfectly well and has important policy implications. This is because it traces growth of output per capita to two main sources: savings and efficiency. In other words it is not only factor accumulation that drives growth but also efforts to utilize them. An important economic policy implication of this thinking is that of achieving economic stability with low inflation and positive (real) interest rate that spurs saving, which is good for growth, Contessi (2009).

Endogenous or modern growth theory argues that financial intermediaries and security markets allow business owners and investors to undertake innovative activities, which affects economic growth. For the most part, this study is on all share price index, having an influence on economic growth which is why this research will be hinged on the endogenous and exogenous growth theory. This is simply because they provide understanding regarding security markets, population growth and also savings rate, capital/output ratio and capital appreciation respectively which are in line with explaining the depending variable.
3. Methodology
This study adopted the correlational research design. The correlational research design is a design which attempts to determine the extent of relationship that exists between two or more variables using statistical data. A correlational research design is used to describe the statistical association between two or more variables. It is therefore, most appropriate for this study because it allows for testing of expected relationships between and among variables and the making of predictions regarding these relationships. The population of the study comprises of all the 184 listed companies on the floor of the Nigerian Stock Exchange Market as at 31st December, 2015. This study is macro in nature and it focuses on the collective performance of the Nigerian Stock Exchange operations as it influences on the economic growth of Nigeria. This study was limited to operations within the Nigerian stock Exchange from 1999 – 2015 with a total number of 68 observations using quarterly data. Census sampling techniques was adopted for this study. The census sampling method was chosen over other methods because it takes into consideration, the contributions of all the companies in aggregate. The data for this study was obtained through secondary sources. The secondary data that contains relevant information that depicts the Gross Domestic Product and Nigerian Stock Exchange operations were collected from the Central Bank of Nigeria database. To achieve the specific objective of this study, the multiple regression technique (OLS) was employed. The technique is imperative owing to the fact that it allows the result to be interpreted based on elasticity.

Model Specification
The model specified for the purpose of testing the hypotheses of this study is presented as follows:

\[ GDP_t = \alpha + \beta_1 ASI_t + e \]

Where:
- GDP = Gross Domestic Product
- \( \alpha \) = Regression Constant
- \( \beta_1 \) = Coefficient of independent variables
- ASI = All share index
- \( e \) = Stochastic Error term (Disturbance term)
- \( t \) = Time series

The study adopted a parametric tool in examining the relationship between the Nigeria stock market operations and economic growth. Ordinary least square was used to determine the influence of the independent variable on the dependent variables. This is because the merit of the techniques is based on the premise that it produces optimum result in predicting numerical output when properly structured.

4. Presentation of Empirical Results
This section presents the result of data analysis tests of hypothesis formulated earlier in the paper. First, descriptive statistics, followed by the correlation matrix table and then the summary of Regression Result are presented and analyzed.

Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>68</td>
<td>11100.02</td>
<td>3796.009</td>
<td>5612.353</td>
<td>17255.98</td>
</tr>
<tr>
<td>ASI</td>
<td>68</td>
<td>24680.38</td>
<td>13745.38</td>
<td>1</td>
<td>60952.9</td>
</tr>
</tbody>
</table>

SOURCE: STATA OUTPUT RESULT

Table 1 shows the summary statistics for the dependent and independent variables used in the study. It shows the descriptive statistics for the dependent (GDP) and independent (ASI) variables. The outcome shows that GDP have a mean value of 11100.02 with a maximum value of 17255.98 and minimum of 5612.353 while ASI have a mean value of 24680.23 with a maximum value of 60952.9 and minimum of 1.

Correlation Results

Table 2 shows the correlation values between the dependent variable and the independent variable. The summary of the Pearson correlation coefficients of the variables of the study are presented in Table 2 as follows;

Table 2 Correlation Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>GDP</th>
<th>ASI</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>ASI</td>
<td>0.5791</td>
<td>1.000</td>
</tr>
</tbody>
</table>

SOURCE: STATA OUTPUT RESULT
Table 2 shows the correlations matrix between the dependent and independent variables. The correlation matrix indicates the degree of connection that exists between the variables. The result revealed that all share index is positively correlated to the economic growth of Nigeria. The result presented in table 2 above confirms that GDP have positive correlation with ASI the dependent variable. This therefore means that an increase in ASI will result to an increase in GDP.

Model Estimation and Test of Hypothesis

This table presents the regression result of the dependent variable (ASI) and the independent variable of the study (GDP). The presentation follows the analysis of the association and impact between the independent variable and the dependent variable of the study and also the cumulative analysis. This study estimated the parameters using econometric software STATA 21. 

\[ \text{GDP}_t = \alpha_0 + \beta_1 \text{ASI}_t + e \]

Table 3: Summary of Regression result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t. test</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERCEPT</td>
<td>7153.131</td>
<td>781.5556</td>
<td>9.15</td>
<td>0.000</td>
</tr>
<tr>
<td>ASI</td>
<td>.1599209</td>
<td>6.77</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.3353</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.3253</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>33.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: STATA OUTPUT RESULT

Table 3 above shows the summary of the estimated regression model:

The results show that the estimated model of the study is fit because the explanatory variable is significant in determining the dependent variable. To examine the influence of Nigerian Stock Exchange Operations (ASI) on Economic Growth (GDP), the general coefficient determination as revealed by R-square \( R^2 \) of the variables is 0.3353. This signifies the percentage coverage of the independent Variable on the Dependent Variable. It can also be observed that the coefficients of all the explanatory variables are positive and significant. The relationship between Nigerian Stock Exchange Operations (ASI) and Economic Growth (GDP) is significant and affirmative with a coefficient of 0.1599209 and a P-Value of 0.00. From the results in the models, as Nigerian Stock Exchange Operations (ASI) increases, Economic Growth (GDP) increases as well.

However, the outcome of the result may be as a result of stock exchange being a medium where firms’ accesses fund for development which serves as a catalyst for economic growth. The outcome of the study is in line with endogenous and exogenous growth theory which provides understanding as regards security markets, population growth and also savings rate, capital/output ratio and capital appreciation respectively. This is in line with the findings of Antonios (2010), Ovat (2012), Owolabi and Ajayi (2013) and Sa’adu (2014) who find a positively significant relationship for Stock Exchange Operations and Economic Growth. Based on this finding, the research study rejects the null hypothesis \( H_0 \) which states that Nigerian Stock Exchange Operations (ASI) does not influence Economic Growth (GDP). Therefore, the study deduces that Stock Exchange Operations (ASI) has an influence on the Economic Growth in Nigeria during the period 1999 to 2015.

5. Conclusion and Managerial Implication

In this research, empirical analysis has been conducted to determine whether the operations of Nigerian Stock Exchange promote economic growth or not from the period 1999 to 2015. As a result, the research has made it obvious that there is a positive correlation between the Stock Exchange operations (ASI) and economic growth (GDP) in Nigeria. In particular, the research attempted to establish empirically, the relationship between the All Share Index and Gross Domestic Product in Nigeria. The study shows that Stock Exchange operations promote economic growth in Nigeria.

The outcome of the research showed that some stern policy issues will have to be put in place to continuously promote Stock Exchange Operations to fuel economic growth in Nigeria. For instance, the liberalization of constraint on portfolio and dividend flow must be high on the agenda of reform. Thus firms will be able to increase investment spending and expand production of goods and services which will translate to higher economic growth in Nigeria. Due to the fact that the stock exchange operate in a macroeconomic environment, for that reason it is indispensable that the environment ought to be an enabling one so as to reach its full potentials. There should be continuous attempt to stimulate productivity in both the public and private sectors of the economy.
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