

Stock Market Performance And Economic Growth In Nigeria (1984 - 2011)

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Abstract

The Stock Market is a specialized financial market with acclaimed capacity to facilitate and mobilize savings and investment for economic and industrial growth. As a long term security provider, the market stands out as an agent for economic growth in many world economies. This paper tries to determine whether there is any causal link between stock market performance and economic growth in Nigeria. The study is significant for policy formulation and implementation by government and other stakeholders of the Nigerian Stock Market. Time Series data on Gross Domestic Product (GDP) and key stock market performance indicators were collated for the period 1984 to 2011. The Ordinary Least Square (OLS) Technique was adopted in analysing the data. The results indicate that about 88% of the changes in economic growth could be explained by changes in stock market performance in the short run, implicating Market Capitalization (MKTCAP), Value of Transaction in the market (VALTRAN) and All share Index(ALLSVI) as significant predictors. The long run effect is shown to stand at 95% with MKTCAP and ALLSVI as having significant influences. The Error Correction Model coefficient of -0.39 suggests slow speed in operators' ability to adjust to shocks in stock market performance and in restoring investors' confidence in such circumstances. The work therefore calls on stock market regulators and operators to address key policy issues that are capable of boosting market credibility and engendering stable macro-economic environment for all players in the capital market.

Keywords: stock market performance, market capitalization, all share index, value of transactions, economic growth.

INTRODUCTION

Economic growth in a modern economy hinges on an efficient and effective financial sector that pools domestic savings and mobilizes productive investments. Productive projects may remain redundant where absence of an efficient set of financial institutions exists. Investment that promotes economic growth and development requires medium and long term funding, which is far longer than the duration for most savers are willing to commit their funds. The inability of the banking sector, a major player in the money market to issue long-term fund for economic development has created a need for a better and more efficient market that can serve as a medium where long term capital can be mobilized to finance development projects/programmes of governments and corporate bodies. There is also insufficient empirical evidence on the extent to which the Nigerian Stock Market has influenced the nation's economic growth. In making this assessment, only four stock market performance proxies found to be relevant in previous studies were used. To further keep the work properly targeted, assessments of factors that influence capital market development in Nigeria were deliberately avoided.

The scope investigated is believed to be sufficient to generate results that could be of significance for policy formulation and implementation by relevant stakeholders in the Nigerian economy.

In the past, Nigeria has initiated and pursued many development-driven policies, notable among which are the Structural Adjustment Programme (SAP), Vision 2020, Millennium Development Goal (MDGs), National Economic Empowerment Development Strategy (NEEDS) under the auspices of the Federal Government, State Economic Empowerment Development Strategy (SEEDS) for the State Government, and Local Empowerment Development Strategy (LEEDS) for the Local Governments. The effective implementation of these programmes depends on the availability of long term funds. Stock market serves as a link where medium and long term fund could be raised to meet various development projects. The market is expected to contribute to economic growth through the specific services it offers. Notable among the functions of the stock market are mobilization of savings, creation of liquidity, risk diversification, improved dissemination and acquisition of information, and enhanced

incentive for corporate control (Ohiomu and Godfrey, 2011). Improving the efficiency and effectiveness of these functions, through prompt delivery of their services can augment the rate of economic growth.

The capital market is no doubt pivotal to the level of development and growth of the economy. Chinwuba & Amos, (2011) note that capital market is one of the major institutions that act in propelling a prostrate economy through sustainable investments for growth and development. It is a complex institution imbued with inherent mechanism through which long-term funds of the surplus sectors of the economy are mobilized, harnessed and made available to deficit sectors of the economy (Nyong, 1997). The market deals on medium and long term securities. Activities in the capital market are good indicators of the direction of the national economy. Efficiency and effectiveness in the performance of the market is expected to translate into buoyancy in economic development. The extent to which the Nigerian Stock Market achieves these target goals in the light of seemingly slow pace of economic development in the country remains a topical question. This study therefore tries to determine if there is any causal link between stock market performance and economic growth in Nigeria. The remaining parts of this paper are organized as follows: Section two is on prior literatures, while the methodology is presented in Section three. Section four discusses the result from the study, with conclusion and recommendation presented in Section five.

PRIOR LITERATURES

Economic Growth is the percentage increase in Gross Domestic Product (GDP) or Gross National Product (GNP) on year to year basis. It is a sustainable increase in per-capita national output or net national product over a long period of time. The rate of increase in total output must be greater than the rate of population growth (Dwivedi, 2008). Chinwuba & Amos, (2011) define economic growth as an increase of the national income or total volume of production of goods and services of a country accompanied by improvements in the total standard of living of the people. It is a comprehensive multidimensional process or a total upward structural shift of the social system in terms of the capacity and capability to produce, supply, distribute and consume goods and services required by a growing society with changing taste such that more efficient, higher and more equitable standard of living is attained and absolute poverty eliminated (Osamwonyi and Anikamadu, 2002).

The relevance of stock market to economic growth and development has drawn the attention of researchers to focus on relationship between stock market development and economic growth over the last few decades. Obadan, (1994) posits that stock

market provides the fulcrum for capital market activities and it is often cited as an indicator of business direction. An active stock market may be relied upon to measure changes in the general economic activities using the stock market index. Osaze and Anao, (1999) assert that capital market is the cornerstone of any financial system since it provides the funds needed for financing not only business and other economic institutions but also the programmes of government as a whole. Ilaboya and Ibrahim, (2004) document that capital market functions as an economic barometer for galvanising economic activities. Al-Faki, (2006) summarizes that the market covers the entire schedule that facilitate the buying and selling of securities.

Chen and Wong (2004) document that the nexus between stock returns and output growth and the rate of stock returns is a leading indicator of output growth. Stock market development and economic growth in African countries suggests a positive relationship between several indicators of the stock market performance and economic growth (Agarwal, 2001). The study of Mohtadi and Agarwal (2001) further expound this. The study covers many emerging markets over 21 years, and finds that this relationship exists both directly and indirectly by boosting private investment behaviour. In a similar study, Osinubi (2001) employed the least square regression using data from 1980 – 2000 to investigate whether “stock market promotes economic growth”. The results establish a positive link between economic growth and stock market development and suggest the pursuit of policies geared towards rapid development. In a related study, Caporale and Soliman (2004) observe that an organized and managed stock market stimulate investment opportunities by recognizing and financing productive projects that lead to improved economic activity, mobilize domestic savings, capital allocation proficiency, and help to diversify risks, and facilitate exchange of goods and services. Stock markets are expected to increase economic growth by increasing the liquidity of financial assets, make global and domestic risk diversification possible, promote wiser investment decisions, and positively influence corporate governance practices by increasing shareholders’ interest value (Alajekwu and Achugbu, 2012). Nieuwerburgh, Buelens, & Cuyvers (2005) examine the long term relationship between financial market development and economic development in Belgium. They employed stock market indicators from 1873 – 1935 and find that Institutional changes affecting the stock market explain the time-varying nature of the link between stock market development and economic growth.

The study by Sudharshan & Rakesh, (2011) examines whether the stock market performance leads to economic growth or vice versa; the study also

examines short-run and long-run dynamics of the stock market. Using, monthly Index of Industrial Production (IIP) and quarterly Gross Domestic Production (GDP) data for the time span of 1996 to 2009. Unit root tests, Granger Causality test, Engle-Granger Cointegration test and Error Correction Model were employed. The monthly results of Granger causality test suggest that there is a bidirectional relationship between Index Industrial Production (IIP) and Stock prices and quarterly results reveal that there is no relationship between GDP and BSE but in the case of NSE and GDP there is a unidirectional relationship that runs from Gross Domestic Product to NSE. The Engle-Granger residual based cointegration test suggests that there is a long-run relationship between the stock market performance and economic growth. Similarly, the results of error correction model reveal that when the long-run equilibrium deviates then the economic growth adjusts to restore equilibrium by rectifying the disequilibrium. A well developed stock market enhances savings and provides investment capital at lower costs by offering financial instruments to savers to diversify their portfolios. These markets efficiently allocate capital resources to productive investments, which would eventually promote economic growth (Dailami and Aktin, 1990). In France, Vazakidis and Adamopoulos, (2009) examine the causal nexus between stock market development and economic growth for the period of 1965 to 2007. The study employed co-integration, Granger causality test and Vector error correction model and find that there exists a significant positive association between economic growth and stock market development, and that interest rate has a negative effect on stock market development. Also, Brasoveanu, *et al.* (2008) study the correlation between capital market development and economic growth in Romania for the period 2000 to 2006. The results indicate that capital market development is positively correlated with economic growth by way of feed-back effect.

Soumya, & Jaydeep, (2008) empirically examine the causal relationship between stock market development and economic growth for the Indian economy. The study applied the techniques of unit-root tests and the long-run Granger non-causality test proposed by Toda and Yamamoto (1995). The causal relationships between the real GDP growth rate and three stock market development proxies were tested. The study finds a strong causal flow from the stock market development to economic growth. There also exists a bi directional causal relationship between real market capitalization ratio and economic growth. Chinwuba & Amos, (2011) examine the impact of the Nigerian capital market performance on the economic development of Nigeria and constructed two models.

The dependent variables identified in models 1 and 2 were Gross Domestic Product and Gross Fixed

Capital Formation respectively. The explanatory variables were Market capitalization, All Shares Index, Value of Transactions, Volume of Transactions and Number of listed companies for each of the models. The Ordinary Least Square (OLS) regression models were used with the aid of Microfit Interactive Econometric Software Package for the analysis of the data collected. The result indicates that Market Capitalization, All-Shares Index and number of listed companies were positively related to and capable of influencing Gross Domestic Product; while Volume of transactions and Market Capitalization were positively related to Gross Fixed Capital Formation. This shows that the performance of the capital market impacts positively on the economic development of Nigeria.

A related study by Ohiomu & Godfrey, (2011) examines the effect of stock market on economic growth in Nigeria. The results indicate that there is a positive relationship between economic growth and stock market development variables. Alajekwu, & Achugbu, (2012) study investigate the role of stock market development on economic growth of Nigeria using a 15-year time series data from 1994 - 2008. The study measures the relationship between stock market development indices and economic growth. The stock market capitalization ratio was used as a proxy for market size while value traded ratio and turnover ratio were used as proxy for market liquidity. The results show that market capitalization and value traded ratios have very weak negative correlation with economic growth while turnover ratio has very strong positive correlation with economic growth. This means that liquidity has propensity to spur economic growth in Nigeria and that market capitalization influences market liquidity.

METHODOLOGY

This study utilizes Time series data on major stock market performance and economic growth indices to assess the existence of any possible influence of the former on the latter. Annual data on Market Capitalization, Value of Transactions in the market, All-Shares Index, the total number of listed companies in the Nigerian Stock Market, and the Gross Domestic Product were collected for the period 1984 to 2011. These data are officially available and were collected from Nigerian Stock Exchange Annual Reports and Accounts of various years; Securities and Exchange Commission Annual Reports and Accounts; Central Bank of Nigeria Statistical Bulletin, the National Bureau of Statistics and NSE Facts Books.

ANALYTICAL FRAMEWORK

In investigating the relationship between stock market performance and economic growth, we made use of the neo-classical model, where rate of economic growth depends on the growth rate of: (i)

Capital Stock, K; (ii) Labour Supply, L; and (iii) Technological Progress Over Time, T (Diwivedi, 2008). The relationship between the national output and these variables are expressed in the form of a production function, thus:

$$Y = f(K, L, T) \quad (1)$$

The application of this model is however modified to represent the variables in our study and is accordingly specified as follows:

$$G = f(\text{MKTCAP}, \text{VALTRAN}, \text{ALLSVI}, \text{TOLIST}) \quad (2)$$

Therefore the estimation equation for this study is formulated thus:

$$\text{GDP} = \alpha_0 + \beta_1 \text{MkTCAP} + \beta_2 \text{VALTRAN} + \beta_3 \text{ALLSVI} + \beta_4 \text{TOLIST} + e_t \quad (3)$$

where:

GDP = Growth rate of GDP;

MKTCAP = Market Capitalization

VALTRAN = Value of Transaction

ALLSVI = All Share Index

TOLIST = Total Listed Companies

$\alpha_0, \beta_1, \beta_2, \beta_3, \beta_4$ are the parameter estimates and e_t is the error term.

Time series data are often assumed to be non-stationary hence it is necessary to ensure that there is

a stationary co-integrating relationship among the variables to avoid the problem of spurious regression. We used Error Correction Model (ECM) to correct possible problem of non-stationarity as well as capture the long run and short run properties.

DISCUSSION OF RESULTS

The results of our analysis are presented in the Appendices. Appendix I shows the descriptive statistics of the time series data on stock market performance variables while Appendix II indicates the inter relationship between these variables and economic growth (measured with GDP). Observe that the mean value for GDP, MKTCAP, VALTRAN, ALLSVI and TOLIST is ₦8115178 million, ₦2293932 million, ₦256459 million, 11612 and 270.357 respectively. Also observe that GDP, MKTCAP, VALTRAN, ALLSVI and TOLIST has a minimum value of ₦59,622.53 million, ₦5500 million, ₦230 million, 100 and 213 with a maximum value of ₦37,543.655, ₦13,294,600, ₦2,100,000, 57,990.22 and 310 respectively. Jacque Bera statistics shows that the variables are normally distributed.

The short- and long-run effects of stock market performance measures are shown in Appendices III and IV, and highlights extracted as Table 1 below.

Table I: Short-Run and Long-Run Effects of Stock Market Performance on Economic Growth

Test Statistic / Variables	Short Run		Long Run	
	Co-efficient	t-value	Co-efficient	t-value
C	-180278.4	-0.765217	-7650358	-1.056437
MKTCAP	5.185634	10.73049**	4.645902	19.18591**
VALTRAN	-26.17602	-8.245778**	-19.58786	-4.591093**
ALLSVI	-26.86114	-0.412045	72.13721	0.467462
ALLSVI(-1)	338.9847	7.074049**	-	-
TOLIST	5496.183	0.482130	34376.52	1.090067
ECM(-1)	-0.385202	-2.57861	-	-
R-Squared	0.879373		0.952279	
F-Statistic	23.08515		114.7417	
Prob of F-ratio	0.0000		0.0000	
Durbin-Watson statistic	1.855489		2.176362	

Source: Extracted from Appendices III and IV.

The results show that in the short-run about 88% of the changes in the GDP can be explained by MKTCAP, VALTRAN, ALLSVI, TOLIST. Market Capitalization and previous year All-Share Index are shown to have significant positive effects on Gross Domestic Product consistent with findings in Brasoveanu (2008), Vazakidis & Adamopoulos (2009), Chinwuba & Amos (2011), and Ohionu & Godfrey (2011), who in their different studies found market capitalization and All-Share Index among others to be positively related and capable of influencing economic growth. Value of Transactions (VALTRAN) is shown to be significant and negatively correlated with GDP against the back drop of findings in Chinwuba and Amos (2011) whose

works found significant positive link between the value of transactions in stock market and economic growth. However, our study partly agrees with Alajekwu and Achugbu (2012) who found very weak but negative relationship with economic growth. The total number of listed companies (TOLIST) is however shown to have insignificant effect on economic growth in the short run against our *a priori* expectation. However, the overall model is statistically significant since the calculated F-value of 23.08 is greater than the critical value at 1% probability level. The Error Correction Model (ECM) with a coefficient of -0.39 is correctly signed and significant at 1% probability level, suggesting that when there is any shock in the stock market, the speed of adjustment is about 39% and this is not fast enough to easily restore the confidence of investors in

the market. The Durbin Watson Statistics of 1.87 indicates the absence of autocorrelation in the model.

The long-run effect indicates that the selected stock market performance measures had improved predictive powers, accounting for about 95% of the changes in economic growth as against about 88% achieved in the short-run. Note also that only two of the capital market variables (MKTCAP and VALTRAN) were significant predictors of economic growth. While MKTCAP is positively correlated with GDP, VALTRAN is shown to be inversely related. Osinubi (2001) similarly established a positive link between stock market development and economic growth. This work therefore implicates market capitalization as the most critical capital market performance factor that drives economic growth in Nigeria consistent with results in Chinwuba & Amos (2011). With an F-ratio of 114.74 significant at 1% probability level, the results also attest to the appropriateness of the model specification in the long-run. The Durbin Watson Statistics of 2.17 indicate the absence of autocorrelation in the model.

CONCLUSION AND RECOMENDATIONS

We examined the impact of stock market performance on economic growth in Nigeria using annual data from 1984-2011. To achieve this we constructed a model with Gross Domestic Products as our proxy for economic growth while Market Capitalization, Value of Transaction, All-Share Index and Total Listed Companies serve as our predictor variables. Our results in the short-run and long-run implicated Market Capitalization and Value of Transaction as having significant impact on economic growth of Nigeria. The All-Share Index (ALLSVI) failed to sustain its predictive power in the long run, while Total number of Listed companies (TOLIST) in the stock market remained insignificant. Our study further established that shocks in the stock market trigger off severe negative consequences on investors' confidence and this takes long period of time to restore. This largely explains why the Nigeria Stock Market has been very slow in picking up for the past few years. The outcome of this study will, no doubt, benefit the Nigerian government, capital market players and the general reading public as it contributes to existing body of knowledge in this area by providing reliable model for measuring both the short-run and long-run effects of stock market performance on economic growth in Nigeria over a period of twenty-eight (28) years. Stock market regulators should therefore address policy issues that are capable of boosting the confidence of investors through improved policy formulation, implementation and coordination to engender a stable macro-economic environment. As a sure way of increasing market capitalization, more companies should be encouraged to get listed on the floor of the

market by modifying listing requirements for companies without sacrificing investors' interests. The Small and medium entrepreneurs should be encouraged to access the market for investible funds and strengthen their fund mobilization ability given their close association with the grass root.

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APPENDIX I: DESCRIPTIVE STATISTIC

	GDP	MKTCAP	VALTRAN	ALLSVI	TOLIST
MEAN	8115178	2293932	256459.6	11612.72	270.3571
MEDIAN	2755202	283850	11950	6056.6	270.5
MAXIMUM	37543655	13294600	2100000	57990.22	310
MINIMUM	59622.53	5500	230	100	213
STD. DEV	10955972	3868292	518909.8	13929.61	25.00995
SKEWNESS	1.403275	1.631192	2.472729	1.541041	-0.43555
KURTOSIS	3.807889	4.245603	8.403848	5.374347	2.671828
JARQUE BERA	9.950974	14.22713	62.60232	17.65955	1.010911
PROBABILITY	0.006905	0.000814	0	0.000146	0.603231
OBSERVATIONS	28	28	28	28	28

APPENDIX II: CORRELATION OF DATA

VARIABLES	GDP	MKTCAP	VALTRAN	ALLSVI	TOLIST
GDP	1	0.913588	0.724345	0.759384	0.713971
MKTCAP	0.913588	1	0.928437	0.866675	0.702061
VALTRAN	0.724345	0.928437	1	0.872271	0.62594
ALLSVI	0.759384	0.866675	0.872271	1	0.704111
TOLIST	0.713971	0.702061	0.62594	0.704111	1

APPENDIX III: Short-run Effects of Stock Market Performance on Economic Growth

Dependent Variable: DGDGP

Method: Least Squares

Date: 12/17/12 Time: 04:35

Sample(adjusted): 1986 2011

Included observations: 26 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-180278.4	235591.4	-0.765217	0.4535
DMKTCAP	5.185634	0.483261	10.73049	0.0000
DVALTRAN	-26.17002	3.173748	-8.245778	0.0000
DALLSVI	-26.86114	65.18982	-0.412045	0.6849
DALLSVI(-1)	338.9847	47.91947	7.074049	0.0000
DTOLIST	5496.183	11399.80	0.482130	0.6352
ECM(-1)	-0.385202	0.149392	-2.578461	0.0184
R-squared	0.879373	Mean dependent var		1441375.
Adjusted R-squared	0.841281	S.D. dependent var		2066137.
S.E. of regression	823140.3	Akaike info criterion		30.30444
Sum squared resid	1.29E+13	Schwarz criterion		30.64316
Log likelihood	-386.9578	F-statistic		23.08515
Durbin-Watson stat	1.855489	Prob(F-statistic)		0.000000

SOURCE: Computed with Data extracted from Annual Reports & Accounts of the NSE, SEC, CBN Statistical Bulletin, and National Bureau of Statistic

APPENDIX IV: Short-run Effects of Stock Market Performance on Economic Growth

Dependent Variable: GDP

Method: Least Squares

Date: 12/17/12 Time: 13:56

Sample: 1984 2011

Included observations: 28

Newey-West HAC Standard Errors & Covariance (lag truncation=3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7650358.	7241657.	-1.056437	0.3017
MKTCAP	4.645902	0.242152	19.18591	0.0000
VALTRAN	-19.58786	4.266493	-4.591093	0.0001
ALLSVI	72.13721	154.3169	0.467462	0.6446
TOLIST	34376.52	31536.15	1.090067	0.2870
R-squared	0.952279	Mean dependent var		8115178.
Adjusted R-squared	0.943980	S.D. dependent var		10955972
S.E. of regression	2593130.	Akaike info criterion		32.53506
Sum squared resid	1.55E+14	Schwarz criterion		32.77296
Log likelihood	-450.4909	F-statistic		114.7417
Durbin-Watson stat	2.176362	Prob(F-statistic)		0.000000

SOURCE: Computed with Data extracted from Annual Reports & Accounts of the NSE, SEC, CBN Statistical Bulletin, and National Bureau of Statistic