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CAPITAL MARKET PERFORMANCE AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT: This study examines the causal relationship between stock market performance and economic growth in Nigeria for the period 1987 -2014, using annual secondary data. Economic growth is proxied by gross domestic product (GDP) while capital market performance is measured by market capitalization, total new issues, volume of transaction and listed equities. The objective is to empirically analyze, using link between capital market performance and economic growth (i.e. whether stock market performance causes economic growth or itself is a consequence of increased economic activity). The investigation of the causal relationship was conducted using Granger causality test based on the Vector Autoregressive (VAR) model. The statistical techniques used include the unit root Augmented Dickey Fuller test in order to test for stationarity for all the time series in their levels and first differences. The Johansen co-integration test was used to investigate whether the variables are cointegrated of the same order taking into account the trace statistics and the maximum eigen-value tests. The variables were found to be cointegrated with at least one co-integrating vector. The findings imply that the causality between economic growth and capital market runs unilaterally from the capital market performance indicators to the GDP. From the results, it was inferred that the movement of stock prices in the Nigeria Stock Exchange reflect the macroeconomic conditions of the country and can therefore be used to predict the future path of economic growth. The study shows that the capital market performance has positively and significantly impacted on the Nigerian economy within the period of the study (1987- 2014). The study therefore, recommends among others that the financial and monetary authorities should ensure free flow of information in the market. This is necessary in order to attract more investors and increase new issues which will automatically increase the quantum of market capitalization that will result in improving the performance of the Nigerian capital market and by extension the economy.

Keywords: Capital Market, Capital Market Performance, Economic Growth, GDP, the Nigerian Stock Exchange.

1. INTRODUCTION

The Capital market is one of the major pillars of long-term economic growth and development. The market serves a broad range of clientele, including different levels of government, corporate bodies and individuals. The growth of the capital market has become one of the barometers for measuring the overall economic growth of a nation (Emenuga, 1998).

Although interest in identifying a formal link between financial system and economic growth is fundamental, the basic intuition behind this relation is relatively easy to surmise. This is because of the fact that the main goal of the capital market is the channeling of funds from the surplus sector to the deficit sector of the economy. It plays a major role in human capital investments which is an essential element of economic growth and development. From this point of view, one should expect that as the capital market develops and deepens, then efficient allocation of the financial resources for the investment is facilitated and thus the frontier of production possibilities is increased (Adamu and Sanni, 2005). Economic growth in a modern economy hinges on an efficient financial sector that pools domestic savings and mobilizes foreign capital for productive investments. Financial markets play an important role in the mobilization of financial resources for long term investment through financial intermediation. This study therefore followed this line of thinking and examined the causality between stock market performance and the economic growth in Nigeria.

This study is organized as follows: section one is the introduction, section two reviews the Literature while section three considers the Methodology of the study. Section four presents the data, test hypothesis and discusses the findings, while section five concludes the study.

1.2. Purpose of the Study

The general objective of this study was to analyze the relationship between the capital market performance and economic growth in Nigeria. Specifically, the work examines:

- i. The causal relationship between capital market performance and economic growth.
- ii. The direction of causal relationship between and capital market performance and economic growth.

1.3. Scope of the Study

The study focuses on the activities of the secondary arm of the Nigerian capital market, which is the Nigerian Stock Exchange. It covers only the equity segment for the period 1987 to 2014.

1.4. Research Hypotheses

- H₀₁: There is no significant relationship between capital market performance and economic growth in Nigeria.
- H₀₂: Capital market performance does not Granger- cause economic growth.
- H₀₃: Economic growth does not Granger- cause capital market performance

2. THEORETICAL FRAMEWORK

The exogenous growth model, also known as the neo – classical growth model or Solow-Swan growth model was first devised by, Robert Solow in 1956. The centre piece of the standard neoclassical growth model developed by Solow is an aggregate production function of the form: $Y_t = F(K_t, L_t, A_t)$ (Solow, 1956).

Where: Y is output, K is capital, L is labour and A is an index of technology or efficiency. Solow posits that F has the usual neoclassical properties; in particular, it is characterized by constant returns to scale, decreasing returns to each input, and a positive and constant elasticity of substitution. The fundamental dynamic equation of the model relates the evolution of the capital stock to a constant rate of saving and a constant rate of depreciation. Labour and the level of technology grow at exogenous exponential rates. This model assumes that countries use their resources efficiently and that there are diminishing returns to capital as labour increases. From these two premises, the neo-classical model makes three important predictions; first, increasing capital relative to labour creates economic growth, since people can be more productive given more capital. Second, poor countries with less capital per person will grow faster because each investment in capital will produce a higher return than rich countries with ample capital. Third, because of diminishing returns to capital, economies will eventually reach a point at which no new increase in capital will create economic growth. This point is called a “steady state.” If there were no technological progress, growth in this model would eventually come to a halt. However, the formulation of the model is chosen so as to allow increases in efficiency to offset the diminishing returns to capital.

In endogenous growth theory, the growth rate depended on one variable: the rate of return on capital (Gillman *et al.*, 2002). Lucas on the other hand proposed the following production technology:

$$Y_t = AK_t^\beta$$

$$L_t^{1-\beta} h_t \quad (\text{Lucas, 1988})$$

where Y, A, K and L are, once again, output, technology, capital and labour, while u is the fraction of an individual's time allocated to work, h is the skill level or human capital of the representative agent, and h_y is the average human capital in the economy. The level of technology, A, is assumed to be constant (so that it could in principle be dropped from the expression or subsumed within the capital term).

2.1. Empirical Review

Several literatures on capital market development and economic growth produce mixed results. Goldsmith (1969) suggests that the size of the financial intermediary is positively correlated with the quality of financial functions provided by the financial sector.

In the early 1990s, [King and Levine \(1993\)](#) built on [Goldsmith \(1969\)](#) work. They studied 77 countries over the period 1960-1989, systematically controlling for other factors affecting long-run growth, examined the capital accumulation and productivity growth channels, constructed additional measures of the level of financial development, and analyzed whether or not the level of financial development predicts long-run economic growth, capital accumulation, and productivity and growth. In terms of measures of financial development, they first examined the depth of financial intermediaries which is simply a measure of the size of financial intermediaries. To achieve this they used liquid liabilities of the financial system (currency plus demand and interest-bearing liabilities of banks and nonbank financial intermediaries) divided by GDP.

[King and Levine \(1993\)](#) also examined the amount of credit extended to private enterprises as this affect economic growth. They found very consistent results across the different financial development indicators. [King and Levine \(1993\)](#) indicated that there is a strong positive relationship between each of the financial market development indicators and economic growth. [Demirgüç-Kunt and Levin \(1996\)](#) examined the interaction between the stock market and financial intermediaries' development and contend that across countries, the level of stock market development is positively correlated with the development of financial intermediaries.

[Shah and Thomas \(1997\)](#) can be considered as some of the scholars supporting the role of stock market development for economic growth. According to them, the stock market in India is more efficient than the banking system on the account of the enabling government policies and that stock market development has a key role to play in the reforms of the banking system by generating competition for funds mobilization and allocation. The result of their study was positive. [Levine and Zervos \(1998\)](#) constructed numerous measures of stock market development to assess the relationship between stock market development and economic growth, capital accumulation, and productivity growth in a sample of 42 countries over the period 1976- 1993. Their study builds on pioneering work by [Atje and Jovanovic \(1993\)](#).

For the purposes of this research study, focus is only on certain indicators as the basis of measurement such as liquidity and turnover ratio. [Levine and Zervos \(1998\)](#) posited that the initial level of stock market liquidity and the initial level of banking development, otherwise called bank credit, are positively and significantly correlated with future rates of economic growth, capital accumulation, and productivity growth over the next 18 years even after controlling for initial income, inflation, government spending, the black market exchange rate premium, and political stability. Bank credit equals bank credit to the private sector as a share of GDP. These results are consistent with the view that stock market liquidity facilitates long-run growth ([Bencivenga et al., 1996](#); [Holmstrom and Tirole, 1993](#); [Levine, 1991](#)). The results are however inconsistent with models that emphasize the negative aspects of stock markets liquidity.

([Guiso et al. \(2004\)](#)), however, have argued that local financial conditions matter even in a single country. Their study showed that local financial conditions influence economic performance across the different regions. That is, local financial development is an important determinant of the economic success of an area even within a single country. ([La-Porta et al. \(2001\)](#)) used an alternative indicator of financial development. They examined the degree of public ownership of banks around the world.

In Nigeria, a lot of literatures exist on financial intermediation, capital accumulation and capital market and economic growth ([Acha, 2011a;2011b](#); [Adamu and Sanni, 2005](#); [Ezeoha et al., 2009](#); [Ogwunike and Omole, 1996](#); [Osinubi and Amaghionyeodiwe, 2003](#)) Some of these authors also examined the relationship between capital market development and economic growth.

[Adamu and Sanni \(2005\)](#) examined the role of the stock market in Nigeria's economic growth using Granger-causality test. They discovered a one-way causality between GDP growth and market capitalization and a two-way causality between GDP growth and market turn-over. They inferred a positive and significant relationship between the GDP and the capital market. [Osinubi and Amaghionyeodiwe \(2003\)](#) examined the relationship between the Nigerian stock market and economic growth during the period, 1980-2000. Their results did not support the claims that stock market developments promote economic growth. This negative result may have been due to the nature of data collected and the technique of data analysis adopted. Perhaps, if better samples of data were collected that were not only restricted to the manufacturing industry the result of this study may have been different from what was obtained.

[Ezeoha et al. \(2009\)](#) work investigated the nature of the relationship that exists between capital market development and the level of investment flows in Nigeria. The study discovered that capital market development promotes domestic private investment flows. Thus, this enhances the economy's production capacity as well as the promotion of national output. One of the findings of this study is that

this does not encourage foreign private investment in the country and therefore more need to be done in order for the market to be able to attract foreign investment.

3. METHODOLOGY

3.1. Data Sources

The study used annual secondary data from 1987 to 2014. The dataset consisted of market capitalization, total new issues, volume of transactions and listed equities and the GDP. The study employed a vector autoregressive (VAR) model to estimate and provide empirical evidence on the nature of causal relationship between the capital market performance indicators and growth in GDP. The VAR model provided a systematic way to capture rich dynamics between the variables under study.

The model specified for the purpose of testing the hypotheses of the study is presented below:

$$GDP_t = a_0 + a_1 tMCAP_t + a_2 tTNI_t + a_3 tVLT_t + a_4 tLEQ_t + e_t$$

Where:

GDP = Gross Domestic Product

a_0 = Regression Constant

$a_1 - a_4$ = Coefficient of independent variables.

MCAP = Market Capitalization

TNI = Total New Issues

VLT = Volume of Transactions

LEQ = Listed Equities

e = Stochastic Error term (Disturbance term)

t = Time series

4. RESULTS AND DISCUSSION

Table 1. Unit root test result

Variables	Lag	ADF Stat @ Stationary	Coefficient		Order of integration	Remark
			Level	1 st Diff		
GDP	2	-5.6833	-3.0206	-3.0299	1(1)	Stationary
MCAP	1	-3.9826	-3.0404	-	1(0)	Stationary
TNI	0	-4.8705	-3.0299	-	1(0)	Stationary
VLT	0	-5.9102	-3.0299	-	1(0)	Stationary
LEQ	0	-5.9963	-3.0299	-	1(1)	Stationary

Source: Unit root test result using SPSS

The results of the unit root test for stationarity are presented in [table 1](#) above. As shown in the table, it can be seen that the GDP is integrated of order one, while the MCAP, TNI, VLT and LEQ are not stationary at level. This means that the GDP was differenced once before it could attain stationarity while the other time series variables attained stationarity without any differentiation. The hypothesis of non-stationary was therefore rejected for the entire variables. The optimum lag length, which is a guide for model selection are reported in column two of the table and were selected on the basis of the Schwarz Criterion (SC). This provides a basis for the test for cointegrating relationships among the stationary series of the same order. We next proceed to explaining the cointegration test as follows:

Table 2. Johansen cointegration test result

H0	HA	Eigen value	Trace (stat)	Critical Value (0.05)	Prob.
R=0	r=1	0.959295	152.5567	76.28	0.0000
R≤1	r=2	0.820452	91.7298	54.0790	0.0000
R≤2	r=3	0.75742	59.1009	35.1926	0.0000
R≤3	r=4	0.680531	32.1886	20.2618	0.0007
R≤4	r=5	0.4248	10.50773	9.1645	0.02

Source: Johansen cointegration test result using SPSS

Cointegrating Vector normalized on GDP

$$\text{GDP} = 0.3462\text{LMCAP} - 0.1439\text{LTNI} - 0.64989\text{LVLT} + 1.0912\text{LLEGS} - 7.755719 \quad (0.07467) \\ (0.01248) \quad (0.04464) \quad (0.31656) \quad (0.63825)$$

The result of the Johansen co integration test presented above shows that Trace test indicates five (5) cointegrating equations at 0.05 significant level. From the above equation, the Market capitalization (MCAP) and total listed equities and government stocks (LEGS) are positively signed while the total new issue (TNI) and total value of transactions (VLT) have an inverse relationship with the gross domestic product (GDP).

This shows that a million naira increase (decrease) in LMCAP and (LEQ) will amount to about 0.3462 and 1.0912 million naira increase (decrease) in GDP respectively while a million naira increase (decrease) in TNI and VLT will results to 0.1439 and 0.6499 decrease (increase) in GDP in the long run respectively. The constant coefficient which is negatively signed indicates that there will constant declines of about 7.7557 million naira if the capital market proxies were constant or equated to zero.

Accordingly, all the independent variables conform to the a priori expectation except the LEQ which was negatively signed against the GDP. Also, the variables are all significant using the standard error test, this is a clear indication that the variables proxied to capture capital market have a relative significant impact on the economy. Though, there is tendency that the capital market will have remarkable impact on the economy, however, the impact is still relatively significant. This is further explained by the residual plot of the model, as depicted below. The horizontal scale is the number of lags, which is the time difference (in samples) between the signals at which the correlation is estimated. The horizontal dashed lines on the plot represent the confidence interval of the corresponding estimates. Any fluctuations within the confidence interval are considered to be insignificant. Though, our model has a residual autocorrelation function within the confidence interval, indicating that the residuals are uncorrelated, however, there are some residual fluctuations that are produced outside the confidence interval. The bottom axis shows the cross-correlation of the residuals with the input. A good model should have residuals uncorrelated with past inputs (independence test). The model also passed the independence test, having residuals uncorrelated with past inputs. The evidence of correlation indicates that the model does not describe how the output is formed from the corresponding input.

Table 3. Granger Causality Test

<i>Null Hypothesis:</i>	<i>Obs</i>	<i>F-Statistic</i>	<i>Probability</i>
MCAP does not Granger Cause GDP	28	3.72074	0.05060
GDP does not Granger Cause MCAP		1.97486	0.17559
TNI does not Granger Cause GDP	28	0.00928	0.99077
GDP does not Granger Cause TNI		0.84916	0.44867
VLT does not Granger Cause GDP	28	2.39890	0.12710
GDP does not Granger Cause VLT		4.56805	0.02971
LEQ does not Granger Cause GDP	28	0.03847	0.96236
GDP does not Granger Cause LEQ		0.12420	0.88416

Source: Granger Causality test result using SPSS

The causality test results suggested a bidirectional causation between the GDP and the value of new issue (VLT) and a unidirectional causality from Market capitalisation to the GDP (MKT→GDP) and not vice versa. The F statistics was significant at 5 percent using a two-tailed test; the critical value is 2.08 for (15, 4 degree of freedom). On the other hand, there was no “reverse causation” from GDP to the MCAP. Furthermore, there was independence “no causation” between the GDP and TNI as well as GDP and LEQ. This is a clear indication of the relative positive impact the capital market played on the economic growth of the country.

Multiple regressions have been used to estimate the relation between the independent variables of capital market performance (market capitalization, total new issues, volume of transaction and listed equities) and the dependent variable (Gross Domestic Product). The technique of ordinary least square was used to estimate the regression coefficient in the model of the study.

Thus:

$$\text{GDPT} = a_0t + a_1t\text{MCAPt} + a_2t\text{TNI}t + a_3t\text{VLT}t + a_4t\text{LEQ}t + e \quad t$$

Table 4. Descriptive Statistics

VARIABLE	MEAN	STD. DEV.	MIN	MAX	SKEWNESS	KURTOSIS
GDP	3.2544	1.56639	6.75	204.00	0.711	0.16
TNI	1.8820	4.67986	1.94	159.80	2.995	8.666
MCAP	1.3502	3.10126	1.33	4025.70	3.042	9.220
VLT	2.7779	9.02127	4.40	136.00	4.111	17.585
LEQ	2.5868	29.4355	194.00	310.00	-0.538	-0.155

Source: Descriptive Statistics using SPSS

The above table indicates that on the average, during the period of the study the gross domestic product is about N325, while total new issues, market capitalization, volume of transaction and listed equities have a mean of N188, N135, N278 and N259 respectively. Market capitalization has the lowest standard deviation of 3.10 signifying its high contribution to the performance of the capital market in terms of economic growth. Listed equities have the highest standard deviation of 29.44 which indicates that it contributes the lowest towards the economic growth. This can be confirmed by the significant F values of the individual contributions of the independent variables to the economic growth of Nigeria. The next table that follows presents tolerance and variance inflation factor values for the test of multicollinearity between the explanatory variables.

Table 5. Tolerance Value and Variance Inflation Factor

VARIABLES	TOLERANCE	VIF
TNI	0.007	1.550
MCAP	0.007	1.926
VLT	0.233	4.295
LEQ	0.663	1.509

Source: Regression Result using SPSS

The tolerance value and the variance inflation factor (VIF) are two advanced measures of assessing multicollinearity between the independent variables of the study. The variance inflation factors are consistently smaller than ten indicating complete absence of multicollinearity (Johansen, 1991; Neter *et al.*, 1996). This shows the appropriateness of fitting the model of the study within the four independent variables. In addition, the tolerance values are consistently smaller than 1.00 thus further substantiating the fact that there is no multicollinearity between independent variables (Tobachnick and Fidell, 1996).

5. CONCLUSION AND RECOMMENDATIONS

First, the study has provided evidence on the four independent variables; market capitalization, total new issues, volume of transaction and listed equities in explaining and predicting economic growth in Nigeria. The study concluded that the four variables have played a significant role in influencing the capital market performance on Nigeria's economic growth.

Secondly, the study also established significant positive relationship between total new issues and economic growth. It is therefore concluded that as new issues are raised and floated in the market, this in turn increases the number of shares traded and economic growth equally expands as well as impacting on the GDP.

Thirdly, the study documented a significant positive relationship between volume of transaction and the gross domestic product. This concludes that the volume of transaction is an important factor in determining the magnitude of trading of shares in the capital market and it goes a long way in improving the performance of the market and as well increases the efficiency of the market which invariably improves the economic growth of Nigeria. Among the predictable variables, market capitalization contributed highest to economic growth. In respect of volume of transaction, the study concluded it has the lowest contribution to the aggregate impact of capital market performance on economic growth in Nigeria.

In addition, in respect of listed equity, the study concluded that listed equity of Nigerian capital influences the performance of the market and improves economic growth.

5.1. Recommendations

Based on the findings and conclusions of the study, the following recommendations are made:

Firstly, there is need for improvement in the declining market capitalization by encouraging more foreign investors to participate in the market, maintain state of the art technology that will ensure a free flow of information in the market to attract more investors as well as increase new issues which will automatically increase the quantum of market capitalization. There is also the need to restore confidence in the market by the Securities and Exchange Commission and the Nigerian Stock Exchange through ensuring transparent and fair trading transactions and dealings in the stock exchange. Government should remove impediments to market growth in form of legal and regulatory barriers because they are sometimes disincentives to investment.

Secondly, as observed, the total listed equity in the NSE is still very low compared to other stock markets like those of South Africa and Egypt. Therefore, to increase the number of listed companies there is need to ensure stable macroeconomic environment, to encourage foreign multinational companies or their subsidiaries to be listed on the Nigerian stock exchange and also to improve the trading system in order to increase the ease with which investors can purchase and sell shares.

Furthermore, the government should invest more and develop the nation's infrastructure in order to create an enabling environment for businesses to grow and for productivity and efficiency to thrive which will bust economic activities.

Thirdly, total new issues are very important to the growth of any capital market. Therefore, government should employ appropriate trade policies such as establishing National Association of Securities Dealers (NASD) that promote the inflow of international capital and foreign investment, so as to enhance the production capacity of the nation. The Government should restore the confidence of shareholders (investors) due to the declining fortune of the stock market.

Fourthly, the volume of transaction needs to be boosted by NSE through the introduction of more derivatives, convertibles, futures and options in the markets in order to be internationally competitive. Finally, the Nigerian financial and monetary authorities should ensure free flow of information in the market. This is necessary in order to attract more investors and increase new issues which will in turn increase the quantum of market capitalization that will result in improving the performance of the Nigerian capital market.

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APPENDIX: Values of dependent and independent variables

YEARS	GDP (₦Bn)	MCAP (₦Bn)	(TNI) (₦Mn)	VLT (₦Mn)	LEQ
1987	205,221.1	4,997.8	455.2	332.1	194
1988	199,688.2	4,025.7	533.4	214.8	205
1989	185,598.1	5,768.0	448.5	397.9	212
1990	183,563	5,514.9	159.8	418.2	213
1991	201,036.3	6,670.7	817.2	319.6	220
1992	205,971.4	6,794.8	833.0	494.4	240
1993	204,806.5	8,297.6	450.7	348.0	244
1994	204,806.8	10,020.8	400.0	137.6	253
1995	263,729.6	12,848.6	1,629.9	521.6	267
1996	267,660	16,358.4	9,964.5	265.5	295
1997	265,379.1	23,125.0	1870.0	136.0	239
1998	271,365.5	31,272.6	3,306.3	313.5	251
1999	274,833.3	47,436.1	2,636.9	402.3	272
2000	275,450.6	66,368.0	2,161.7	569.7	276
2001	281,407.4	180,305.1	4,425.6	1,838.8	276
2002	293,745.4	281,815.8	5,858.2	7,062.7	276
2003	302,022.5	281,887.2	10,875.7	11,072.7	264
2004	310,890.1	262,517.3	15,018.1	13,572.3	264
2005	312,183.5	300,041.1	12,038.5	14,027.4	268
2006	329,978.7	472,290.0	17,207.8	28,154.6	260
2007	356,994.3	662,561.3	37,198.8	57,637.2	261
2008	433,203.5	764,975.8	61,284.0	60,088.6	258
2009	477,833	1,359,274.2	180,079.9	120,703.0	265
2010	527,576	2,112,549.6	195,418.4	225,820.6	277
2011	634,251	13,294,059	1,935,080	2,100,000	310
2012	674,889	9,562,970	1,509,230	4,400,000	301
2013	716,949	7,030,800	1,724,214	6,572,000	266
2014	801,700	9,920,000	2,440,000	7,755,000	264

Source: NSE, SEC, CBN Publications (various issues).