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International Digital Organization for Scientific Research  
IDOSR JOURNAL OF BANKING, ECONOMICS AND SOCIAL SCIENCES 3(1): 1-8, 2018.

ISSN:2579-082X

## Capital market and economic growth in Nigeria (1981-2015)

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### ABSTRACT

The study examined the impact of capital market on Nigeria's economic growth over the period of 1981 - 2015. Gross domestic product is the dependent variable while market capitalization, value of transaction, Gross fixed capital formation, interest rate, and listing in the Nigerian stock exchange are independent variables. Using time series data, and the study adopted purely analytical methodology of modern econometric techniques such as ordinary least square regression, stationarity and unit root test, Cointegration test. Error correction model, and diagnostics in the estimation of the relevant relationship in its investigation. The result of the coefficient of determination  $R^2$  statistic shows that 99% variation in economic growth is accounted for by the explanatory variables in the model. The result of the stationarity tests indicate that all the variables such as real gross domestic product, market capitalization, value of transactions, listing on the Nigerian stock exchange and interest rate are stationary. The result of cointegration test confirms the existence of non relationship among the variables. The result of OLS shows the relationship between capital market indicator and economic growth. Confirms a positive and significant relationship between market capitalization and economic growth, value of transaction has a negative but insignificant influence on economic growth. Listing on the Nigerian stock exchange has a negative impact on economic growth and interest rate has a positive and significant impact on economic growth. The study therefore, recommended that government should institute expansionary capitalization policy that has the ability and potentials to boost the capital base of the capital market, and contractionary listing policy that has the ability and potentials to reduce the fall in economic growth necessitated by the number of listed companies in the capital market.

Keywords: Capital market, interest, economic growth and market capitalization.

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### INTRODUCTION

Economic growth is regarded as an increase in a country's productive capacity enhanced by capital accumulation. Capital accumulation or formation which is aided through the capital market, is seen as one of the most important factors in the process of economic growth. This has been recognized by researchers and policy makers as the primary determinant of

economic growth of any country. According to [1], capital market is a highly specialized and organized financial market and indeed an essential agent of economic 'growth because of its ability to facilitate and mobilize savings and investments.

To a great extent, the positive relationship between economic growth and capital accumulation has long been

affirmed in economic theories. In order to address the problem of economic downturn, effort must be geared towards

effective resource mobilization between the surplus sector (lender) and the deficit sector (borrower).

### Statement of the Problem

Most recent literatures on the Nigerian capital market have recognized the tremendous performance the market has recorded in the recent times. However, the vital role of the capital market in economic growth and development has not been empirically investigated thereby creating a research gap in this area. The Nigeria capital market impact at the macro-economy was negligible, the market is unable to effectively and efficiently discharge its fundamental role of mobilizing long-term funds for the economy. This study is under taken to examine the contributions of capital market in the Nigeria economic growth.

#### Objectives of the Study

The aim of this study is to examine the impact of capital market on Nigeria's economic growth. This broad objective can be further sub divided into the following objectives:

- i. Examine the impact of market capitalization on real gross domestic product (economic growth);
- ii. Determine the relationship that exist between value of transaction and economic growth; and
- iii. Investigate the extent to which listings in the capital market has impacted on economic growth in Nigeria.

#### Research Hypotheses

A statistical hypothesis is a qualitative assumption of statements, which may or may not be true concerning one or more parameters. The following hypotheses have been developed for this study:

- i.  $H_0$ : Market capitalization has no significant impact on the economic growth.
- ii.  $H_0$ : Value of transaction has no significant impact on the economic growth.

#### Theoretical Framework

The theoretical foundations upon which the study of capital market and economic growth in Nigeria 1980 - 2015 is based on the following: modern portfolio theory, capital asset pricing, and earning multiplier model.

#### Empirical Literature

The link between capital market and economic growth has been empirically investigated by researchers in both Nigeria and other countries. The capital market has been identified by researchers and policy makers as a primary determinant of economic growth of any country. This is established due to the vital role it plays in intermediation process in any country. [2] pointed out that stock market plays an essential function in allocating funds to the corporate sector, which has a real effect on the economic growth. [3] also see the Nigerian capital market as the necessary lubricant that keeps turning the wheel of the economy.

[4] examine the causal relationship between stock market development and economic growth in Canada and Australia using a time series data between the period 1983 Quarter 3 and 2012 Quarter 3 using the Granger Causality test suggested by granger (1969) in order to provide a powerful test to investigate the causality in various types of situation. The result suggested granger Causality relationship between stock market proxies and economic growth proxies in Canada with no strong evidences of causal relationship between stock market and economic growth in Australia. This study reveals an interesting situation that even when two markets are relatively similar in terms of capital market development and market stability, different causality results between stock market development and economic

growth might still be possible [5] empirically investigated the role of stock market in economic growth evidence from some euronext countries using a time series data compiled from five euronext countries (Belgium, France, Portugal, Netherland and United Kingdom) using granger Causality test to find the relationship between stock market and economic growth. The results suggested a positive relationship between stock market and economic growth for countries with more liquid and highly active stock market and economic relationship between countries with small and less liquid stock market.

[6] pointed out that market capitalization is a significant indicator and highly related to economic growth of Pakistan and also in Bangladesh but while the growth rate of Pakistan and also in Bangladesh but while the growth rate of Pakistan is influenced by market capitalization, Bangladesh growth rate is influenced by total stock value traded.

[7] investigated how stock market liquidity impact economic growth in South Africa using a time series data from 1995-2010 employing the ordinary least squares regression (OLS). The result shows a positive relationship between stock market liquidity and economic growth in South Africa.

[8] and [9] confirm that stock market can boost economic activity through the creation of liquidity. [10] investigated empirically the impact of the Nigeria capital market on her socio-economic development using the ordinary least square (OLS) estimation technique and reveals that about 77.22% of the systematic variation in the dependent variable is explained by the independent variables and also that the F-value is significant at the 5% level showing that there is a linear relationship between economic growth and capital market.

#### Research Design

Research design has to do with the development of the strategies for finding missing link which when discovered will

help in the solution identified problems. It is an integral plan or structure adopted by a researcher in collecting, analyzing and interpreting of data in order to arrive to conclusion that is scientifically proven.

#### Model Specification

The study will examine the impact of capital market on economic growth. The economic growth will be regressed on market capitalization, value of transactions, gross fixed capital formation, and interest rate. The data to be obtained will be fitted to the equation by Ordinary Least Square (OLS) regression method. The linear multiple regressions will be used for the regression analysis and inferences will be drawn based on the regression analysis.

[11] recommended that the first and most important step the econometrician has to take in attempting the study of any relationship between variables is to express this relationship in a mathematical form. Thus, given that:

$$GDP = f(MCAP, VOT, GFCF, INTR, LNSE)$$

Where

GDP=gross domestic product

MCAP=market capitalization

VOT=value of transaction

GFCF=gross fixed capital formation

INTR=interest rate

LNSE - listing on the Nigerian stock exchange

Accordingly, the econometric form of the model shall be:

$$GDP = \beta_1 + \beta_2 MCAP + \beta_3 VOT + \beta_4 GFCF + \beta_5 LNSE + \beta_6 INTR + U$$

#### Data Collection and Sources

This study will employ secondary data obtain from the Central Bank of Nigeria (CBN) Statistical Bulletin, Securities and Exchange Commission (SEC) Statistical Bulletin and the National Bureau of Statistics (NBS). The time series data will cover a period 1980 - 2015.

#### Estimation Techniques

The study adopted the econometric method of ordinary least square (OLS) and vector Error Correction modeling Approach. The Econometric software E-view 7.1 was used in running the model. The Augmented Dickey Fullier Test was

employed as a test of stationarity of the time series data, while the OLS was used to test for the long run equilibrium relationship among the variables in the model.

The ECM was used to adjust the pitfall in the short run analysis to long run equilibrium relationship.

#### DATA PRESENTATION, ANALYSIS AND DISCUSSION

This section is organized under the following headings:

Ordinary least square regression, Stationarity and unit root test, Cointegration test, Error correction model and Diagnostic test: Stability test.

#### Ordinary Least Square regression Result

Table1: OLS Regression result

Variables	Coeff.	T-stat.	Prob.
Constant (C)	9.92	40.47	0.00
Market Capitalizaion [LOG(MCAP)]	0.39	11.15	0.00
Value of Transactions [LOG(MCAP)]	-0.03	-1.47	0.15
Listing on the Nigerian Stock exchange[LOG(MCAP)]	-0.27	-10.40	0.00
Interest Rate [LOG(MCAP)]	0.20	3.24	0.00
<b>R<sup>2</sup> = 0.99   DW = 1.13   F-statistics = 0.00</b>			

**Source:** Author's computation using Eviews 9

The regression result presented in table1 shows an estimated regression line showing the relationship between growth (measured by the RGDP) and selected explanatory variables (including market capitalization, value of transactions, listing on the Nigerian stock exchange, and interest rate). The result of the estimated ordinary least square

#### Stationarity Tests

The results of the stationarity tests for all the variables are presented in table 2. The results indicate that all the variables (i.e real gross domestic product, market capitalization, value of transactions, listing on the Nigerian stock exchange,

regression model is interpreted as follows:

Coefficient of Determination (R<sup>2</sup>) Statistics From table 1, the coefficient of determination was approximated into 0.99. The coefficient of determination shows that 99% variation in economic growth is accounted for by the explanatory variables in the model.

and interest rate) are stationary when differenced one. This shown as all the variables are integrated of order one [1].

Table 2: Augmented Dick-Fuller (ADF) test results

Variables	Coeff.	T-stat.	Prob.
Real Gross Domestic Product (RGDP)	-3.60	-3.55	I(1)
Market Capitalization [LOG(MCAP)]	-4.34	-3.55	I(1)
Value of Transactions [LOG(MCAP)]	-5.22	-3.55	I(1)
Listing on the Nigerian Stock exchange [LOG(MCAP)]	-4.74	-3.58	I(1)
Interest Rate [LOG(MCAP)]	-5.97	-3.56	I(1)

**Source:** Author's computation using Eviews 9

#### Cointegration Test

The Julius-Johansen cointegration test result presented in table 3 below shows that the hypothesis of no cointegration, H<sub>0</sub>, among the variables can be rejected. The result revealed the existence of three cointegrating vectors. The existence on cointegrating vectors therefore confirms the existence of non relationship among the variables.

Table 3: Cointegration test results

Trace Test k=2				Maximum Eigen value test k=2			
H <sub>0</sub>	H <sub>A</sub>	( $\lambda$ Trace)	5% Critical Value	H <sub>0</sub>	H <sub>A</sub>	( $\lambda$ Max)	5% Critical Value
r≤0	r>0	129.64*	69.82	r≤0	r>0	60.98*	33.88
r≤1	r>1	68.66*	47.86	r≤1	r>1	33.92*	27.58
r≤2	r>2	34.74*	29.80	r≤2	r>2	21.16*	21.13
r≤3	r>3	13.58	15.49	r≤3	r>3	6.77	14.27
r≤4	r>4	3.81	3.84	r≤4	r>4	3.18	3.84

**Source**

: Author's computation using Eviews 9

Coefficient of Determination (R<sup>2</sup>) Statistics Tables 4: shows that the coefficient of determination statistics for the estimated error correction mechanism model is 0.63. This implies that 63% of the variation in economic growth is explained

by the explanatory variables. The remaining 37% is regarded as the unexplained variation. Moreover, the remaining 37% variation in economic growth is explained by other variables not included in the model.

Table 4: Parsimonious Error Correction Model Result

Variables	Coefficients	t-Statistics	Probability
C	-0.03	-1.60	0.13
DLONG(RGDP(-1))	0.60	3.77	0.00
DLONG(RGDP(-2))	0.45	2.70	0.01
DLONG(MCAP(-1))	0.02	1.01	0.33
DLONG(MCAP(-2))	-0.04	-1.61	0.12
DLONG(VOT(-1))	0.02	1.29	0.21
DLONG(VOT(-2))	00.04	2.82	0.01
DLONG(LNSE)	0.04	2.22	0.04
DLONG(INT)	0.08	2.61	0.02
ECM(-1)	-0.28	-2.86	0.01

**R<sup>2</sup> = 0.63 | DW = 1.9 | F-stat = 3.81 | prob. F-stat = 0.01**

**Source:** Author's computation using Eviews 9

The interpretation of the relationship between the regressors and the regressand as presented in Table 4.4 above is as follows:

(a) Impact of Lagged Gross Domestic Product on GDP for a Fiscal Year.

The elasticity coefficient of the one period lag RGDP [i.e. DLOG(RGDP(-1))] is 0.60. This result implies that a unit increase in the one period lag GDP led to 60% increase in the RGDP for a fiscal year. Additionally, the t- statistics and its probability value of 3.77 and 0.00 respectively shows that one period lag GDP significantly influenced RGDP for a fiscal year at 1% level.

Secondly, the elasticity coefficient of the two period lag RGDP [i.e. DLOG(RGDP(-2))]

is 0.45. A unit increase in the two period lag GDP led to 45% increase in the RGDP for a fiscal year. The significance of the two period lag GDP was also confirmed as the t- statistics and its probability value of 2.70 and 0.01 respectively proved two period lag RGDP significantly influenced RGDP for a fiscal year at 5%.

(b) Impact of Market Capitalization (MCAP) on RGDP

The elasticity coefficient of the one period lag MCAP [i.e. DLOG(MCAP(-1))] is 0.02. This result implies that a unit increase in one period lag MCAP led to 2% increase in the RGDP. Additionally, the t- statistics and its probability value of 1.01 and 0.33 respectively shows that one

period lag MCAP has no significant influence on RGDP at 1%, 5%, and 10% level.

Secondly, the elasticity coefficient of the two period lag MCAP [i.e.  $DLOG(MCAP(-2))$ ] is - 0.04. This result implies that a unit increase in two period lag MCAP led to 4% decrease in the RGDP. Additionally, the t-statistics and its probability value of 1.61 and 0.12 respectively shows that two period lag MCAP has no significant influence on RGDP at 1%, 5%, and 10% level.

#### (c) Impact of Value of Transactions (VOT) on RGDP

The elasticity coefficient of the one period lag VOT [i.e.  $DLOG(VOT(-1))$ ] is 0.02. This result implies that a unit increase in one period lag VOT led to 2% increase in the RGDP. Additionally, the t-statistics and its probability value of 1.29 and 0.21 respectively shows that one period lag VOT has no significant impact on RGDP at 1%, 5%, and 10% level.

Secondly, the elasticity coefficient of the two period lag VOT [i.e.  $DLOG(VOT(-2))$ ] is 0.04. This result implies that a unit increase in two period lag VOT led to 4% increase in the RGDP. Additionally, the t-statistics and its probability value of 2.82 and 0.04 respectively shows that two period lag VOT significantly influenced RGDP at 5% level.

#### (d) Impact of Listings on the Nigerian Stock Exchange (LNSE) on RGDP

The elasticity coefficient of LNSE [i.e.  $DLOG(LNSE)$ ] is 0.04. This result implies that a unit increase in LNSE led to 4% increase in the RGDP. Additionally, the t-statistics and its probability value of 2.22 and 0.04 respectively shows LNSE significantly influenced RGDP at 5% level.

#### (d) Impact of Interest Rate (INT) on RGDP

The elasticity coefficient of INT [i.e.  $DLOG(INT)$ ] is 0.08. This result implies

that a unit increase in INT led to 8% increase in the RGDP. Additionally, the t-statistics and its probability value of 2.61 and 0.02 respectively shows INT significantly influenced RGDP at 5% level.

#### Residual [ECM(-1)]

The residual appeared with the apriori negative sign. The negative sign on the ECM coefficient implies that the model adjusted from the short run disequilibrium to long run equilibrium. Furthermore, the value of the coefficient (i.e. 0.28) shows that model adjusted from the short run disequilibrium to long run equilibrium at a speed of 28%.

#### (f) F-statistics

The probability of the F-stat is given as 0.01. The result implies the linear combination of the explanatory variables in explaining the dependent variable is significant at 5% level.

#### Summary of Findings

The OLS result showed the relationship between capital market indicator and economic growth. The interpretation of OLS result gave evidence of some findings. From the analysis and interpretation done in section four we found that;

- i. Market capitalization has a positive and significant influence on economic growth.
- ii. Value of transactions has a negative but insignificant influence on economic growth.
- iii. Listing on the Nigerian stock exchange has a negative impact on economic growth; and
- iv. Interest rate has a positive and significant impact on economic growth.

#### CONCLUSION

The findings from the study show that not all capital market indicators have the ability to boost growth in the Nigerian economy. Hence, the study among others, concludes that only some capital market indicators are potent predictors of

economic growth in Nigeria during the period considered in this study. This study also concludes that market capitalization contributed positively to growth and significant increase in economic growth in Nigeria between 1981

and 2015. Furthermore, listing in the Nigerian stock exchange also proved to contribute both significantly but negatively to economic growth in Nigeria during the period reviewed. The role

played by listings in the Nigerian stock exchange far outweighs that played by value of transaction in terms of contribution to economic growth between 1980 and 2015.

#### RECOMMENDATIONS

**Expansionary capitalization policy:** An expansionary market capitalization policy that has the ability and potentials to boost the capital base of the capital market must be designed and implemented. A steady increase in market capitalization in the capital market will go a long way to increase access to capital and growth in national output.

**Contractionary listing policy:** A contractionary listing policy that has the ability and potentials to reduce the fall in economic growth necessitated by the number of listed companies in the capital market.

#### Recommendation for Future Studies

- i. This study examined the effect of some selected capital market

indicator on economic growth without reference to any policy period in particular as the duration of the study did not signify any. It is therefore recommended that future study should examine the effect of the selected capital market indicators under specific policy like the pre-SAP and SAP period.

- ii. It would also be important to compare the impact of capital market on key sectors of the economy. Hence, this study recommends that future study should examine the relative impact of the capital market on manufacturing and mining sectors.

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