

## **Capital Market Development and Economic Growth: Evidence from Nigeria**

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**ABSTRACT :** *This paper examines the link between capital market development and economic growth in Nigeria. Applying co-integration and error correction modelling to stock market and Macroeconomic time series data, we find evidence that the variables; All share Index, No of deals and market capitalization have individual positive and significant combined impact on economic growth. Inflation, however, has positive but insignificant effect on economic growth. The pair-wise granger causality test shows that there exists a unidirectional causality running from capital market to economic development and feedback causality between market capitalization and economic growth thus validating the endogenous growth theory. Appropriate recommendations are made for the stakeholders in the capital market based on the findings of the study.*

**KEY WORDS :** *Capital market, Economic development, Nigerian stock exchange*

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### **I. INTRODUCTION**

The growth and development of the capital market in Nigerian can be traced to 1946 with the floating of N600,000 (more than 300,000 pounds sterling) worth of government stocks. However, an organized market for the secondary trading of issued stocks was lacking. In 1959, following the establishment of the Central Bank of Nigeria (CBN) a year earlier, a N4 million (2 million pounds sterling) (Federal Government of Nigeria development loan stock was issued in line with its role of fostering economic and financial development. In 1986, Nigeria embraced the International Monetary Fund (IMF) Structural Adjustment Programme (SAP) which influenced the economic policies of the Nigerian government and led to reforms in the late 1980s and early 1990s. The programme was proposed as an economic package to rapidly and effectively transform the Nigeria economy within two years (Yesufu, 1996). However, until SAP was abandoned in 1994, the objectives were not achieved due to the inability of the government to operate the mechanisms. The notable reforms include monetary and fiscal policies, sectoral reforms such as removal of oil subsidy in 1988 to the tune of 80%, interest deregulation from August 1987, financial market reform and public sector reform which entails the full or partial privatization and commercialization of about 111 public owned enterprises. The Nigerian stock exchange was to play a key role during the offer for sale of the shares of the affected enterprises (World Bank, 1994; Anyanwu et al, 1997). The introduction of SAP in Nigeria resulted in significant growth of the financial sector and the privatization exercise which exposed investors and companies to the significance of the stock market (Alile, 1996; Soyode, 1990). The liberalization of capital market led tremendous changes with respect to volume, number of deals and value of securities traded as well as the number of securities listed in the market, yet there are concerns on its impact at the macro-economic level. Again the capital market was instrumental to the initial twenty-five Banks that were able to meet the minimum capital requirement of N25billion during the banking sector consolidation in 2005. The stock market has helped government and corporate entities to raise long term capital for financing new projects, and expanding and modernizing industrial/commercial concerns.

Given the roles the capital market has played during the privatization of public owned enterprises, recent recapitalization of the banking sector and avenue of long term funds to various governments and companies in Nigeria, the objectives of this study therefore are to use econometric techniques :

- To evaluate the impact of capital market on the economic development of Nigeria
- To determine the direction of causality between capital market development and economic growth

This study is justified on the ground that the Nigerian stock market which witnessed a boom between 2003 and 2007, also experienced a meltdown between 2008 and 2010, as market capitalization declined from over N13trillion in 2007 to N5.3 trillion in 2010 (see appendix 1) . The all-share index has also fallen from 57,990.22 points to approximately 20,827.17 points in the same period. Moreover, the confidence of shareholders and investors seems to be eroding. Thus, it is expected that this study would complement the

efforts of government and policy makers in reviving the Nigeria stock market and restoring the confidence of shareholders and other participants in the market. In addition, it is believed that a vibrant and well developed stock market would attract foreign investors and enhance the attainment of higher economic growth

## II. LITERATURE REVIEW

The literature on stock market and economic development has taken on a new lease of life over the past decades. A second generation of more complex financial growth models has emerged that incorporate both the endogenous growth and endogenous financial institutions. Among the earlier contributors to the work are Edward Prescott (1986), Douglas Diamond (1984), Diamond and Philip Dybvig (1983), Robert Lucas (1988), and Paul Romer (1986, 1990). Second generation financial growth models include, among others Jeremy Greenwood and Boyan Jovanovic (1990), Greenwood and Smith (1993), Robert King and Ross Levine (1993). Levine (1993), Marco Pagano (1993) and Oren Sussman (1993). All these financial development models using endogenous growth ignore the dynamics process of financial liberalization or stabilization (Fry (1995). All potential investors bidding for funds will do this to the point where their marginal expected returns equal the marginal cost of borrowing as all investments would yield the same marginal expected rate of returns. Hence the allocation of invisible funds would be optimal because no re-allocation of funds between actual or potential investment projects could increase total income, ie allocation is Pareto efficient. Greenwood and Smith (1993) show that the existence of a stock market increases the growth rate in comparison to a situation with no financial intermediation. This is because stock market can prevent premature capital liquidation by enabling individual investor to sell firms that they will be unable to operate. Levine (1991) and Saint-Paul (1992) demonstrate that stock markets can also encourage a higher proportion of productive investment by enabling individuals to diversify away idiosyncratic risk of individual projects, so encouraging capital ownership and investment in firms.

Stock markets enable individuals to sell shares to others who are holding unnecessarily large amount of currency. So within some bounds therefore, shares can be traded without any removal of physical resources from firms. However, each financial transaction incurs a fixed cost. If this fixed transaction cost is too high, no one will use the stock market and the economy returns to financial autarky. Thus, public policies that raise transaction costs could inhibit the functioning of capital market (Levine, 1993). Individuals can also use the stock markets directly to diversify, but financial institutions can reduce the transaction cost of this. Reduced liquidity and productivity risks encourage individuals to invest more in firms. In various ways, therefore, financial institutions can encourage individuals to invest more resources either directly or indirectly, in firms. More investment in firms raises the rate of economic growth (Fry, 1995). One main feature of endogenous growth model is that a broadly defined concepts of the economy's capital stock does not suffer from diminishing returns; hence growth is a positive function of the investment ratio. If the concept of capital is broadened to include human capital and the state of knowledge, average stock per entrepreneur that can eliminate diminishing returns in the economy as a whole can then be represented by equation 1 below:

$$Y_t = k_t - \lambda k_t \theta \quad (1)$$

Where  $k_t$  is average capital stock per entrepreneur and is responsible for the externality effect that enables endogenous growth (Bencivenga and Smith, 1991). For the economy as a whole, the production function can be expressed:

$$Y = Ak \quad (2)$$

Where  $y$  is per capita output,  $k$  is per capita capital and  $A$  is the level of technology. With this production function, steady-state growth  $\tau$  in a closed economy equals:

$$\tau = sA - \delta \quad (3)$$

where  $s$  is the savings ratio,  $\delta$  is the rate of capital depreciation. Here an increase in the savings-investment ratio raises the rate of economic growth.

From the above, it is internal factors rather than external factors that determine the growth success of an economy. Factors in the endogenous growth models include: level of development of the capital market, economic stability, efficiency of infrastructural services (e.g energy), functional democratic institutions, economic policies, appropriate technology, education and manpower development

### 2.1 Historical Development of The Nigerian Capital Market

The activities and trading in this market is managed by the Nigerian Stock Exchange (NSE) which evolved in 1977 from the Lagos Stock Exchange, established in June 5, 1961. As at end 2009, there were ten trading floors of the NSE in Lagos, which serves as the head office of the exchange, Enugu, Ibadan, Onitsha, Kaduna, Kano, Port Harcourt, Yola, Benin and Abuja. Each branch has a trading floor, which creates

opportunities for buying and selling of securities. Other than these, there are institutions such as the Securities and Exchange Commission (SEC), which is the regulatory authorities and was established in 1979, issuing houses, Investment Advisers,

Portfolio Managers, Investment and Securities Tribunal (IST), the stock broking firms, registrars and other operators. The interactions among these players influence the width and depth of the market. Prior to 1980s, trading in the market was weak, attributable mainly to low level of information dissemination and awareness. However, with the level of computerization and availability of corporate information, the market becomes more efficient with major indicators reflecting remarkable growth. Since the 1980s, most of the market indicators including all-share value index, number of deals, market capitalization, total value of shares traded and turnover ratio have recorded significant increases. The improvements could be attributed to the establishment of the Second-tier Securities Market (SSM) in 1985; the deregulation of interest rates in 1987, the privatization programme of government owned companies, enhancement in market infrastructure and requirements, innovations; as well as the banking sector reform. These developments have culminated in unprecedented growth of both the primary and secondary markets (Ozurumba and Chigbu, 2013). Some of the major securities traded on the exchange during the period under review included, government development stocks, industrial loans/preference shares and equities. From 100.00 in 1984, the all-share value index on the exchange rose to 57,990.22 in 2007, but declined by -64.1 per cent to 20,827.17 in 2009 as some quoted banks were involved in merger/acquisitions in the recapitalization exercise in the banking sector, while those that were unsuccessful were de-listed from the exchange. The impact of the global financial crisis also affected the exchange performance. In the same vein, the number of deals increased from 10,199 in 1981 to peak at 49,029 in 1992, before falling to 40,398 in 1993. It later rose significantly to 3,535,631 in 2008, and declined by -50.8 per cent to 1,739,365 in 2009. The growth in the market also manifested in the phenomenal increase in market capitalization, from N5.0 billion to N7,030.8 billion in 2009, over ten-fold jump. The phenomenal growth notwithstanding, the market capitalization represents only 28.0 per cent of the GDP, compared with 167.1 per cent for South Africa, 50.7 per cent for Zimbabwe and 130.0 per cent for Malaysia, (CBN, 2007). This shows that the potentials and prospects for growth in the Nigerian market are bright. The growth and development of the capital market in Nigeria can be traced to 1946 with the floating of N600,000 (more than 300,000 pounds sterling) worth of government stocks. However, an organized market for the secondary trading of issued stocks was lacking. In 1959, following the establishment of the Central Bank of Nigeria (CBN) a year earlier, a N4 million (2 million pounds sterling). Federal government of Nigeria development loan stock was issued in line with its role of fostering economic and financial development. The stock market has helped government and corporate entities to raise long term capital for financing new projects, and expanding and modernizing industrial/commercial concerns (Nwankwo, 1991).

## **2.2 Linkage Between Capital Market And Economic Development**

Attempts have been made by several scholars to link the growth of the capital market with the economy: Levine (1991) argued that developed stock market reduces both liquidity shock and productivity shock of businessmen to investment funds as well as enhancing the production capacity of the economy, thereby leading to higher economic growth. This view was supported by King and Levine (1993) that financial development fosters economic growth. Moreover, Bensivenga et al (1996) concluded that well developed financial market (stock market) induces long run economic growth. Levine and Zervos (1996) examines whether there is a strong empirical association between stock market development and long-run economic growth. The study used pooled cross-country time-series regression of forty-one countries from 1976 to 1993 to evaluate this association. The study toed the line of Demirgüç-Kunt and Levine (1996) by conglomerating measures such as stock market size, liquidity, and integration of the world markets into index of stock market development. The growth rate of Gross Domestic Product (GDP) per capita was regressed on a variety of variables designed to control for initial conditions, political stability, investment in human capital, and macroeconomic conditions; and then include the conglomerated index of stock market development. The finding was that a strong correlation between overall stock market development and long-run economic growth exist. This means that the result is consistent with the theories that imply a positive relationship between stock market development and economic growth. Pedro and Erwan (2004) asserted that financial market development raises output by increasing the capital used in production and by ensuring that capital is put into best uses. Ogwumike and Omole (1996), Ojo (1998), Abdullahi (2005); Adam and Sanni (2005) also stressed the importance of capital market in economic development in Nigeria. Agarwal (2001) argued that financial sector development facilitates capital market development, and in turn raises real growth of the economy. Thornton (1995), Rousseau and Sylla (2001); Calderon and Liu (2002) supported that financial system development promotes economic growth. In the same vein, Beckaert et al demonstrated that capital market development increases

economic growth. Similarly, Bolbo et al (2005) indicated that capital market development has contributed to the economic growth of Egypt. Tharawanji (2007) observed that countries with deeper capital market face less severe business cycle output contraction and lower chances of an economic downturn compared to those with less developed capital market. On their part, Ben and Ghazouani (2007) reported that financial system development could have adverse effect on economic growth in a sample of 11 countries they studied, and therefore advocated for a vibrant financial sector. Osinubi and Amaghionyeodiwe (2003) also examined the relationship between Nigeria stock market and economic growth during the period 1980 – 2000 using Ordinary Least Squares regression (OLS). The result indicated that there is a positive relationship between the stock market and economic growth and suggest the pursuit of policies geared towards rapid development of the stock market. The methodology is however, flawed on the ground that the time series properties of the data are not taken care of.

Obamiro (2005) investigated the role of the Nigeria stock market in economic growth and found a significant positive effect of stock market on economic growth. He suggested that government should create more enabling environment so as to increase the efficiency of the stock market to attain higher economic growth. Ezeoha et al (2009) investigated the nature of the relationship that exists between stock market development and the level of investment (domestic private investment and foreign private investment) flows in Nigeria. The authors discovered that stock market development promotes domestic private investment flows thus suggesting the enhancement of the economy's production capacity as well as promotion of the growth of national output. However, the results shows that stock market development has not been able to encourage the flow of foreign private investment in Nigeria.

Efforts were also made by Nyong (1997) to develop an aggregate index of capital market development and use it to determine its relationship with long run economic growth in Nigeria. The study employed a time series data from 1970 to 1994. Four measures of capital market development, the ratio of market capitalization to GDP (in percentage), the ratio of total value of transactions on the main stock exchange to GDP (in percentage), the value of equities transaction relative to GDP and listings were used. The four measures were combined into one overall composite index of capital market development using principal component analysis. A measure of financial market depth (which is the ratio of broad money to stock of money to GDP) was also included as control variable.

The result of the study was that capital market development is negatively and significantly correlated with long run growth in Nigeria. Ted et al (2005) examine the empirical association between stock market development and economic growth in India. Whereas the authors found supports for the relevance of stock market development to economic development during pre-liberation, they discovered a negative relationship between stock market development and economic development for the post liberalization period. Ewah et al (2009) appraised the impact of capital market efficiency on economic growth in Nigeria, using time series data on market capitalization, money supply, interest rate, total market transaction, and government development stock between 1961-2004 using multiple regression and ordinary least squares estimation techniques.

The result of the study shows that the capital market in Nigeria has the potential to induce growth, but it has not contributed meaningfully to the economic growth of Nigeria because of low market capitalization, low absorptive capacity, illiquidity, misappropriation of funds among others.

### **2.3 Direction of Causality**

The World Bank (1994) found that stock market development does not merely follow economic development, but provides the means to predict future rates of growth in capital, productivity and per capital GDP. The conclusion of the bank is that, increase in banking and stock market development leads to increased real per capital growth. Hamid and Sumit (1998) examined the relationship between stock market development and economic growth for 21 emerging markets over 21 years, using a dynamic panel method. Their results indicated a positive relationship between several indicators of stock market performance and economic growth both directly and indirectly by boosting private investment behaviour. In Belgium, Nieuwer et al (2005) investigated the long term relationship between economic growth and financial market development. The authors used a new set of stock market development indicators to argue that financial market development substantially affects economic growth. They found strong evidence that stock development leads to economic growth in Belgium especially in the period between 1973 and 1993. Chee et al (2003) indicated that stock market development has a significant positive impact on economic growth in Malaysia. The authors also reported that

stock market development Granger-causes economic growth. The study by Muhammed et al (2008) suggested that there is a long run relationship between stock market development and economic growth. Liu and Hsu (2006) reported a positive impact on economic growth of stock market development in Taiwan, Korea and Japan. The work of Francia et al (2007) showed that shareholders protection causes stock market development and eventually economic growth. Some authors focus on the causal relationship between stock market development and economic growth for example; Gursoy and Muslumov (1999) confirmed the existence of bidirectional causal relationship between stock market development and economic growth. Their study also revealed a stronger association between stock market development and economic growth in developing countries. Following Gursoy and Muslumov (1999), authors like Luintel and Khan (1999) and Hondroyannis et al (2005) also reported a bi-directional causality between stock market development and economic growth. In Nigeria, Adam and Sanni (2005) examined the roles of stock market on Nigeria's economic growth using Granger-causality test and regression analysis. They discovered a one-way causality between GDP growth and market capitalization and a two-way causality between GDP growth and market turnover. They also observed a positive and significant relationship between GDP growth turnover ratios. The authors advised that government should encourage the development of the capital market since it has a positive effect on economic growth.

### III. METHODOLOGY

Towards achieving the objective of this paper, we apply co-integration and error correction modelling to capital market (stock exchange) and macroeconomic data from 1981 – 2011 (i.e. 30 years). The study employs secondary data obtained from the Central Bank of Nigeria (CBN) statistical bulleting, Nigerian Stock Exchange fact book, Securities and Exchange Commission data base and from relevant literatures (books, journals and electronic sites). The variables used which are real values include real Gross Domestic product (GDP), the indicator of economic growth; indicators of capital market development are proxied by market capitalization (MCAP), All Share Value Index (ASI) and Number of Deals (ND).

#### 3.1 Model Specification

On the basis of our theoretical exposition and in particular following Ozurumba and Chigbu (2013), with a little modification (for interest rate variable) and the inclusion of number of deals, the model for this study is specified as follows

$$\text{Economic growth} = f(\text{Capital Market}) \text{-----equation 3.1}$$

Where Capital Market is the independent variable and Economic growth is the dependent variable. The variable for which economic growth was measured was the Gross Domestic Product (GDP), while the variable for which the capital market was proxied are market capitalization (MCAP), All Share Value Index (ASI), the Number of Deals (ND) and also inflation (INF).

In specific terms, the model is given below.

$$\text{GDP} = f(\text{MCAP}, \text{ASI}, \text{ND}, \text{INF}) \text{-----equation 3.2}$$

$$\text{GDP} = \alpha_0 + \alpha_1\text{MCAP} + \alpha_2\text{ASI} + \alpha_3\text{ND} + \alpha_4\text{INF} + \alpha_i \text{-----equation 3.3}$$

$$d\text{GDP} = \alpha_0 + \alpha_1d\text{CAP} + \alpha_2d\text{ASI} + \alpha_3d\text{ND} + \alpha_4d\text{INF} + \alpha_i \text{-----equation 3.4}$$

Where d = difference operator

If the unit root test shows evidence of co-integration, then equation 4 will be transformed to an error correction model ECM thus:

$$d\text{GDP} = \alpha_0 + \alpha_1d\text{MCAP} + \alpha_2d\text{ASI} + \alpha_3d\text{ND} + \alpha_4d\text{INF} + \delta\text{ECM}(-1) + \alpha_i \text{---equation 5}$$

Where  $\delta$  = the coefficient of ECM which indicates the speed of adjustment from short-run disequilibrium to long-run equilibrium.

Where:

GDP = Gross Domestic Product

MCAP= Market Capitalization

ASI = All Share Index

ND = Number of deals

INF = Inflation

$\alpha_i$  = The error term

Inflation is used in this model as control variable used to control for omitted variable bias.

It is expected that all the explanatory variables except inflation will have a direct relationship with the dependent variable. That is a unit increase in any of these variable will lead to an increase in the dependent variable. But an

increase in INF will enhance GDP decrease. i.e.  $\alpha_1, \alpha_2, \alpha_3 > 0$  while  $\alpha_4 < 0$  In determining the nature of the relationship between the independent variable (Capital Market) and the dependent variable (Economic growth), we employ the use of co-integration and error correction techniques. This would help in ascertaining the nature of the relationship i.e. whether it is positive or negative and to also determine if the capital market has significant effect on the economic growth of Nigeria as stated in our objectives. Our tool of analysis/estimation is the econometric software E Views 7 developed by Quantitative Micro Software.

#### IV. DATA ANALYSIS AND PRESENTATION

The data obtained is analysed with the use of E-views 7 software.

##### 4.1 Descriptive Statistics

The summary of the distribution is presented in table 4.1:

As shown in table 4.1, the maximum values for ASI, MCAP and ND correspond to the beginning of the crash of the Nigerian stock market when the trickle- down effect of the global economic crisis triggered by the USA real estate bubble-burst began to manifest. The lowest values correspond to the stage of infancy of the stock market. Kurtosis which measures the peak and flatness of the distribution is leptokurtic relative to its normal distribution since their kurtosis values are greater than 3 for all share index (ASI), gross domestic product (GDP), stock market capitalisation (MCAP), and number of deals (ND). However, inflation rate is mesokurtic since the kurtosis value is equal to 3. Skewness which measures the shape of the distribution shows that all the stock market variables used (ie ASI, GDP, INF, MCAP and ND ) have values greater than 1 which suggests the distribution tails to the right of the mean. Jarque-Bera is a statistical test that determines whether the series is normally distributed. The null hypothesis here is that the series is normally distributed (i.e. skewness=0) so as to be consistent with skewness test. The Jarque-Bera statistics here rejects the null hypothesis for all our stock market variables ( ASI, GDP, INF, MCAP and ND) since their probability values are less than 0.05. We therefore conclude that all our stock market variables are normally distributed during the period 1981-2011.

##### 4.2 Unit Root Test.

In the literature, most time series variables are non-stationary and using non-stationary variables in the model might lead to spurious regressions. The first or second difference term of most variables will usually be stationary. Following Engle and Granger (1987) procedure, we start with the testing for the order of properties of the variables of interest, the Augmented Dickey-Fuller (ADF). Adopting the simple economic relationship of random walk with drift, the results of the unit root tests are reported in table 4.2. The decision rule is that the ADF test statistic value must be greater than the Mackinnon critical value at 1 % or 5% and at absolute value. From the above analysis, it can be seen that GDP and MCAP are stationary at level, while INF and ND are stationary at first difference. For INF, at 1% of Mckinnon critical value and for ND, at 5% critical value. ASI, is still not stationary. From the above results, the Co-integration test would be pertinent because the variables exhibit two different level of stationarity i.e. at level and at first difference or even if it's at the first difference alone, the co-integration test would still be necessarily carried out.

##### 4.3. Co-integration Test and Regression Tests

###### 4.3.1 Co-Integration Test

The essence of co-integration test is to ascertain if a long-run equilibrium relationship exist among variables of the model. The test was carried out using the Engel and Granger (1987) residual co-integration method. The reason behind this is because all the variables are not integrated at first order. If they were all integrated at first order then, the Johansen-Juleus test would be appropriate. The results show that there is a long run co-integration relationship among all the variables at 5% level; t-he ADF being -4.1351 and the Mckinnon critical value at -3.645.

###### 4.3.2 Estimation of the Regression Equation

The next process would be the estimation of regression equation using the first level difference and the Over-parameterized error correction model (ECM).

d(gdp) c d(gdp(-1)) asi d(asi) d(asi(-1)) inf d(inf) d(inf(-1)) mcap d(mcap) d(mcap(-1)) nd d(nd) d(nd(-1))

##### Estimated Equation:

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$$\text{DGDP} = -2.13656 + 107.4464 \cdot \text{ASI} + 3890.803 \cdot \text{INF} - 1305.778 \cdot \text{MCAP} + 1141.130 \cdot \text{DMCAP} + 4.217701 \cdot \text{ND} - 3.907396 \cdot \text{DND}(-1) - 4.143759 \cdot \text{D}(\text{ND}(-1))$$

In order to have a parsimonious model, the insignificant variables have to be removed. (See table 4.6)

#### 4.4 Granger Causality Test

Following from objective two, the direction of causality between economic development and capital market was tested using the pair wise Granger causality test. The result is presented in Table 4.5 below.

From our test result (table 4.7), there are two possibilities namely:

- i) A Unidirectional causality from capital market (ASI) to economic development DGP when the coefficient of ASI is statistically significant.
- ii) A feedback or bi-directional causality when the sets of MCAP and GDP coefficients are statistically significant.

This result validates the endogenous growth theory that suggests that internal factors like the extent of performance of the capital market etc will determine the growth of the economy and vice versa.

#### 4.5 Test for Multicollinearity

Multicollinearity test is carried out here to test the assumption that no independent variable is a linear function of one or more independent variables. We make use of the correlation matrix table to carry out the test. According to Gujarati (2003), if the pair-wise correlation coefficient between two explanatory variables is in excess of 0.95, then multicollinearity is a serious problem.

The result of the multicollinearity is shown in table 4.8:

#### 4.6 Discussion of results

The t-statistics for all the variables suggest significance except INF. This shows that ASI, MCAP and ND are all relevant in determining economic growth. In terms of the fitness of the model, the coefficient of multiple determination  $R^2$  indicates that about 97.03% (adjusted  $R^2 = 95.55\%$ ) of the variations in GDP are explained by the combined influence of the all share value, market capitalization, number of deals and to a lesser extent inflation in the model and this is very good for our model. The Durbin Watson statistic measures the serial correlation of the variables. The result of the Durbin Watson test shows 2.3, an indication that there is no autocorrelation among the successive values of the variables in the model. Considering the a priori expectation, the overall significance of the regression is tested using Fisher's statistics. In this study the calculated  $F^*$  value of 65.40 is significant at 1%. The F statistic test which helps in determining the significance of the explanatory variables in explaining a model is of high level of significance. At 1% level of significance, the F calculated (65.40) is greater than F statistic tabulated which gives 1.92. Thus, since F calculated is  $>$  F tabulated, the model is good in explaining the research work in question. It is therefore, concluded that linear relationship exist between the dependent and independent variables of the model. Based on this finding, the postulations which respectively state that "Capital market has a significant effect on economic growth in Nigeria should be accepted while the null hypotheses which state that "Capital market does not have any significant effect on economic growth in Nigeria" is hereby rejected. The evidence established that the independent explanatory variables have individual and combined impact on the Gross Domestic Product (GDP).

Conclusion and Recommendation

### V. CONCLUSION

Based on the results of the study, the following conclusions are arrived at:

- The all share index (ASI) has positive and significant impact on gross domestic product in Nigeria
- Number of deals has positive and significant impact on gross domestic product in Nigeria
- Inflation has positive but insignificant effect on economic development.
- The pair-wise Granger causality test shows that there is a unidirectional causality running from capital market (ASI) to economic development and a feedback or bi-directional causality between the MCAP and economic growth. The result thus validates the endogenous growth theory that suggests that internal factors like the extent of performance of the capital market etc will determine the growth of the economy and vice versa.

### **5.3 Recommendation**

The following recommendations are made based on the outcome of this study:

- [1] Creation of awareness by government and organised private sector on the relevance and inherent benefits of investing in the capital market. This would boost the number of deals.
- [2] Also, more private limited liability companies and informal operators should be encouraged to access the capital market for fresh capital.
- [3] Finally, all impediments to trade such as high transaction costs should be reviewed to encourage more active trading in the market.
- [4] Government to pursue economic growth by creating conducive environment for businesses to thrive.

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## APPENDIX 1

Table 4.1

**DESCRIPTIVE STATISTICS ON  
NIGERIAN CAPITAL MARKET (1981-2011)**

	ASI	GDP	INF	MCAP	ND
Mean	12,250.84	8,115,178.00	22.26	1,982.03	722,187.80
Median	6,056.60	2,755,202.00	12.90	283.85	81,512.00
Maximum	57,990.22	37,543,655.00	72.90	13,294.60	4,021,780.00
Minimum	100.00	59,622.53	4.70	5.50	17,444.00
Std. Dev.	14,628.86	10,955,972.00	20.00	3,379.71	1,123,718.00
Skewness	1.36	1.40	1.19	1.96	1.71
Kurtosis	4.41	3.81	2.99	6.16	4.88
Jarque-Bera	10.90	9.95	6.61	29.65	17.75
Probability	0.00	0.01	0.04	0.00	0.00
Sum	343023.7	2.27E+08	623.22	55496.74	20221257
Sum Sq. Dev.	5.78E+09	3.24E+15	10796.32	3.08E+08	3.41E+13
Observations	28	28	28	28	28

Source: Author's compilation from E-views analysis

Table 4.2. Unit Root Test using the Augmented Dickey – Fuller (ADF). 1981 – 2011

Variable	ADF Statistics		ADF Statistics	
	Level	Critical values	1 <sup>st</sup> Difference	Critical Values
GDP	3.716 Remarks: stationery at 5%	1% - 4.416 5% - 3.622 10% - 3.2486		
ASI	-2.7646 Remarks: not stationery	1% - 4.4679 5% - 3.6450 10% - 3.2615	-2.514 Remark: not stationery	1% - 4.498 5% - 3.658 10% - 3.2689
INF	- 1.85 Remarks: Not stationary @5%	1% - 2.644 5% - 1.952 10% - 1.61	-5.8496 Remarks: stationary	1% - 2.650 5% - 1.933 10% - 1.6098
MCAP	2.5989 Remarks: stationary at 5%	1% - 2.6649 5% - 1.9557 10% - 1.6088		
ND	-0.9169 : Not stationary @ 5%	1% - 2.6649 5% - 1.9557 10% - 1.6088	-2.5028 Remarks: stationary at 5%	1% - 2.674 5% - 1.957 10% - 1.608

Source: Author's compilation using E-views 7.

**Table 4.3**

Residual cointegration test

Null Hypothesis: RESID01 has a unit root  
 Exogenous: Constant, Linear Trend  
 Lag Length: 0 (Automatic - based on SIC, max lag=4)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.135055	0.0194
Test critical values:		
1% level	-4.467895	
5% level	-3.644963	
10% level	-3.261452	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(RESID01)

Method: Least Squares

Date: 07/03/13 Time: 07:39

Sample (adjusted): 1991 2011

Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.965129	0.233402	-4.135055	0.0006
C	133331.6	182690.2	0.729824	0.4749
@TREND(1981)	-3801.169	8702.672	-0.436782	0.6675
R-squared	0.488683	Mean dependent var		2066.082
Adjusted R-squared	0.431870	S.D. dependent var		320265.6
S.E. of regression	241398.2	Akaike info criterion		27.75785
Sum squared resid	1.05E+12	Schwarz criterion		27.90706
Log likelihood	-288.4574	Hannan-Quinn criter.		27.79023
F-statistic	8.601609	Durbin-Watson stat		2.008748
Prob(F-statistic)	0.002389			

**Table 4.4**  
Overparameterized ECM

Dependent Variable: D(GDP)

Method: Least Squares

Date: 07/03/13 Time: 07:57

Sample (adjusted): 1987 2011

Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-262535.0	309937.9	-0.847057	0.4168
D(GDP(-1))	-0.279749	0.220138	-1.270787	0.2326
ASI	135.8414	47.77077	2.843608	0.0174
D(ASI)	-115.0322	93.96020	-1.224265	0.2489
D(ASI(-1))	63.13658	64.03679	0.985942	0.3474
INF	5504.245	8154.311	0.675010	0.5150

D(INF)	-3535.663	6636.731	-0.532742	0.6058
D(INF(-1))	2977.536	7218.780	0.412471	0.6887
MCAP	-1539.715	991.0398	-1.553636	0.1513
D(MCAP)	1649.766	798.0290	2.067301	0.0656
D(MCAP(-1))	-438.0637	410.3063	-1.067650	0.3108
ND	5.028205	3.228657	1.557367	0.1504
D(ND)	-4.543250	2.909754	-1.561386	0.1495
D(ND(-1))	-4.574758	1.403588	-3.259332	0.0086
ECM(-1)	-0.394514	0.372539	-1.058989	0.3145
R-squared	0.977744	Mean dependent var		1498980.
Adjusted R-squared	0.946586	S.D. dependent var		2087324.
S.E. of regression	482411.5	Akaike info criterion		29.29469
Sum squared resid	2.33E+12	Schwarz criterion		30.02602
Log likelihood	-351.1836	Hannan-Quinn criter.		29.49753
F-statistic	31.37999	Durbin-Watson stat		2.198522
Prob(F-statistic)	0.000002			

**Table 4.5**

Dependent Variable: D(GDP)  
 Method: Least Squares  
 Date: 07/03/13 Time: 08:05  
 Sample (adjusted): 1987 2011  
 Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-237584.2	240118.9	-0.989444	0.3381
D(GDP(-1))	-0.035657	0.073836	-0.482926	0.6361
ASI	114.3003	28.23405	4.048314	0.0011
INF	4191.647	5292.852	0.791945	0.4407
MCAP	-1315.958	209.4552	-6.282763	0.0000
D(MCAP)	1109.552	196.2749	5.653048	0.0000
ND	4.210395	0.764320	5.508684	0.0001
D(ND)	-3.888793	0.629930	-6.173372	0.0000
D(ND(-1))	-4.067969	0.428631	-9.490602	0.0000
ECM(-1)	-0.714912	0.290376	-2.462025	0.0264
R-squared	0.970782	Mean dependent var		1498980.
Adjusted R-squared	0.953251	S.D. dependent var		2087324.
S.E. of regression	451312.2	Akaike info criterion		29.16688
Sum squared resid	3.06E+12	Schwarz criterion		29.65443
Log likelihood	-354.5860	Hannan-Quinn criter.		29.30211
F-statistic	55.37528	Durbin-Watson stat		2.283566
Prob(F-statistic)	0.000000			

**Table 4.6**

Dependent Variable: D(GDP)  
 Method: Least Squares  
 Date: 07/03/13 Time: 08:09  
 Sample (adjusted): 1987 2011  
 Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-213656.0	229252.2	-0.931969	0.3652
ASI	107.4464	23.81572	4.511575	0.0004
INF	3890.803	5128.572	0.758652	0.4591
MCAP	-1305.778	203.3370	-6.421741	0.0000
D(MCAP)	1141.130	180.5732	6.319490	0.0000
ND	4.217701	0.745634	5.656530	0.0000
D(ND)	-3.907396	0.613500	-6.369023	0.0000
D(ND(-1))	-4.143759	0.389192	-10.64709	0.0000
ECM(-1)	-0.741310	0.278267	-2.664022	0.0170
R-squared	0.970327	Mean dependent var		1498980.
Adjusted R-squared	0.955491	S.D. dependent var		2087324.
S.E. of regression	440365.1	Akaike info criterion		29.10231
Sum squared resid	3.10E+12	Schwarz criterion		29.54110
Log likelihood	-354.7789	Hannan-Quinn criter.		29.22401
F-statistic	65.40237	Durbin-Watson stat		2.296667
Prob(F-statistic)	0.000000			

**Table 4.7**

Pairwise Granger Causality Test Results

Null hypothesis (Ho)	F-Stat.	Prob	Conclusion
➤ GDP does not granger cause ASI	2.17082	0.1390	Do not reject Ho
➤ ASI does not granger cause GDP	4.4689	0.0242	Reject Ho
➤ MCAP does not granger cause GDP	26.2113	0.0000	Reject Ho
➤ GDP does not granger cause MCAP	5.1971	0.0133	Reject Ho

**Table 4.8** Correlation Matrix Result.

	ASI	GDP	INF	MCAP	ND
ASI	1.0000	0.839521	-0.38937	0.917583	0.859661
GDP	0.839521	1.0000	-0.35153	0.805014	0.809283
INF	-0.38937	-0.35153	1.0000	-0.3388	-0.35316
MCAP	0.917583	0.805014	-0.3388	1.0000	0.863956
ND	0.859661	0.809283	-0.35316	0.863956	1.0000

The result suggests no evidence of multicollinearity since none of the partial correlation coefficients is greater than 0.95.

**APPENDIX 2**

Number Of Deals, Market Capitalisation Ratio, Gross Domestic Product, All Share Value And Inflation Rate (1981-2011)

	ASI	ND	MCAP	GDP	INF
1981	.	10,199.00	5.00	47,619.66	21.40
1982	.	10,014.00	5.00	49,069.28	7.20
1983	.	11,925.00	5.70	53,107.38	23.30
1984	100.00	17,444.00	5.50	59,622.53	40.70
1985	127.30	23,571.00	6.60	67,908.55	4.70
1986	164.00	27,718.00	6.80	69,146.99	5.40
1987	190.90	20,525.00	8.20	105,222.80	10.20
1988	233.60	21,560.00	10.00	139,085.30	56.00
1989	325.30	33,444.00	12.80	216,797.50	50.50
1990	513.80	39,270.00	16.30	267,550.00	7.50
1991	783.00	41,770.00	23.10	312,139.70	12.70
1992	1,107.60	49,029.00	31.20	532,613.80	44.80
1993	1,543.80	40,398.00	47.50	683,869.80	57.20
1994	2,205.00	42,074.00	66.30	899,863.20	57.00
1995	5,092.00	49,564.00	180.40	1,933,212.00	72.90
1996	6,992.00	49,515.00	285.80	2,702,719.00	29.30
1997	6,440.50	78,089.00	281.90	2,801,973.00	8.50
1998	5,672.70	84,935.00	262.60	2,708,431.00	10.00
1999	5,266.40	123,509.00	300.00	3,194,015.00	6.60
2000	8,111.00	256,523.00	472.30	4,582,127.00	6.90
2001	10,963.10	426,163.00	662.50	4,725,086.00	18.90
2002	12,137.70	451,850.00	764.90	6,912,381.00	12.90
2003	20,128.90	621,717.00	1,359.30	8,487,032.00	14.00
2004	23,844.50	973,526.00	1,925.90	11,411,067.00	15.00
2005	24,085.80	1,021,967.00	2,900.10	14,572,239.00	17.90
2006	33,358.30	4,021,780.00	5,120.90	18,564,595.00	8.24
2007	57,990.22	2,615,020.00	13,294.60	20,657,318.00	5.38
2008	31,450.78	3,535,631.00	9,563.00	24,296,329.00	11.60
2009	20,827.17	1,739,365.00	7,030.80	24,794,239.00	12.50
2010	30,936.71	1,864,398.00	5,303.27	33,984,754.00	13.00
2011	32,431.57	1,950,902.00	5,554.17	37,543,655.00	12.90

Source: CBN Statistical Bulletins of various years