# Capital Market Development: A Spur to Economic Growth in Nigeria

Ismail O. Fasanya<sup>1</sup>, Adegbemi B. O Onakoya<sup>2</sup>, Donald Ikenna Ofoegbu<sup>3</sup>

**Abstract:** This paper examines the relationship between capital market development and Nigeria's economic growth using data covering the range of 1981 to 2010 using a Johansen Cointegration technique to test for long run relationship among the variables under study. The empirical findings from the research work suggest that the capital market is an essential catalyst for economic growth and is on the average and beneficial to the economy. However, the high costs of raising capital and structural imbalances in the market as well as inconsistent government policies may distorts the speedy growth of the market and thus, limit its positive impact on the economy.

Keywords: Financial Institutions; Economic Growth; Cointegration; Nigeria

JEL Classification: C01; E44

# 1. Introduction

Economic development is said to require long-term plans, which in turn needs long term investments. In a developing economy like Nigeria, there is the additional requirement for foreign direct investment in order to meet the lacuna created by the inadequacy of the local savings for propelling investment, which is a motivating factor to rapid economic development and growth. For Samuel (1999), a developed and functioning financial infrastructure (financial market) is important for propelling economic development through the mobilization of savings and efficient allocation of these savings for production. Despite the afore discussed importance of long-term capital mobilization and the role of financial institutions, it may be noted that there is no consensus in literature on the effects of the capital market (as a financial institution) on economic growth. At the firm level, Gurly and Shaw (1967) and Shaw (1973) emphasize the importance of the role of financial

<sup>&</sup>lt;sup>1</sup>Department of Economics and Financial Studies, Fountain University, Osogbo, Nigeria, Address: Oke-Osun, P.M.B. 4491, Osogbo, Osun State, Nigeria, Tel.: (+234) 8053148920, Corresponding author: fascojnr@yahoo.com.

<sup>&</sup>lt;sup>2</sup> Department of Economics, Tai Solarin University of Education, Ijagun, Nigeria, Adddress: PMB 2118, Tel.: (+234) 8164696001, e-mail: adegbemionakoya@yahoo.com.

<sup>&</sup>lt;sup>3</sup> Department of Economics, University of Ibadan, Ibadan, Nigeria, e-mail: Ikenna\_donald@yahoo.com.

institutions in positively contributing to economic growth. Some others including Shleifer and Summer (1988), Bhide, (1993) and Mayers (1988) find to the contrary. Indeed, Stiglitz (1994) and Killick and Martins (1990) are of the opinion that the growth of capital markets can be detrimental to corporate organizations. At the macroeconomic level, Kolapo and Adaramola (2011), Atje and Jovanovich (1993) and Adeniyi (2010) report positive correlation between the variables. On the other hand, the study by Alajekwu and Achugbu (2012) reports that market capitalization and value traded ratios have a very weak negative correlation with economic growth.

Thus, there is a need to determine whether or not, the Nigerian capital market has had any significant positive impact on the Nigeria economy during the study period. In addition, the study will examine the factors responsible for the market growth, especially in view of the series of financial policy reforms in the country. The market reforms have recapitalization as part of its cardinal focus (which so many studies that focused on the capital market growth seem to have omitted overtime). This study therefore, attempts to fill this gap, by incorporating the financial policy implication (i.e. bank recapitalization) and other factors responsible for the changes in the Nigerian capital market and thereafter, determine the research examines the impact of the capital market on the economic growth of Nigeria. The remainder of the paper is organized as follows. Section two deals with the background analysis of study and section three deals with the literature review. In Section four, the theoretical and methodological framework of the study is presented while the empirical results are discussed in section five. Section six concludes the paper.

# 2. Analysis of the Nigerian Capital Market

The market started operations formally in June 1961 with eight (8) securities (five government bond, zero industrial loan stock and three equities) that had been previously quoted in the London Stock Exchange. The major types of securities listed on the NSE since its establishment is government loan stock, industrial loan stock and equities. From the modest beginning in 1961, the number of listed securities have increased in leaps and bounds from 8 at inception to 52 a decade later and 264 by end 2010 (Figure 1)



Figure 1. Total Number of Listed Securities 1961-2010

Source: Author's Analysis (Data Extracted from NSE, 2010)

The composition of listed securities also changed rapidly during the period. For example, in 1961, about 63% of securities were in the form of government stock as against 0% industrial loan stock and 37% equity. In 1990, government stock"s share was 19.82%, industrial loan stock 19.82% and equity 60.36% (Uwubanmwen, 2001). While in 1995, government"s share was 12%, industrial loan stock was 22% and equity 66%. By 2005, government stock stood at 8%, industrial loan stock 18% and equity 74%. Only shift in 2010 with government bond/debt security 15%, industrial loan 3% and equity 82% (Figure 2).



Figure 2. Securities by Category Listed on the Nigerian Stock Exchange (1961-2010)

Source: Author's Analysis

The phenomenal growth of the capital market during the last four decades was brought about by government legislation, monetary policies and technical advancement in stock operations- privatization policies and exercises (1972,1977,1989-1993, 2001 and likely 2003), recapitalization for banks (2004-2005, electronic processing/automated trading activities, on-line trading, etc. The market capitalization as at 1995 stood at \$180.31 Billion, \$472.30 Billion in 2000 and \$2, 900.10 Billion in 2005. That is an increase of 161.9% and 574.03% respectively but stood at 9918.2 billion in 2010. The number of listed securities listed on the NSE (Fig. 2) has recorded an appreciable increase over the years. On the board of exchange, the number of equities increased from 3 in 1961 to 13 in 1971, an increase of 333.3%. The figure increase of 91.4%. It stood at 214 in 2005 and 217 by 2010. On the second tier securities market (SSM), there was only one security listed as at the time it was introduced in 1985. Ten years later, the number had increased to 20 representing an increase of 1,900%. This was after it had fallen from 23 in 1993. As at year 2005, the figure had fallen again to 16 equities which were maintained to 2010.

# 3. Review of Literature

In spite of the developments in stock markets, researchers have focused on the relationship between financial intermediaries (especially commercial banks) and economic growth while empirical investigations of the link between capital market and economic growth have been relatively limited.

Atje and Jovanovich (1993) in studying 40 countries for the period 1979-88, and focusing on the dynamics of market size, find a strong positive correlation between the level of financial development and stock market development and economic growth. Levine (1991) and Bencivenga, et al. (1996) emphasize the positive role of liquidity provided by stock exchanges on the size of new real asset investments through common stock financing. Investors are more easily persuaded to invest in common stocks, when there is little doubt on their marketability in stock exchanges. This, in turn, motivates corporations to go to the public when they need more finance to invest in capital goods. Although some contrary opinions do exist regarding the impact of liquidity works against propensity to save (Bencivenga and Smith, 1991; Japelli and Pagano, 1994), such arguments are not well supported by empirical evidence.

In addition, Levine and Zervos (1998), employed cross section data found that stock market liquidity is positively and significantly correlated with current and future rate of economic growth, even after controlling for economic and political factors. They also discovered that measures of both stock market liquidity and bank development significantly predict future rate of rate of growth. They therefore concluded that stock market provides important but different financial service form banks. Filer et al (1999) employed Granger causality test to provide evidence of a positive and significant causal relationship going from stock market development to economic growth, particularly for less developed countries. As regards financial variables, they found a positive link between market capitalization ratio and future economic growth although the link is more significant for higher income countries.

Adjasi and Biekpe (2006) study the effect of stock market development on economic growth in 14 countries in a dynamic panel data modeling setting. The results indicate a positive relationship between stock market development and economic growth. According to N'zué (2006), the relationship between the development of the Ivorian stock market and the country's economic performance is positive. The result also reveal that gross domestic product and stock market development are cointegrated when the control variables are included in the analysis. Moreover, there is a unidirectional causality running from stock market development to economic growth.

Carporale, et al. (2005) based on the endogenous growth model study the linkage between stock market, investment and economic growth using Vector Auto Regression (VAR) framework. The overall findings indicate that the causality between stock market components, investment and economic growth is significant and in line with endogenous growth model. It shows also that the level of investment is the channel through which stock markets enhance economic growth in the long-run.

Capasso (2006) using a sample of 24 advanced OECD and some emerging economies shows a strong and positive correlation between stock market development and economic growth and later concludes that stock markets tend to emerge and develop only when economies reach a reasonable size and with high level of capital accumulation. Capasso (2008) uses an optimal capital structure model to provide a link between components of stock market and long-term economic growth. He indicates a strong relationship between stock market and economic growth with firms showing greater preference towards issuing equity than debt as capital continues to accumulate.

Adeniyi (2010) explores the hypothesis that stock market development promotes economic growth in Nigeria and attempts to confirm its validity or otherwise, using quarterly data from 1990:1 to 2009:4 for Nigeria by employing vector error correction model (VECM) technique on the commonly used stock market development indicators. From the result, the model for the total value of shares traded ratio (vr) has the best fit followed by the market capitalization ratio (mcr) model while the model for the turnover ratio (tr) lagged behind. Mishra et al (2010), examines the impact of capital market efficiency on economic growth in India using the time series data on market capitalization, total market turnover and stock price index over the period spanning from the first quarter of 1991 to the first quarter of 2010. Thus, the authors recommend that market organizations and regulations should be such that large number of domestic as well as foreign investors enters the market with huge listings, investments, and trading so that the very objective of optimal allocation of economic resources for the sustainable growth of the country can be ensured.

Kolapo and Adaramola (2011) examine the impact of the Nigerian capital market on its economic growth applying Johansen co-integration and Granger causality tests, results show that the Nigerian capital market and economic growth are cointegrated. This implies that a long run relationship exists between capital market and economic growth in Nigeria. Chinwuba and Amos (2011), examines the impact of the Nigerian capital market performance on the economic development of Nigeria. The results indicate that Market Capitalization, All-Shares Index and number of listed companies were positively related to and capable of influencing Gross Domestic Product; while the volume of transactions and Market Capitalization were positively related to Gross Fixed Capital Formation. They conclude that the results have proved that the performance of the capital market impacts positively on the economic development of Nigeria. On the other hand, have a very weak negative correlation with economic growth

Ihendinihu and Onwuchekwa (2012) attempted to determine possible causal link between stock market performance and economic growth in Nigeria using time series data for the period 1984 to 2011. The result of the Ordinary Least Square (OLS) technique utilized in analyzing indicate that about 88% and 95% of the changes in economic growth could be explained by changes in stock market performance in the short run and long run respectively. Oke and Adeusi (2012), examines the impact of capital market reforms on the Nigerian economic growth using the ordinary least square method of regression and the Johansen co-integration analysis, the results show that capital market reforms positively impact the economic growth. The study recommends among others that government should objectively evaluate enacted laws and reforms agenda in a manner that will enhance economic growth rather than considering political issues before embarking on reforms.

## 4. Theoretical Foundation and Methodology

The theory of this study is based on neo-classical growth model drawn from Cobb-Douglas production function to capture the impact of capital market growth on economic growth.

Such that:

Where, Q is output (indicating economic growth), K is capital and L is labour input. Following a Cobb-Douglas production function;

Equation (2) is however, restrictive in the sense that it restricts the factors that influences output to only capital and labor, leaving out other factors that also influence the growth of the economy, for which we introduce the shift factors "A"-to account for technological, reformative and economic shift factors that affect economic growth. Introducing this into the equation by augmenting to labor, we have:

Taking the log of both sides to linearize the equation, we have:

If capital- "K" is dependent on accumulated fund gotten from both the Money Markets (that deal in short term capital mobilization) and Capital Market (that deals majorly in long term capital mobilization), capital investment "K", will therefore be a function of the amount saved in the money markets and/or raised in the capital market. Decomposing "K" we have:

Substituting for K in equation 4:

Thus, the specified model:

 $lnRGDP = \delta_0 + \alpha_1 lnSAV_{mm} + \alpha_2 lnMkt_{cap} + \beta lnLAB_{pop} + \varepsilon \dots \dots \dots \dots \dots \dots (7)$ 

Equation 7 is the specified model of the study which shows that the growth in output as a function of the savings in the money market, the growth rate in the capital market proxy (by the growth in the market capitalization), and the improvement in the active labor population growth rate. All parameter coefficients are expected to be positive.

In this research work, causal econometric analysis is employed. Data obtained from various (secondary) sources would be tabulated, analyzed and tested. Series of multiple regression analysis with the method of Ordinary Least Square (OLS) is used to establish relationship between variables. In addition, tests for stationary, correlation and variance inflation factor analysis is conducted for a confirmation of the unit root, linear relationships and the absence of multicollinearity respectively to avoid spurious regression.

Data employed for the study are extracted from secondary sources, such as official government documents published by the Central Bank of Nigeria (CBN), Federal Office of Statistics (FOS), the Nigerian Stock Exchange (NSE), Securities and Exchange Commission (SEC) and World Bank Development Indicator.

### 5. Empirical Analysis

#### **5.1Augmented Dickey Fuller Unit Root Test and Cointegration Test**

To avoid obtaining a spurious result by regressing non-stationary series, and also to scrutinize the integrating level of the variables which is to ensure that the variables are not of order I(2), the Augmented Dickey-Fuller (ADF) is employed to test for Stationary and the order of integration of variable. The results of the ADF unit Root test for checking for Stationary of the data, and the determined order of integration is shown in the Table 1

Variables	At Level I (0)	At First difference I(1)
LOGMCAP	0.4578	-4.1801***
LOGPOP	0.8180	-2.6350*
LOGRGDP	-0.2365	-3.1018**
LOGSAV	-1.5591	-3.8068***
Critical Levels:	-3.6793 -2.9678 -2.6230	-3.6700 -2.9763 -2.6274

**Table 1. Augmented Dickey-Fuller Unit Root Test** 

Note: \*, \*\* and \*\*\* implies significant at 10%, 5% and 1% significant levels

### Source: Author's Computation

The table above shows that all the variables are stationary at first difference. Hence, we conclude that the variables are stationary and the model is specified and regressed at first difference. However, following the rule of thumb as put by Gujarati (2003); that spuriousity in regressed result, is observed when the goodness of fit measure – "R-Square ( $\mathbb{R}^2$ )" is greater than the autocorrelation indicator - "Durbin-Watson (DW)". That is, if  $\mathbb{R}^2$ > DW, we have a spurious regression and the result is not reliable. But if the DW >  $\mathbb{R}^2$ , then we have a non-spurious regression whose report is reliable for forecasting and policy making, Thus, considering the regression at level may still be considered with the regression technique to be employed, dependent on whether or not a cointegrating relationship exist among the variables, after which diagnostic-post test for multicollinearity and auto-serial correlation (Durbin Watson) are considered.

From the Augmented Dickey Fuller (ADF) test, all the variables are stationary at first difference; we therefore go further to test for any cointegrating relationship among the variables, as this would likely suggest the regression technique to be employed.

Hypothesized No. of CE(s)	Eigen value	Max- Eigen	Critical value	Trace statistic	Critical value
		value	0.05		0.05
None	0.444398	16.45570	27.58434	38.68548	47.85613
At most 1	0.330704	11.24281	21.13162	22.22977	29.79707
At most 2	0.290500	9.609437	14.26460	10.98696	15.49471
At most 3	0.048007	1.377521	3.841466	1.377521	3.841466

#### **Table 2. Johansen Cointegration Test**

#### Source: Author's Computation

#### \* denotes rejection of the hypothesis at the 5% level

The Johansen cointegration test presented in Table 2 above, shows that there exist no cointegrating relationship among all four variables at 5 percent critical levels. This conclusion of no cointegrating relationship among the variables is confirmed in both the Trace test and the Maximum Eigen value test as expressed in the table. For this reason, we therefore conduct the regression using the basic Ordinary Least Square regression for a multivariate model.

Table 3.	Estimates	of the	Static	Model

Dependent Variable: LOGRGDP					
Method: Least Squares					
Sample: 1981 2010					
Included observations: 30					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
LOGSAV	0.54241	0.183689	5.565274	0.0001***	
LOGPOP	0.46146	0.406451	1.133539	0.2666	
LOGMCAP	0.38241	0.016116	3.724047	0.0030***	
С	0.24609	2.870419	0.130897	0.8057	
Where: ***, ** and * implies significant levels at 1%, 5% and 10% respectively					
R-square $\approx$ 0.761, Adjusted R-square $\approx$ 0.615, F- statistics $\approx$ 212.3, Durbin-Watson stat. $\approx$ 1.463,					
<b>Prob</b> (F-statistic) $\approx 0.00$					

Source: Author's Computation

The result in table 3 shows that market capitalization does have a significant positive effect on the growth of the economy. Significant at 1%, the result shows that a 1 percent increase in the growth of the capital market measured by its market capitalization, will lead to a 38% increase in growth. This conforms to the finding of earlier empirical results such as Capasso (2006) for 24 OECD countries, Mishra et al (2010) for India, and Chinwuba and Amos (2011), Kolapo and Adaramola (2011), Oke and Adeusi (2012) for Nigeria, amongst many that all agree that the capital market is an essential catalyst for economic growth and development against the views of Wai and Patrick (1973), De' Long et al (1990), Jappeli and Pagano (1990), Killick and Martin (1990), and Morck et al (1990) that suggest otherwise. The commercial bank savings was found to have a similar effect on economic growth, though with a marginally higher percentage effect on the economic growth. From the result, a percentage increase in the savings rate, will lead to 52% increase in the growth of the economy. Given its slightly larger effect on the economic growth, the result implies that growth in the Nigerian economy is bank /money market based than capital market based. That is the Nigerian economy seems to source more of its investment capital (capital structure) from the banks than the capital market.

From the result, the growth in labor population was found to have a positive (0.46) but insignificant impact on economic growth. This suggests that the labor input of the working population of the country is yet to have a significant contribution on the economic growth of Nigeria. In addition, the F-statics value (212.3) which confirms the joint significant of the included independent variables to influencing economic growth, as the critical significance value on the joint probability is less than 0.05. The result shows that approximately 70 percent of the variation in the economic growth is a result of the included independent variables. This is indicated by the R-square, while the remaining 30 percent are caused by other factors. The Durbin Watson (D.W) statistics of 1.46 below the traditional benchmark of 2.0 in the model, the study can conclude that there is no of sign auto- correlation or serial correlation in the model specification; hence the assumption of linearity is not violated. Also, the Durbin Watson value is greater than the estimated R-square. So following Gujarati"s (2003) rule of thumb, the result is not spurious.

# 6. Conclusion

This study has examined the development of capital market and its impact on the economic growth in Nigeria. The empirical findings from the research work suggest that the capital market contributed positively and significantly to growth of Nigerian economy along with the developments in the banks from 1981 to 2010. All in all, growth of the capital market is on the average and beneficial to the economy, the high cost of raising capital and structural imbalances in the market as

well as inconsistent government policies may distorts the speedy growth of the market and thus, limiting its positive impact on the economy. Based on the findings and conclusion drawn on this study, the following recommendations are therefore proposed:

- Regulatory authorities of the market, should initiate policies that would encourage more companies to access the market such as a downward review of lending rates, relaxation of entry requirement for companies, etc; as the number of listed securities as found in the study indicates the potency of this factor to produce positive impact and the high lending rate that increases financing constraint.
- Market organization and regulation should be such that large number of domestic as well as foreign investors enters the market with huge listings, investments, and trading. So that the very objective of optimal allocation of economic resources for the sustainable growth of the country can be achieved.
- Also, the authority needs to be more proactive in their surveillance role in order to check sharp practices which undermine market integrity, investors' returns and erode investors' confidence.
- Finally, government should ensure an investment friendly environment, by putting in place the necessary social infrastructures, services, and policy reforms that will enhance and encourage its labor force, domestic and foreign investor, the functioning of its financial markets, and economic growth.

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