

Capital Market Development and Economic Growth in Nigeria: A Re-examination

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Abstract. Efficient and effective capital market is one of the essential ingredients of economic growth and development. Without an efficient capital market, mobilization of savings and investment of such savings on long term basis; economic development of a nation may be hinder. Capital market as a major part of financial market which serves as a pivot to service the deficit unit, is very critical to economic growth. This paper re-examines the Nigerian capital market and its impact of economic growth using Autoregressive Distributive lag (ARDL). Employing data from Nigerian Security and Exchange Commission, Central Bank of Nigeria and Nigerian Stock Exchange from 1981-2016, it found that in the long run, accumulated effect of market capitalization and value of stock on economic growth is negative and statistically significant. By inference, market capitalization and value of transactions in the Nigeria stock market may not be considered adequate. It also found that volume of transaction in the capital market has significant positive impact on economic growth. Hence, there is no significant contribution of market capitalization and value of stock to economic growth while importance of volume of transaction in the capital was evidence. It recommends that for optimal allocation of resources towards sustainable economic growth, market capitalization and total value of stock traded should receive a boost through more entrance of local and foreign investors with huge investment base to increase volume of trading which shows significant and positive relationship with economic growth.

Keywords: Capital Market, Stock Value, Market Capitalisation, Volume of Transaction, Economic Growth

1. Introduction

The rate of growth of any economy is linked to efficiency of its financial market especially the capital market. A financial market, that is the capital

and money markets are known to be fundamentals for economic growth and development because of their intermediation roles. Financial intermediation role of capital markets enables developed economies' capital markets to complement the same roles that the banking sector plays. The capital market is expected to drive economic growth and development because it is necessary for capital formation and long term growth. A well-functioning capital market drives investment, economic efficiency and ultimately, economic growth. The capital market is a subset of the financial system that is involved in the provision of long term funds for productive use. Consequently, the capital market has become an essential agent for economic growth because it facilitates and mobilizes savings and investment from surplus economic unit to deficit economic unit. It suffices to say that financial system development cannot be achieved without capital market development. However, existig literature has shown different contradictory findings on the link between capital market and economic growth. Ezeoha, Ebele and Ndi Okereke (2009) examined the nature of the relationship that exists between stock market development and the level of investment (domestic private investment and foreign direct investment) flows in Nigeria. The study found that stock market development promotes domestic private investment flows. However, the results showed that stock development has not been able to encourage the flow of foreign private investment in Nigeria.

Dudley and Hubbard (2004) in their work found that the allocation of capital and risks by capital market led to greater economic performance in five major respects viz:

- (i) Higher productivity growth
- (ii) Higher real wage growth
- (iii) Greater employment opportunities
- (iv) Greater macro-economic stability
- (v) Greater home ownership.

Similar to this is Alenoghena, (2014) who posited that when a country's financial intermediation

process is efficient and lack repression of any sort, the result is a functioning, well developed financial system, capable of ensuring economic growth. Meanwhile, Acosta and Loza (2005) postulates that poor operational efficiencies of capital markets is an obstacle to economic growth. Therefore, long term capital is very vital for economic growth (Demirguc and Levine 1996). Other findings that are contrary to Dudley and Hubbard (2004) include Nyong (1997) and Adelegan, (2005), who found negative link between capital market and economic growth. Jedida et al (2014) findings on Tunisia stock market developments and economic growth is similar to that of Marques, Fuinhas and Marques (2013) research on same topic. They all found that there were no positive impacts of stock market on economic growth. This paper therefore re-examines how capital market efficiency in Nigeria has impacted on economic growth.

According to Al-Faki (2006), capital market is a network of specialized financial institutions, series of mechanisms, processes and infrastructure that, in various ways, facilitate the bringing together of suppliers and users of medium to long term capital for investment in socio-economic developmental projects. The Nigerian capital market is divided into the primary and the secondary market. The primary market or the new issues market provides the avenue through which government and corporate bodies raise fresh funds through the issuance of securities which is subscribed to by the general public or a selected group of investors while primary market is a market for sales of new securities. It is a platform where the company or government can raise money for investment or where already quoted companies can raise fresh funds for expansion. Both the Securities and Exchange Commission (SEC) and the Nigerian Stock Exchange (NSE) are involved in primary market activities (Soyede, 2005). On the other hand, secondary market provides an avenue for sale and purchase of existing securities. According to Pandey (2006), it is a type of market where existing securities of a market are traded on daily and continuous basis. It is the market for existing securities. This consists of exchanges and over-the counter markets where securities are bought and sold after their issuance in the primary market. The paper is divided into: Introduction, Underpinning Theory, Data and Methodology, Findings and Conclusions.

2. Underpinning Theory

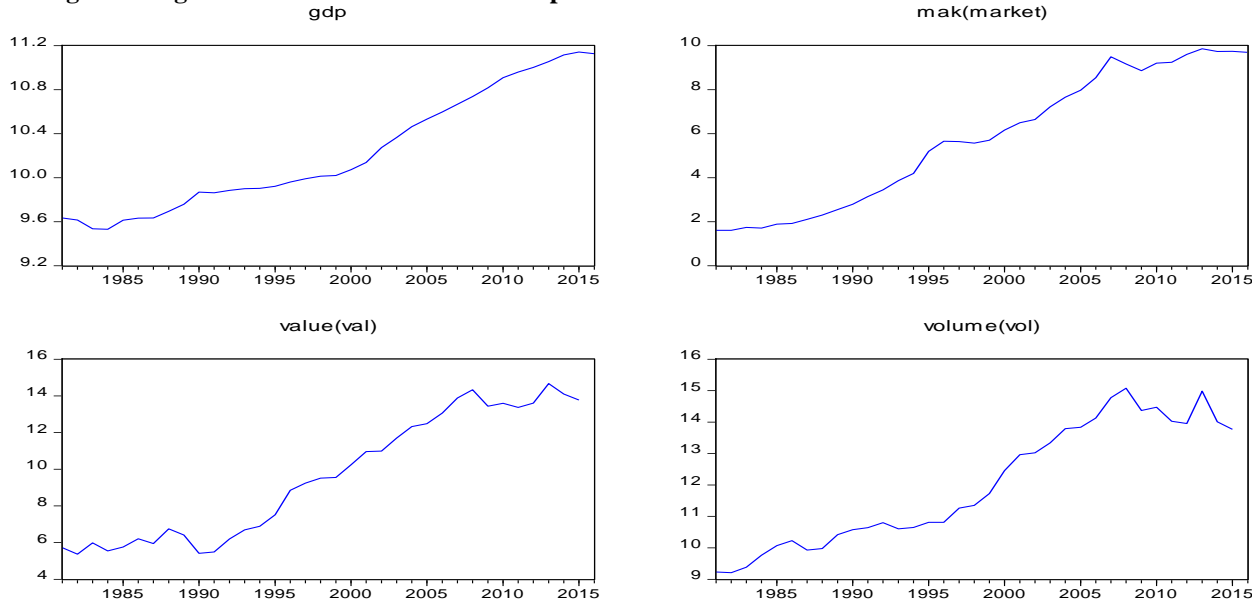
Traditionally, capital and its accessibility are the drivers of sustainable economic growth. Some renowned traditional neoclassical macroeconomic growth theorists such as Harrow-Dormar, Sorow, and

Schumpeter rely on the essentials of capital formation and accumulation as the key foundation of any strategy for economic growth. This study aligns with the neoclassical growth theorists' views because the quality of capital market, the market sophistication in terms of capitalisation and competition in terms of volume and stock values significantly impact on the cost of capital and the associated risk for investment financing. Some economists have provided arguments supporting a direct positive linear relationship between a developed financial market and economic growth, such as Schumpeter (1912) others have contrast views such as Robinson (1952) who opines that where enterprise leads, finance follow. By implication, economic development itself creates demands for types of financial arrangements and that financial system responds to demands of economic growth. However, while some empirical studies often provide relationship between financial development proxies and economic growth, some does not. According to Pam & Mishra, (2018), the nature of the relationship between stock market and economic growth varies from one country to another and probably differs among countries that are at different levels of economic growth. Olofin & Afangideh, (2008), Ogunmuyiwa (2010) and Azubike, (2017) established a positive relation between stock market and economic growth. However this finding contradicts the research of Christain, Nwezeaku, and Akujuobi (2015) who found that market capitalization does not have significant impact on the economy in Nigeria.

3. Data and Methodology

This study employs time series data in evaluating the efficiency of Nigerian capital market and its influence on economic growth. Different estimation techniques were considered for this study and includes Augmented Dickey-Fuller unit root test, Schwarz information criterion to select optimal lag and Autoregressive Distribution Lag (ARDL). The constant GDP per capita is used as proxy for an economic growth while market capitalization, volume of transaction and stock values are proxies for capital market development. The study employs yearly data for the period of 1981-2016 sourced from Nigerian Security and Exchange Commission, Central Bank of Nigeria and Nigerian Stock Exchange. Before formal pretest (unit root tests), the study plot the time series of the variables under study as it may help reveal the integrating nature of the variable. The log of real gdp, log of market capitalization, log of stock value transaction and the log of volume of trade are examined graphically as depicted below in figure 1.

Figure 1: log of variables shows clear trend spanned 1981-2016



It can be shown from the figures above that both the variables show a visible pattern of trend. In a unit root language, we may say that both the variables are not stationary over the sample periods. However, no numerical fact can be derived from the graphical inspection of the variables in question. Based on this, we employed the Augmented Dickey-Fuller unit root test to investigate numerically the integrated properties of the variables.

Model Specification

Four variables are employed to establish if Nigerian capital market is developed or not. These are:

- GDP=** GDP per capita proxy for an economic growth
- While proxies for capital market development are:
- Mkt=** Market Capitalization
- Vol=** Volume of Transaction
- Val=** Stock Values

The Pesaran and Pesaran (1997) and Pesaran and Shin (1998) specified the augmented ARDL equation $(p, q_1, q_2, \dots, q_k)$ as follows:

$$\alpha(L, p) y_t = \alpha_0 + \sum_{i=1}^k \beta_i(L, q_i) x_{i,t} + \varepsilon_t \tag{1}$$

Where:

- α_0 = constant
- y_t = dependent variable
- L = Lag operator
- $x_{i,t}$ = Vector of Regressors (where $i = 1, 2, \dots, k$) and
- ε_t = disturbance term.

In the long-run:

$$\begin{aligned} y_t &= y_{t-1} = \dots = y_{t-q} \\ x_{it} &= x_{i,t-1} = \dots = x_{i,t-q} \end{aligned} \tag{2}$$

$x_{i,t-q}$ denotes q^{th} lag of the i^{th} variable.

Consequently, the long run equation can be written as follows:

$$y_t = \alpha + \sum_{i=1}^k \beta_i x_i + \varepsilon_t \quad (3)$$

4. Findings

The unit-root test result is presented in the Table 2 below, the result shows that the log of real gdp, log of market, log of value and the log of volume contained unit root and they become stationary at first difference (as suggested by the graph) at 5% and 1% level of significance respectively.

Table 2: ADF unit root test result

| H ₀ : Unit root H ₁ : Stationary | | Augmented Dickey-Fuller test @level | | | |
|---|-------------|---|-----------|-----------|-----------|
| | | Gdp | mak | val | vol |
| With C and T | t-Statistic | 0.0973 | -0.4818 | -0.3327 | -1.1395 |
| | Prob. | 0.9609 | 0.8831 | 0.9095 | 0.6885 |
| | | Augmented Dickey-Fuller test @1difference | | | |
| | | Gdp | mak | val | vol |
| With C and T | t-Statistic | -3.2294 | -4.3755 | -5.3436 | -5.7903 |
| | Prob. | 0.0268** | 0.0015*** | 0.0001*** | 0.0000*** |

Source: Author's computation

The probability values are one sided based on MacKinnon (1996). * (**) (***) denotes significance at 10%, 5% and 1% respectively.

It is necessary to select the optimal lag for the ARDL model to use and the subsequent tests and dynamic will be based on the model selected. Estimation of too much parameter will lead to proliferation and useful information will be loss. Also, selection of too much lag will reduce the available data for estimation and less degree of freedom will be available thereby making the result shaky. As a result of mixed order of integration that is combination of I(0) & I(1)], the ARDL Bounds Testing methodology of Pesaran and Shin (1999) and Pesaran et al. (2001) was employed. The study use Schwarz information criterion due to its parsimonious selection nature to select the optimal lag. ARDL (1, 0, 0, 0) model is selected by the Schwarz information criterion. From the model estimated, we compute the long run and the error correction. The Table 2 below shows the estimated ARDL (1, 0, 0, 0) model. It can be seen that all the variables except the variable **val** are statistically significant.

Table 2: ARDL (1, 0, 0, 0) estimated parameters

Dependent variable: gdp

Adjusted sample: 1981-2016 (34 observations)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------------|-------------------|------------|-------------|-----------|
| gdp(-1) | 0.877380 | 0.044520 | 19.70764 | 0.0000*** |
| mak | -0.027643 | 0.014766 | -1.872097 | 0.0717* |
| val | -0.004021 | 0.009519 | -0.422391 | 0.6760 |
| vol | 0.042798 | 0.010932 | 3.915060 | 0.0005*** |
| trend | 0.009685 | 0.004205 | 2.303247 | 0.0289** |
| constant | 0.802759 | 0.428298 | 1.874302 | 0.0714* |
| R ² -Adjusted | 0.997154 | | | |
| F-stat | 1962.2[0.0000]*** | | | |
| σ̂ | 0.03 | | | |
| RSS | 0.03 | | | |
| LM(1) | 0.0003[0.9553] | | | |
| LM(2) | 1.4145[0.4930] | | | |
| LM(3) | 3.0102[0.3901] | | | |
| χ ² -ARCH(1) | 0.0005[0.9815] | | | |
| χ ² -ARCH(2) | 1.1188[0.5715] | | | |
| χ ² -ARCH(3) | 1.4427[0.6955] | | | |
| Ramsey (1,27) | 1.7029[0.2029] | | | |
| Ramsey (2,26) | 1.8082[0.1093] | | | |

Source: Author's computation using Eviews

* (**) (***) denotes significance at 10%, 5% and 1% respectively

The Table 2 above revealed that almost 100% of variation in gdp is explained by it predetermined variables, **mak**, **val** and **vol**. The standard error of regression and the residual sum of square are practically zero. The model

estimated passed the test of autocorrelation, heteroscedasticity and instability. The practical meaning of these is that the model estimated can be used for forecasting and policy analysis.

There is the need to test for the presence of long run relationship between the variable so as to avoid spuriousity. In Table 3 below is the bound test result. The calculated F-statistics is far greater than the critical values and we may conclude that there is long run relation between the variables and it is empirically valid.

Table 3: ARDL F-Bound Test Result

Null Hypothesis: No levels relations relationship

| Test Statistic | Value | Signif. | I(0) | I(1) |
|------------------|-------|---------|------|------|
| F-stat | 7.58 | 10% | 3.29 | 4.17 |
| d.o.f (k) | 3 | 5% | 3.94 | 4.92 |
| Sample Size Used | 34 | 1% | 5.65 | 6.93 |

Source: Author's computation using Eviews

Long run parameter is estimated in Table 4 below, it reveals that the variable **val** is not statistically significant. The result also shows that the accumulated effect of **mak** on **gdp** is negative and statistically significant while volume of transaction-**vol** impacted positively on **gdp** significantly. Also, one percent increases in **mak** leads to 0.23% decrease in real **gdp** in the long run while one percent increases in **vol** leads to 0.34% increase in real **gdp** in the long run respectively. By inference, market capitalization and value of transactions in the Nigeria stock market may not be considered adequate. Hence, there is no significant contribution to GDP. However, volume of transactions in the market is seen to be contributing positively to economic growth and the increase is statistically significant. This is not puzzling because number of times the stock exchange hands in a trade is expected to impact positively on economic growth.

Table 4: ARDL (1, 0, 0, 0) Estimated Long Run Parameters

Dependent variable: **gdp**

Adjusted sample: 1984-2016 (34 observations)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------|-------------|------------|-------------|-----------|
| mak | -0.225437 | 0.115713 | -1.948237 | 0.0615* |
| val | -0.032789 | 0.082085 | -0.399448 | 0.6926 |
| vol | 0.349029 | 0.165120 | 2.113787 | 0.0436** |
| trend | 0.078986 | 0.021809 | 3.621735 | 0.0011*** |

Source: Author's computation using Eviews

* (**) (***) denotes significance at 10%, 5% and 1% respectively

The Table 5 below shows the error correction model estimated parameters. Intuitively, zero lag is selected for **mak**, **val** and **vol** and hence they do not appear in the error correction model and their short run immediate impact correspond to their respective parameters in the Table 2 above. The Table shows that the error correcting term is as well significant. The error correction term shows that 12.3% of disequilibrium in **gdp** due to exogenous shock is corrected within a year. Economic implication of the above analysis is that the role of **vol** on the economy cannot be overemphasized.

Table 5: ARDL (2, 0) Error Correction Model

Dependent variable: **d(gdp)**

Adjusted sample: 1981-2016 (34 observations)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-----------------|-------------|------------|-------------|-----------|
| constant | 0.812444 | 0.116818 | 6.954781 | 0.0000*** |
| ecm(-1) | -0.122620 | 0.018634 | -6.580361 | 0.0000*** |

Source: Author's computation using Eviews

* (**) (***) denotes significance at 10%, 5% and 1% respectively

5. Conclusion and Recommendations

This study re-examines Nigerian capital market efficiency in terms of resource allocation investments for productivity needed for economic growth. It found that the capitalization of the market is inadequate to support it efficiency which is expected to impact positively on economic growth. It also

found inadequate total value of stock necessary to influence economic growth. This study aligns with the finding of Christain et al (2015) who found that market capitalization does not have significant impact on the economy in Nigeria. However, it is not puzzling that this study finds that volume of transaction in the Nigeria capital market has a significant positive relationship with economic

growth. Albeit, the likelihood to conclude that Nigerian capital market is developed and adequately efficient is difficult. It recommends the need for regulatory authorities to ensure that there is increase in domestic savings and inflow of foreign capital into the market to increase market capitalisation and hence market liquidity for efficient performance.

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