

## Macroeconomic Determinants of Stock Market Development in Nigeria: (1981-2017)

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**Abstract:** For the stock market to contribute effectively and efficiently in its role of capital formation, the macroeconomic environment in which it operates must be conducive and growth supportive. Hence, this study examine macroeconomic determinant of stock market development in Nigeria for the period of 1981 to 2017. The study employed the ARDL bound testing technique to investigate the long run and short run relationship between the dependent variable (stock market development) and independent variables (GDP, banking sector development, stock market liquidity, foreign direct investment, inflation rate and savings rate). The result of the study showed that in both the short run and long run, key macroeconomic determinants of stock market development in the context of the Nigerian Stock Exchange Market are banking sector development, stock market liquidity, foreign direct investment and to an extent the income level (GDP) while inflation rate which measures macroeconomic stability, and savings rate do not significantly explain stock market development. This study therefore recommended amongst others that policymakers should ensure economic stability in order ensure the development of stock market.

**Keywords:** Macroeconomic; Stock Market Development; Nigeria; ARDL Approach

**JEL Classification:** B22; F62; G1

### 1. Introduction

Stock markets have been recognized as a conduit for investments in an economy due to the role they perform in capital formation which is a prerequisite for economic growth and development. The stock market serves as a platform for raising and allocation of funds needed for investment, thereby creating opportunities for investors. According to Oseni and Nwosa (2011), it is where the elements of development of an economy interact with each other and an integral part of every economy (Saleem & Alifiah, 2017). Stock market is a mirror and a barometer of economic performance (Singh, 2010; Dev & Shakeel, 2013). Studies have shown that the stability of the stock market is necessary for economic growth

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of both developing and developed countries. Yet, the market has been known to be sensitive to the condition of the economy within which it operates. Therefore, macroeconomic conditions are expected to affect the development of the stock market (Al-Majali & Al-Assaf, 2014).

Theoretical approach supports the role of domestic economic fundamentals in determining the performance and growth of stock market (Sharma & Mahendru, 2010). It is well documented in research that stock prices react to information on corporate control, regulatory policies and macroeconomic conditions (Cutler, Poterba & Summers, 1988). Traditional valuation of stock is based on its present value which is derived from the discounted expected future cash flow streams. The expected future cash flows are however, sensitive and subjected to changes in macroeconomic conditions (Mehr-un-Nisa & Nishat, 2012). The linkage between macroeconomic variables and stock prices is provided by the arbitrage pricing theory developed by Ross (1976). Fundamental macroeconomic variables such as gross domestic product, interest rates, inflation rates, exchange rates, money supply, and external debts have been documented in empirical studies to affect stock market prices (Laichena & Obwogi, 2015). These economic indicators either boost or reduce the confidence of local and foreign investors in the stock market.

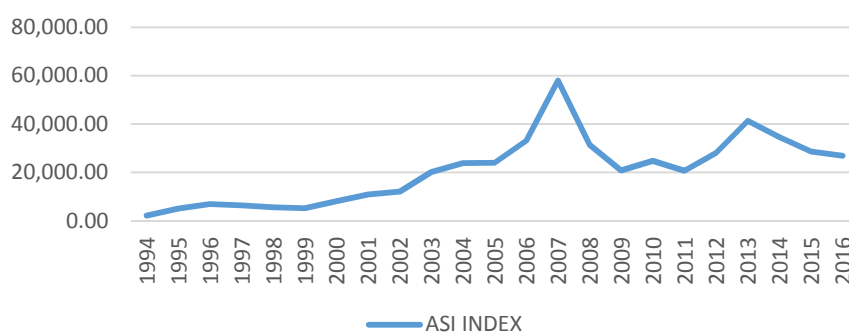
Stock markets of emerging economies over the past few decades have witnessed remarkable growth as indicated by the value and volume of trade in the markets along with the level of capital inflows from developed markets, thereby providing numerous opportunities for investments (Beckmann, Berger & Czudaj, 2015; Raza, Shahzad, Tiwari & Shahbaz, 2016). The development of the stock market is vital as it provides more opportunities for greater mobilization of funds and better efficiency in resource allocation (Inanga & Emenuga, 1997 as cited in Okoro, 2017). Thus, in order to ensure stability and development in the stock market, emerging economies like Nigeria have over the years witnessed several reforms. Nevertheless, investment returns in the stock market of developing economies continue to be more reactive to changes in economic fundamentals due to their fragile and volatile nature (Ahmed, 2008; Kirui, Wawire & Onono, 2014). This makes them even more unpredictable and unstable unlike the stock markets of developed economies, which are known to be more stable.

In recent years, macroeconomic variables performance in Nigeria has been poor. Presently, the situation has been exacerbated by the recent decline in global oil price due to the oil-dependent nature of the Nigerian economy. Key indicators such as the GDP experienced negative growth rate consistently over the quarters of 2016, thereby, increasing inflation rate to double digit and pushing the depreciation of the exchange rate to a new height. All these could potentially limit the development of the stock markets as well as impede on its role in contributing to the development of the economy. Developing countries like Nigeria are still yet to

fully exploit the potential benefits of the stock market due to some problems which are yet to be fully identified. This study attempts to identify these problems from the macroeconomic perspective by addressing questions such as: what are the macroeconomic determinants of stock market development and to what extent have macroeconomic variables affected the development of the stock market in Nigeria? While there are numerous empirical studies on the impact of macroeconomic variables on stock market prices and returns in Nigeria, studies on macroeconomic variables as determinants of stock market development are scarce. Conflicting results from existing empirical studies also necessitate further investigation. The result of this study would not only provide information to investors on factors affecting their investment, it would as well help policy makers in formulating policies which could help develop the stock market.

As at the first quarter of 2018, the NSE is the third largest exchange in Africa. It experienced an increase in Market Capitalization from N16.88 trillion (\$90.68 billion) in the fourth quarter of 2014 to N24.87 trillion (\$81.36 billion) and the largest exchange in West Africa (NSE fact sheet, 2018, 2014). There are 171 listed equities, 91 listed bonds and 9 listed ETFs with 166 listed companies from 11 industries. As regards the movement of the NSE ASI index, there was a massive increase from 1998 to 2008 with an upsurge from 5,672.70 points to 55,949 points. However, the financial crisis of 2008 led to a downward trend in the ASI with more than 40% drop from 2008 to 2010. It then recovered and increased in 2014 to 34,657.20 points, and again suffered a drop in 2016 to 26,874.60 points which can be attributed to recession. It is the interest of this study to then examine the macroeconomic factors responsible for the developments in the NSE development.

Figure 1: ASI INDEX



Source: CBN Statistical Bulletin 2016, NSE Fact Sheet, 2016

## 2. Literature Review

This section contains a review of prior studies on macroeconomic determinants of stock market development from developed and developing economies. One of the earliest studies on the subject matter is by Garcia and Liu (1999) who studied fifteen industrial and developing countries and concluded that real income, saving rate, financial intermediary development and stock market liquidity are important determinants of stock market development. Hsing (2014) in a study in Estonia reported that stock market index is positively affected by the debt/GDP ratio, real GDP and the German stock market index and is negatively associated with the exchange rate, the domestic interest rate, the expected inflation rate, and the euro area government bond yield. Al-Mamun (2013) in global growth generator (3G) countries applied panel ARDL model and showed evidence supporting macroeconomic variables as significant determinants of the stock market development. In Pakistan, Muhammad, Sonia and Tayyaba (2017) found that there is strong correlation between market capitalization, foreign direct investment, money supply and oil prices. Sukruoglu and Nalin (2014) in a similar study suggested that income, monetization ratio, liquidity ratio, saving rate and inflation affect stock market development while monetization ratio and inflation have negative effects, income, liquidity ratio and saving rate exhibited a positive effect on stock market development.

In a recent study, Ho and Odhiambo (2018) analyzed the macroeconomic drivers of stock market development in the Philippines. Using the ARDL bounds testing procedure, the empirical results revealed that trade openness has a negative impact on Philippine stock market development in the long run, while banking sector development and the exchange rate both have positive impacts on the development of the Philippine stock market in the short run. Zhou, Zhao, Belinga and Gahe (2015) applied the Calderon-Rosell model to investigate the macroeconomic factors affecting the stock market development in Cameroon. The result of the study indicated that stock market liquidity and financial openness are significant determinants of stock market development. However, contrary to the result of Ho and Odhiambo (2018), banking sector development did not positively and significantly determine stock market development of Cameroon under the period reviewed. Su, Bui and Nguyen (2016) employed a panel data of 36 developing countries for the period 2003 to 2014 and applied two-way General Method of Moments to explore the determinants of stock market development. The findings showed that economic growth, domestic credit and stock market liquidity are positive determinants of stock market development while money supply is a negative determinant.

Most of the studies (Al-Mamun (2013); Muhammad et al (2017); Sukruoglu and Nalin (2014); Dev and Shakeel (2013); Ho and Odhiambo (2018); Su et al (2016); Kemboi and Tarus (2012); Yartey (2008); Shrestha and Subedi (2014); Matadeen (2017); Bayar (2016)) reviewed agreed that foreign direct investment, economic growth, stock market liquidity, trade openness, inflation, savings rate and banking sector development are significant determinants of stock market development, while studies such as Owiredu et al (2016), Acquah-Sam (2016), Zhou et al (2015) and Shadnan and Khan (2017) showed mixed results. Empirical studies in Nigeria regarding the subject matter is scarce as earlier stated. Existing studies have focused on the relationship between stock market prices and macroeconomic variables (Asaolu & Ogunmuyiwa, 2010; Oseni & Nwosa, 2011; Malaolu et al., 2013; Onakoya, 2013; Abdulkarim, 2014; Inyama & Nwoha, 2014). A study by Ayunku and Etale (2015) only assessed the impact of stock market development on economic growth and failed to examine the relationship in the opposite direction. Okoro (2017) on the other hand, failed to proxy stock market development by market capitalization which according to Levine and Zervos (1996) and Dermirguc-Kunt and Levine (1996) (as cited by Garcia and Liu, 1999) is less arbitrary than other individual measures and indexes of stock market development.

### 3. Research Method

#### 3.1. Data

Macroeconomic variables such as real gross domestic product, banking sector development, stock market liquidity, foreign direct investment, inflation rate and savings rate are selected as determinants of stock market development. Stock market development is proxy by market capitalization which is a better proxy for general development in the market. The Calderon-Rossell Model (1991) provided a model linking economic growth and stock market liquidity as the main determinants of stock market development. However, in recent years, the model has been modified to incorporate other stock market determinants (Yartey, 2008; Kemboi and Tarus, 2012; Zhou et al 2015; Acquah-Sam, 2016). According to the Calderon-Rossell (1991) model, market capitalization is defined below;

$$Y = PV \quad (1)$$

Where;

Y is market capitalization in local currency, P is the number of listed companies in the stock market and V is the local currency average price of listed companies

The model was formally presented as follows;

$$Y = PV = Y(G, T) \quad (2)$$

$$V = V(G, P), P = P(T, V) \quad (3)$$

The exogenous variable  $G$  represents per capita GNP in local currency and variable  $T$  represents the turnover ratio (which is equal to the value of total shares traded divided by market capitalization and it is used for measuring stock market liquidity). The endogenous variables are  $V$  and  $P$ .

The structural equations are then expressed in the following reduced behavioral model:

$$\text{Log } V = \theta_1 \text{Log } G + \theta_2 \text{Log } T \quad (4)$$

The component of the reduced form model is expressed as follows:

$$\text{Log } V = \alpha_1 \text{Log } G + \alpha_2 \text{Log } T \quad (5)$$

$$\text{Log } P = \pi_1 \text{Log } G + \pi_2 \text{Log } T \quad (6)$$

Equation 4 can be written as:

$$\text{Log } V = \text{Log}(PV) = \alpha_1 \text{Log } G + \alpha_2 \text{Log } T + \pi_1 \text{Log } G + \pi_2 \text{Log } T \quad (7)$$

Factorizing we have:

$$\text{Log } Y = (\alpha_1 + \pi_1) \text{Log } G + (\alpha_2 + \pi_2) \text{Log } T \quad (8)$$

Where:

$$\theta_1 = \alpha_1 + \pi_1 \quad (9)$$

$$\theta_2 = \alpha_2 + \pi_2 \quad (10)$$

Equation 8 shows the impact of economic growth  $G$ , and stock market liquidity  $T$  on stock market development  $Y$ . The model shows that stock market development is the result of the combined effect of economic growth and liquidity on both prices and the number of listings.

### 3.2. Model Specification

Following Calderon-Rossell model (1991), this study modified the model in order to incorporate more variables as determinants of stock market development. Therefore, the following model is adopted for this study;

$$MRK_t = \beta_0 + \beta_1 GDP_t + \beta_2 BSD_t + \beta_3 SML_t + \beta_4 FDI_t + \beta_5 INF_t + \beta_6 SVR_t \quad (11)$$

Where;

$\beta_0$  = intercept/constant,  $\beta_1 - \beta_7$  = parameters/coefficients of the explanatory variables,  $\mu_t$  = stochastic term

### 3.3. Estimation Technique

The study collected times series annual data for the period covering 1981 to 2016. The study made use of secondary data sourced from CBN statistical bulletin, journals and articles. In order to investigate the dynamic linkage between macroeconomic variables and stock market development in the Nigeria stock exchange market, this study adopted the autoregressive distributed lag (ARDL) cointegration approach, or bound testing method, that was proposed by Pesaran et al. (2001). ARDL cointegration approach has numerous benefits as relative to other cointegration estimation methods. The flexibility of ARDL model is appealing, as it can be used regardless of whether underling variables are integrated I(0) or I(1), but not I(2). Secondly, unlike other cointegration approaches, the ARDL technique are not sensitive to the size of sample, and is comfortably applied even under a small sample size. Thirdly, ARDL cointegration approach can distinguish explanatory and explained variables, and enables testing the existence of linkage between the underling variables. Furthermore, it has better statistical properties by providing unbiased estimates and valid t-statistics. Various diagnostic tests are carried out in order to generate the Best Linear Unbiased Estimator. These tests include the Augmented Dickey Fuller (ADF) Unit root test which is to test the stationarity of the variables and their order of integration, the Autocorrelation LM test to check for the autocorrelation in the residuals, Heteroscedasticity test and Normality tests.

The ARDL bound testing procedure employs the equation

$$\begin{aligned} \Delta LMRK_t = & \beta_0 + \sum_{i=0}^n \beta_1 \Delta LMRK_{t-1} + \sum_{i=0}^n \beta_2 \Delta LGDP_{t-1} + \sum_{i=0}^n \beta_3 \Delta LBSD_{t-1} \\ & + \sum_{i=0}^n \beta_4 \Delta LSVR_{t-1} + \sum_{i=0}^n \beta_5 \Delta LINF_{t-1} + \sum_{i=0}^n \beta_6 \Delta LSML_{t-1} \\ & + \sum_{i=0}^n \beta_7 \Delta LFDI_{t-1} + \alpha_1 LMRK_{t-1} + \alpha_2 LGDP_{t-1} + \alpha_3 LBSD_{t-1} \\ & + \alpha_4 LSVR_{t-1} + \alpha_5 LINF_{t-1} + \alpha_6 LSML_{t-1} + \alpha_7 LFDI_{t-1} \\ & + \mu_t \quad (*) \end{aligned}$$

Where  $\mu$ ,  $\beta$  and  $\alpha$  are the white-noise error term, the short run coefficients and the long run coefficients of the model respectively, and  $\Delta$  is the first difference operator.  $t$  denoted time period. The maximum number of lags in the model is chosen using AIC.

## 4. Empirical Result

### 4.1. Unit Root Test Result

The Augmented Dickey Fuller (ADF) test presented in table 1 reveal that all variables are stationary at first differences except INF which is stationary at level.

**Table 1. Augmented-Dickey-Fuller (ADF) Test**

Variables	Augmented Dickey-Fuller test statistic		Order of Integration
	Level	First Difference	
MRK	-1.868031	-6.477611***	1(1)
LogGDP	-0.643910	-3.086936**	1(1)
BSD	-0.252102	-4.886752***	1(1)
SVR	-2.220649	-6.368255***	1(1)
INF	-3.118961**	-3.211953**	1(0)
SML	-2.509132	-5.879620***	1(1)
FDI	0.510290	-5.593981***	1(1)
<b>\Asymptotic critical values*:</b>			
1% level	-3.639407		
5% level	-2.951125		
10% level	-2.614300		

Source: Author's Compilation via EVIEW 9

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

This means that the hypothesis of unit root is not rejected for all variables at the 5% level of significance in level. Hence, stock market development and the five selected macroeconomic variables are integrated of the same 1(1) order except inflation which is 1(0). The result of the ADF test signifies that we can proceed to conducting cointegration test using the ARDL bound testing approach which gives room for linear combination of different order of integration. Therefore, the study then employs the ARDL method of estimation to explore the short run and long-run relationships among the variables.

### 4.2. ARDL Bound Test

The ARDL cointegration test is employed to investigate the long run relationship among the variables. The model was estimated and the ARDL bounds test was conducted. The results of the ARDL bounds test which is presented in table 3 indicated that F statistics which is 22.25 was higher than upper bound critical values. So we rejected the null hypothesis (there was no cointegration relationship among the variables) and we concluded that there was cointegrating relationship among the variables. Having found that  $\Delta$ MCR,  $\Delta$ GDP,  $\Delta$ BSD,  $\Delta$ SVR, INF,  $\Delta$ SML and  $\Delta$ FDI are co-integrated, the study estimates the model using the ARDL bounds



test approach. The first step is to determine the optimal lag length for the model using the Akaike Info criterion (AIC). The optimal lag length selected based on AIC is ARDL (2, 0, 2, 0, 0, 2, 2). The long-run and short-run results of the selected model are reported in Table 3 and 4.

**Table 2. Results of ARDL Bounds Test**

<b>Null Hypothesis: No long-run relationships exist</b>		
<b>Estimated equation</b>		
<b>F-statistics</b>	<b>22.25181***</b>	
<b>Optimal lag length</b>	<b>(2, 0, 2, 0, 0, 2, 2)</b>	
<b>Significance level</b>	<b>Critical values</b>	
	<b>Lower bound I0</b>	<b>Upper bound II</b>
	<b>1%</b>	<b>4.43</b>
<b>5%</b>	<b>3.61</b>	
<b>10%</b>	<b>2.12</b>	<b>3.23</b>

Note: \*\*\* denotes significance at 1%

The long run coefficients of the model were estimated after a long run relationship among the variables has been established from the bound test result and the result was presented in Table 3. The long run coefficients showed that the key macroeconomic determinants of stock market development in the context of the Nigerian Stock Exchange Market are banking sector development, stock market liquidity, foreign direct investment and to an extent the size of the economy in the long run. The results show that coefficient of gross domestic product is positive and significantly related to stock market development at 10% level of significance. This implies that a percentage increase in GDP increases stock market development by 2.72 percentage points. This means that a growing economy increases the demand for equity investment. On the other, banking sector development is negative and significantly associated with stock market development. A percentage increase in banking sector development leads to decrease in stock market development by 0.499 percentage points. However, stock market liquidity has a positive and statistically significant relationship with stock market development. Likewise, foreign direct investment has a positive and significant association with stock market development. Inflation has a negative but insignificant relationship with stock market development. Savings is positive but insignificant in explaining stock market development.

**Table 3. Long Run Coefficients of ARDL (2, 0, 2, 0, 0, 2, 2)**

Dependent variable: $\Delta$				
Regressor	Coefficient	Standard error	t-Statistic	Probability
$\Delta$	2.720737*	1.485389	1.831666	0.0846
$\Delta$	-0.498806***	0.161888	-3.081185	0.0068
$\Delta$	0.030891	0.107147	0.288306	0.7766
$\Delta$	-0.003163	0.007338	-0.431020	0.6719
$\Delta$	0.352254***	0.041217	8.546331	0.0000
$\Delta$	0.601106***	0.128106	4.692277	0.0002
$\Delta$	-0.226257	0.270891	-0.835232	0.4152

Source: Author's Compilation via EVIEW 9

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

The result of the short run coefficients of the model was presented in Table 4. The short run coefficients showed the key macroeconomic determinants of stock market development in the context of the Nigerian Stock Exchange Market are gross domestic product, lagged value of banking sector development, stock market liquidity, lagged value of stock market liquidity and lagged value of foreign direct investment in the short run. Gross domestic product is positively related to stock market development but statistically significant at 10%. The result is in line with the result from the long run coefficients and lends support to the studies of Yartey (2008), Acquah-Sam (2016), and Ho and Odhiambo (2017).

The current value of banking sector development is positive but insignificant in explaining the behavior of stock market development in the short run. However, the lagged value of banking sector development is positive and significantly related to stock market development. This is contrary to the result from the long run result which indicated a negative relationship between banking sector development and stock market development. However, the result is in line with the suggestion by Yartey (2008) that at the early stages of stock market development, the banking sector act as a compliment to the stock market in financing investment. However, as they both develop, the banking sector and the stock market begin to compete with each other and thereby become substitute for financing investment (Al-Mamun, 2013). The long run result however contradict the result of Levine and Zervos (1998), Garcia and Liu (1999), and Ho and Odhiambo (2017).

Domestic savings is positive but insignificantly associated with stock market development both in the short and long run. This is in line with the theoretical expectation that an increase in domestic savings should be associated with the development of the stock market. However, the relationship is insignificant and in line with the result of Yartey (2008) but in contrast with Ita and Duke (2013). Inflation rate which measures macroeconomic instability is negative and

insignificantly related to stock market development. This means that an unstable macroeconomic environment erodes the confidence of investors in the stock market. However, it does not significantly determine the development of the stock market. This implies that the stock market anticipate the effect of macroeconomic instability. This is also the case in the long run result. This support the result of Garcia and Liu (1999), Ita and Duke (2013) and Ho and Odhiambo (2017) but in contrast with Yartey (2008).

Both the coefficient of the current and lagged values of stock market liquidity are positively and negatively related to stock market development respectively. Both relationships are statistically significant. This shows that stock market liquidity is positively and significantly related to stock market development both in the short and long run. This result is consistent with earlier studies and therefore suggests that liquid market provides investors with the opportunity to access their investment with ease, thereby increasing the confidence of the investors in the market (Yartey, 2008; Kemboi & Tarus, 2012)

For the current value of foreign direct investment, the coefficient is positive but insignificantly related to stock market development. However, the lagged value of foreign direct investment is negative and significant in explaining stock market development in the short run. In addition, the results show that the coefficient the error correction term which measures the speed of adjustment to equilibrium is negative and statistically significant as expected. This implies that, when the variables drift apart from equilibrium level by one percent in the short run, they correct by 2.663 per cent towards the equilibrium level.

**Table 4. Short Run Coefficients of ARDL (2, 0, 2, 0, 0, 2, 2)**

Dependent variable: $\Delta_{t-1} \ln \text{Stock Market Development}$				
Regressor	Coefficient	Standard error	t-Statistic	Probability
$\Delta_{t-1} \ln \text{Stock Market Liquidity}$	0.748867***	0.195314	3.834171	0.0013
$\Delta_{t-1} \ln \text{FDI}$	7.246002*	4.012149	1.806015	0.0887
$\Delta_{t-1} \ln \text{FDI}$	0.091190	0.222590	0.409675	0.6872
$\Delta_{t-1} \ln \text{Stock Market Liquidity}$	0.560058**	0.231239	2.421989	0.0269
$\Delta_{t-1} \ln \text{FDI}$	0.082271	0.2898972	0.283818	0.7800
$\Delta_{t-1} \ln \text{FDI}$	-0.008423	0.019539	-0.431112	0.6718
$\Delta_{t-1} \ln \text{Stock Market Liquidity}$	0.297318***	0.067529	4.402792	0.0004
$\Delta_{t-1} \ln \text{FDI}$	-0.217860***	0.060412	-3.606271	0.0022
$\Delta_{t-1} \ln \text{FDI}$	0.198279	0.159830	1.240564	0.2316
$\Delta_{t-1} \ln \text{Stock Market Liquidity}$	-1.159968***	0.154859	-7.490499	0.0000
$\Delta_{t-1} \ln \text{FDI}$	-2.663250***	0.286879	-9.283541	0.0000

Source: Author's Compilation via EVIEW 9

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

Overall, the regression for the underlying ARDL model fits well, as indicated by the F-stat and adjusted R-squared of 95 per cent. On the diagnostic tests, the result

displayed in Table 5 shows that the model passes all the diagnostic tests performed for serial correlation, functional form, normality and heteroscedasticity.

**Table 5. Result of Diagnostic Tests**

Test	Statistics	P-value
Serial Correlation: CHSQ(2)	0.8925	0.4303
Heteroscedasticity	1.0779	0.4359
F-statistics	47.3248	0.0000
R-squared	0.9750	
Adjusted R-squared	0/9544	

*Source: Author's Compilation via EVIEW 9*

## Conclusion

The stock market serves as a platform for raising and allocation of funds needed for investment, thereby creating opportunities for investors. Studies have shown that the stability of the stock market is necessary for economic growth of both developed and developing countries. However, the stock market has been known to be sensitive to economic conditions within which it operate. Therefore, macroeconomic conditions are expected to affect the development of the stock market. This paper examines macroeconomic determinants of stock market development for the period 1981 to 2016 in Nigeria. Using the autoregressive distributed lag (ARDL) approach, the short run and long run relationships between stock market development (market capitalization/GDP) and the selected macroeconomic variables which are economic growth (GDP), banking sector development (credit to private sector/GDP), savings rate (gross domestic savings/GDP), inflation rate, stock market liquidity (value of listed shares/GDP) and foreign direct investment (FDI/GDP) was analysed. The result of the study found out that in both the short run and long run, key macroeconomic determinants of stock market development in the context of the Nigerian Stock Exchange Market are banking sector development, stock market liquidity, foreign direct investment and to an extent the income level (GDP). While inflation rate which measures macroeconomic stability, and savings rate do not significantly explain stock market development. Overall, consistent with previous studies by Garcia and Liu (1999), Yartey (2008), Ita and Duke (2013) and Ho and Odhiambo (2017), the study was able to conclude that macroeconomic variables are positive and significant determinants of the stock market development in Nigeria except for inflation rate. The findings of the study suggest that the banking sector and the stock market complement each other in the short run but act as substitutes in the long run for investment financing. In addition, macroeconomic stability measured by inflation rate is a weak predictor of stock market development in both the short and long run. However, from the result of the study, it also shows that monetary policies by

the policy makers have not been able to promote and influence the use of equity financing effectively and efficiently. This can be seen from the result of the savings rate and macroeconomic stability measure which are not a significant determinant of the stock market development and income level which shows a weak significant relationship with stock market development.

Based on the empirical findings, policy makers should endeavor to provide policy framework that will promote the use of equity financing both in the short run and long run, as the role of the stock market in the development of the economy cannot be overemphasized. Furthermore, competitive incentive should be promoted in order to attract international investors to participate more in the stock market. Finally, policymakers of the country should strive to sustain the stability of the economy in order to promote the growth of stock market development in the short run and long run. This research paper examine macroeconomic determinant of stock market in Nigeria using annual data for the period 1981 to 2016. Further empirical analysis can be carried out on quarterly data and the impact of both macroeconomic and institutional factors on stock market development should be investigated as studies in this area in Nigeria are very few.

## References

- Acquah-Sam, E. (2016). Determinants of Capital Market Development in Ghana. *European Scientific Journal*, 12(1), pp. 251-270.
- Al-Mamun, M. (2013). The Effect of Macroeconomic & Market Specific Dynamics on Stock Market Development in Global Growth Generator Countries. *Asian Economic and Financial Review*, 3(9), pp. 1152-1169.
- Arodoye, N.L. (2012). An Econometric Analysis of the Impact of Macroeconomic Variables on Stock Prices in Nigeria: A Vector Autoregressive (VAR) Model Approach. *International Review of Business and Social Sciences*, 1(8), pp. 63-77.
- Ayunku, P.E. & Etale, L.M. (2015). *Determinants of Stock Market Development in Nigeria: A Cointegration Approach*. *Advances in Research*, 3(4), pp. 366-373.
- Bayar, Y. (2016). Macroeconomic Determinants of Stock Market Development: Evidence from Borsa Istanbul. *Financial Studies*, 1(1), pp. 70-89.
- Dev, K. & Shakeel, S.F. (2013). Determinants for the Growth of Stock Market. *JISR-MSSE*, 11(2), pp. 71-82.
- English, W.B. (1999). Inflation and financial sector size. *Journal of Monetary Economics*, 44, pp. 379-400.
- Garcia, V.F. & Liu, L. (1999). Macroeconomic Determinants of Stock Market Development. *Journal of Applied Economics*, 2(1), pp. 29-59.
- Ho, S.Y. (2017). The Macroeconomic Determinants of Stock Market Development: Evidence from South Africa. MPRA Paper No. 76493.
- Ho, S.Y. & Odhiambo, N.M. (2018). Analysing the Macroeconomic Drivers of Stock Market Development in the Philippines. *Cogent Economics & Finance*, 6(1), pp. 1-18.
- Hsing, Y. (2014). Impacts of Macroeconomic Factors on the Stock Market in Estonia. *Journal of Economics and Development Studies*, 2(2), pp. 23-31.
- Ita, J.J. & Joe, D. (2013). Macroeconomic Factors that Influence Stock Market Development in Nigeria. *International Journal of Business and Management Review*, 1(2), pp. 43-56.

- Kemboi, J.K. & Tarus, D.K. (2012). Macroeconomic Determinants of Stock Market Development in Emerging Markets: Evidence from Kenya. *Research Journal of Finance and Accounting*, 3(5), pp. 57-68.
- Levine, R. & Zervos, S. (1996). Stock Market Development and Long-Run Growth. *World Bank Economic Review*, 10(2), pp. 323-340.
- Levine, R. & Zervos, S. (1998). Stock Markets Banks and Economic Growth. *American Economic Review*, 88 (1), pp. 537-558.
- Malaolu, V.A.; Ogbuabor, J.E. & Orji, A. (2013). Determinants of Stock Price Movements in Nigeria: Evidence from Monetary Variables. *Journal of Economics and Sustainable Development*, 4 (14), pp. 61-66.
- Matadeen, S.J. (2017). The Macroeconomic Determinants of Stock Market Development from an African Perspective. *Theoretical Economics Letters*, 7(1), pp. 1950-1964.
- Muhammad, A.; Sonia, S. & Tayyaba, Z. (2017). The Impact of Macro-economic Determinants on Market Capitalization: An Empirical Analysis in Context of Pakistan. *The International Journal of Business & Management*, 5(4), pp. 185-191.
- Nikmanesh, L. & Nor, A.H.S.M. (2016). Macroeconomic Determinants of Stock Market Volatility: An Empirical Study of Malaysia and Indonesia. *Asian Academy of Management Journal*, 21(1), pp. 161-180.
- Okoro, C.O. (2017). Macroeconomic Factors and Stock Market Performance: Evidence from Nigeria. *International Journal of Social Sciences and Humanities Reviews*, 7(1), pp. 1-9.
- Owiredo, A.; Opong, M. & Asomaning, S.A. (2016). Macroeconomic Determinants of Stock Market Development in Ghana. *International Finance and Banking*, 3(2), pp. 33-48.
- Rahman, A.A.; Sidek, N.Z.M. & Tafri, F.H. (2009). Macroeconomic Determinants of Malaysian Stock Market. *African Journal of Business Management*, 3(3), pp. 095-106.
- Shadnan, Khan (2017). Macroeconomic Determinants of Stock market Development of South Asian Countries. A Research Thesis Submitted to the Department of Management & Social Sciences, Capital University of Science and Technology, Islamabad In Partial Fulfillment of the Requirements for the Degree of Master of Science in Management Science, Department Of Management Sciences, Faculty of Management & Social Sciences, Capital University of Science and Technology, Islamabad.
- Shrestha, P.K. & Subedi, B.R. (NRB). Determinants of Stock Market Performance in Nepal. *NRB Economic Review*, pp. 26-40.
- Su, D.T.; Bui, T.M.H. & Nguyen, V.B. (2016). Determinants of Stock Market Development: The Case of Developing Countries and Vietnam. *Journal of Economic Development*, 24(1), pp. 32-53.
- Sukruoglu, D. & Nalin, H.T. (2014). The Macroeconomic Determinants of Stock Market Development in Selected European Countries: Dynamic Panel Data Analysis. *International Journal of Economics and Finance*, 6(3), pp. 64-71.
- Yartey, C.A. (2008). The Determinants of Stock Market Development in Emerging Economies: Is South Africa Different? *IMF Working Paper*, WP/08/32, pp. 1-31.
- Zhou, J.; Zhao, H.; Belinga, T. & Gahe, Z.S.Y. (2015). Macroeconomic Determinants of Stock Market Development in Cameroon. *International Journal of Scientific and Research Publications*, 5 (1), pp. 1-11.