

Stock Exchange Market and Economic Growth Sustainability in Nigeria

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Abstract:

This study examined the relationship between stock market and economic growth sustainability in Nigeria. The study employed *Ex-post facto* design. Secondary data were obtained from Central bank of Nigeria Economic and Financial Review fact books, Principal Economic and Financial Indicators, Security and Exchange Commission market bulletins, covering thirty years (1992–2021). The study adopted an econometric method of Auto Regressive Distributed Lag (ARDL). The measurements of Stock Exchange Market were Market Capitalization Rate (MCR), Value of Trade (VOT), Interest Rate (INTR) and the surrogate for dependent variable was Real Gross Domestic Product (RGDP). The study revealed that the market capitalization rate, value of trade and interest rate contributed to the sustainable economic growth in Nigeria. The significant and positive relationship between variables of stock market and sustainable economic growth depicted a motivating symptom for economy to annex stock markets measures to enhance sustainable economic growth. The study concluded that without active and efficient stock market activities, the Nigerian economic growth may not be sustainable. It is suggested that an urgent step be taken by the regulatory authority in Nigeria to re-direct energy to monitor the implementation of stock market measurements for improved sustainable economic growth.

JEL Classification Code: G1, E24.

Keywords: Market capitalization rate, Value of trade, Interest rate, Gross domestic product and Sustainability

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Introduction

Stock exchange is an important part of global investment chain used to mobilize sufficient amount of resources needed to achieve sustainable development goals. It serves as a unique platform for promoting responsible business and good corporate governance. Stock exchange has historically played a significant role in sustaining economic growth by effective capital mobilization and allocation. However, in Nigeria, stock exchange market has generally transformed in structure, inter-connectedness and rate of activities over time. This has occurred through rising appreciation of un-sustainability of present economic growth path in both social and economic requisites. Sustainability advocates and others have identified stock exchanges and growing market structures as contributors to the problem and potential solution providers to the economic growth problems.

Economic growth sustainability is the proportion of growth that can be sustained without begetting other economic problems, importantly for future generations. There is a *trade-off* between rapid economic growth today and the future economic growth. It possible that today's rapid economic growth may deplete resources and lead to scarcity problems for the future generations. The periods of growth are mostly caused by increased aggregate demand, such as a rise in consumer spending; however sustainable economic growth leads to increased output.

The stock market sustains economic growth in the financial systems, and improves the resulting effect of the latter on sustainable economic growth. Yartey and Adjasi (2007), opine that the institution of stock markets in Africa is envisaged to improve domestic savings and enhance the quantity and quality of investments. Singh (1997) emphasizes that, in principle, the stock market is probable to stimulate sustainable economic growth through improved domestic savings thus boost the quantity and quality of investments.

Stock exchange is a major participant in the capital market and the most active of all the participating institutions. In the capital market, the action of the stock exchange is reflected by the stocks, that measures the extent of participation in the capital market. The major aim of the Nigerian Stock Exchange is for a company to create correct mechanisms for capital formation and provide efficient allocation of resources among competing alternatives as enunciated in the Memorandum of Association. It is also expected to provide special financing strategy for projects with long term gestation periods and, help to maintain financial discipline in the capital market as far as participants and investors are concerned. This will assist to broaden the share ownership in the market by providing an enabling environment to achieve and maintain fair prices for securities.

Nigerian Stock Exchange (2016), the superseding aim of any financial system is the provision of an atmosphere suitable for exchange of funds from the surplus sector of the economy to the deficit sector. The stock market embraces trading in both new (primary) and old (secondary) issue stocks. Security is classified into two namely Debt and Equity. Debt securities are federal government development stocks, industrial loans, preference stocks and bonds while equity securities are ordinary stocks that impose higher financial burden on the stock holders. However, in Africa, there is relatively few evidence substantiating the availability of theoretical projections of the impact of stock market on capital formation and investments. This situation has affected the perception of public opinion towards accepting the claim that developing African economies have not benefited from the massive growth recorded by the stock markets over the years.

The Capital market is notorious for a number of market failures, such as asymmetric information. Asymmetric information is a situation where one party to a transaction is less informed about the market situations than the other party. Olabisi, Kajola, Adeleke, and Gazal,

(2020) observed that the commonness of this observable fact significantly suppresses the efficiency of financial markets as mechanisms for resources allocation. The geographical and cultural distance makes difficult the attainment of information dissemination among the market participants, as asymmetric information is rampant globally. Whereas the uprising in information asymmetric are subsiding but not eliminated. Information asymmetric is prone to quick investors' reactions, erratic market schedule and financial crisis that may occur when information is imperfect and financial markets perform unsteadily (Eichengreen & Musa 2015). Thus, where the market information is not perfect and complete, investors are likely to act on speculations to rush in and out of the markets. This important responsibility for sustainable economic growth is undertaken by the capital market in consonance with the aims and objectives of Nigeria Stock Exchange (NSE). Nigerian Stock Exchange market establishes the stock markets for the exchange of securities. Upon this background, this study examines the impact of stock market on sustainable economic growth in Nigeria. The specific objectives are to:

- i. assess the impact of interest rate on sustainable economic growth in Nigeria;
- ii. evaluate the impact of value of trade on sustainable economic growth in Nigeria; and
- iii. evaluate the impact of market capitalization rate on sustainable economic growth in Nigeria.

The study of Nigerian stock exchange market is justifiable based on the unpredictable market capitalization and movements in key market indicators such as interest rate, value of traded securities, as well as market capitalization rate. The significance of an efficient and well-functioning stock market in spurring sustainable economic growth has been emphasized in literature. Hence, there is a need to establish empirical link between stock market and sustainable economy growth so as to provide quantitative information that ascertains the true position of stock market as a true sustenance of economic growth in Nigerian. The finding of the study will assist the government and policy makers to fine-tune stock market policies that sustain economic growth in Nigeria.

LITERATURE REVIEW

2.1 Conceptual Review

Sharpe (1999), stock market deals with transaction of financial assets with life span of more than one year. Financial assets are in different forms such as long term government bonds, ordinary shares of companies. Stock market is a market where shares of various listed companies are traded with two forms of shares trading activity. The primary market is the first situation where the issuing company makes new offers to the public; whereas the secondary issue is a situation where already issued shares of firms are traded among investors in the market. Resulting from this, it is submitted that the growth of the stock market has become one of the barometers used to measure overall sustainable economic growth of a nation.

It is generally believed that the stock market accelerates sustainable economic growth, by enhancing domestic savings, the quantity and quality of investment. The Nigerian stock market provides the essential oil that powers the economy. It does not only provide the required funds for investment but also allocates efficiently those funds provided to worthy projects that maximize shareholders' wealth. The Nigerian stock market was formed to surmount the difficulties of selling government stock, provide local opportunities and long term lending purpose, to enable authorities mobilize long term capital for sustainable economic growth (Nigerian Stock Exchange, 2016).

2.2 Theoretical Review

Various theories on stock market and sustainable economic growth are available. However **Efficient Market Hypothesis (EMH) and** Rational Expectation theory propounded by an American economist John F. Muth in 1961 and popularized by economists Robert Lucas and T. Sargent in the 1970s underpinned the study.

The Rational Expectation theory was used to explain stock market and economic growth sustainability and the theory is premised on the assumptions that: with rational expectations, people learn from mistakes of the past; people use all the available information and economic theories to make rational decisions and hence forecasts are unbiased, and people understand how the economy works and how government policies affect macroeconomic variables such as price level, unemployment and aggregate output.

The rational expectations theory proposed weak and strong versions. According to the rational expectations theory the “strong” edition holds the belief that, every participant in the market has access to all the available information in the market and based on the available information, the participant is able to take rational decisions while the “weak” assumes that participants do not have time to access all the relevant information in the market before taking decisions, hence make decisions based on limited information.

The rational expectations theory further explain that the actors in an economy will act in a way that conforms to logical expectation of the future. That is, a market participant will invest or spend money on the strength of what he or she rationally expects to happen in the future. However, this theory is quite important to economics, its application is doubtful in the real sense. For example, if investor speculates that the value of a particular stock will rise, and therefore rush to buy it; this speculation will actually make the stock value to go up. The same transaction can be framed outside a rational expectations theory. An investor observes that a particular stock is undervalued, then buys it and keeps it, and watches as other investors take the same steps, thus this pushes up the price to proper market value. This is the problem with Nigerian stock market trying to refurbish market confidence since after the global financial melt-down. Nigerian investors are generally pessimistic; hence the market is exhausted regardless of the innovations introduced by the regulatory authorities and the Nigerian stock exchange.

Efficient Market Hypothesis (EMH) and Stock Exchange Market

Fama (1970) posited that, the intellectual supremacy of efficient market hypothesis had become less widespread at the beginning of the twenty-first century. He argued that several financial economists and statisticians started to have belief that stock prices were at least partly foreseeable. Campbell, and Robert (1988), observed an emergence of a new class of economists’ that emphasized psychological and behavioural elements of stock-price determination. They concluded that future stock prices are slightly predictable based on previous stock price patterns coupled with certain “fundamental” valuation metrics. Furthermore, various economists even made a far more controversial claim that the predictable patterns allow investors to receive extra risk-adjusted rates of return (Cooper, Michael, Orlin & Rau 2001).

Efficient Market Hypothesis believes that the prices of all publicly traded assets including all publicly quoted companies have adequate information about the market. The implication is that no market participant can possibly make profit by simply guessing the price movement of the asset. The two assertions comprise market efficiency (Malkiel, 1973). The effect is that any investor who makes trading decisions based on publicly available information will never

outperform the market over time. Market efficiency describes the precision with which prices reflect existing information (Fama, 1970). The efficient markets hypothesis (EMH) argues that markets are efficient, leaving no room to make excess profits by investing since everything is fairly priced. This implies a slight hope of beating the market, although one can match market returns through passive index investing.

Malkiel, (1973) asserted that securities markets were extraordinarily efficient in providing relevant information concerning separate stocks and stock market in its entirety. The accepted belief was that when information is available, the news about its availability blowouts very rapidly and is immediately built-in the prices of securities. Therefore, it is believed that neither fundamental analysis, which is the analysis of financial information such as company earnings, asset values to help investors select “undervalued” stocks nor technical analysis, which is the study of past stock prices in an attempt to predict future prices help investors to achieve returns higher than what they could have obtained by randomly selected portfolio of individual stocks with comparable risk (Fama, 1970).

2.3 Previous Studies

Pan and Mishra (2016) examined stock market and economic growth and development in China. The study adopted ARDL method. The study found that the crisis in the global financial market had a significant impact on real and financial sector in China. The findings further revealed a long run negative association between the market share and the real sector of the economy. Though, the extent of the impact was not significant. In addition, the Toda Yamamoto’s causality test revealed an evidence of a demand driven hypothesis of economic growth supporting the development of stock market in China.

Mishra (2010) examined the impact of stock market efficiency on India economic growth. The study adopted time series data collected on relevant variables namely market capitalization rate, total market turnover and value of stock over a period of twenty years covering first quarter of 1991 to the first quarter of 2010. The study established a linkage between stock market efficiency and economic growth in India. The relationship was established between stock market efficiency, value of trade and market capitalization rate with total market turnover. The wide range of the stock market as measured by market capitalization rate is positively associated with the capacity to muster capital and diversify the economy.

Adjasi and Biekpe (2008) assessed the effect of stock market development on economic growth in 14 African countries. The study found a positive relationship between the variables, indicating that a stock market development contributed to economic growth. The study suggested that low income African countries and less developed stock markets should grow and develop their markets to bring forth economic gains from stock markets.

Owusu (2016) examined the relationship that exists between stock market development and sustainable economic growth in Nigeria. The study adopted Auto-Regressive Distributed Lag (ARDL)-bounds testing approach with combined stock market indicators index. The study found that stock markets have negative and mixed effect on economic growth, in the long run. The result was in line with previous studies that have reported mixed and inconclusive findings in the subject area. The study concluded that, there should be an increased financial deepening and elimination of obstacles in the financial sectors of the economy by injecting additional public and institutional enlightenment on the importance of stock markets to enhance economic development.

Ezenduka and Joseph (2020) examined the relationship that exists between stock market performance and economic growth in Nigeria. The study employed *ex post facto* research design. The study extracted secondary data from Central Bank of Nigeria (CBN) and Securities and Exchange Commission Statistical Bulletins. The study covered a period of 1985 to 2018. Inferential and descriptive statistics analysis was conducted. Cointegration test revealed an existence of long-run equilibrium bond between Credit to Private Sector (CPSR), Money Supply (M2R), Number of Securities Listed (NSL), Market Capitalization Ratio (MCR), Turnover Ratio (TOR) and Economic Growth (GDP) in Nigeria, while there was absence of long run equilibrium relationship between All Share Index (ASI) and Monetary Policy Rate (MPR). The findings revealed a significant relationship between TOR, MCR, NSL and GDP in Nigeria. Additional findings revealed that All Share Index has no significant influence on Gross Domestic Product. The study established a significant relationship between stock market performance and economic growth in Nigeria. Therefore, the study recommended an improved trading in stocks by motivating companies and securities stocks to be listed for additional equity capitalization.

Adam and Sanni (2005) examined the role of stock market on Nigerian economic growth using Granger causality test and regression analysis. The study discovered a one-way causality between market capitalization and gross domestic product and a two-way causality between growth and market turnover. The study also found a positive and significant relationship between market turnover and gross domestic product.

Research methods and procedure

The study collected time series data over a period of thirty (1989-2018) years. The relevant explanatory variables were indices of ordinary shares listed on the Nigerian stock market. The study elicited data from various editors of the various issues of Central bank of Nigeria Economic and Financial Review, Annual Reports and Statements of Accounts, Principal economic and Financial Indicators, Security and Exchange Commission market bulletins and the Nigerian Stock Exchange fact books, Central Bank of Nigeria Statistical Bulletin and publications of the Nigerian Stock Exchange. Auto Regressive Distributive Lag Technique was adopted for analysis. The study adopted this method because of three major reasons. Firstly, the bounds test is a simple technique that allows co-integration relationship to be estimated by OLS immediately the lag order of the model is known. Secondly, pre-test such as unit root is not required for the adoption of the bound testing approach. Lastly, the long-run and short run parameters of the models can be simultaneously estimated. As a result, Autoregressive Distributed Lag (ARDL) bound test proposed by Pearsan and Shin, (2001) was used to assess the relationship between stock market and sustainable economic growth in Nigeria from 1989 to 2018.

Model Specification

The specified model revealed an investigation of impact of stock market on Nigerian sustainable economic growth. The explanatory variable (Stock Market) was measured with Interest Rate (INTR), Value of Trade (VOT) and Market Capitalization Rate (MCR) while the surrogate for Sustainable Economic Growth is real Gross Domestic Product (RGDP). Hence, the functional model of the study is stated as follows:

$$RGDP = f (INTR + VOT + MCR) \dots\dots\dots 3.1$$

Where;

RGDP =Real Gross Domestic Product

INTR = Interest Rate

VOT = Value of Trade

MCR= Market Capitalization Rate

B₀ = Intercept

B₁ = Effect of Interest Rate

B₂ = Effect of Value of Trade

B₃= Effect of Market Capitalization Rate

β₁, β₂, β₃, = Coefficient of INTR, VOT and MCR respectively.

e= Error term

$$RGDP_{it} = \beta_0 + \beta_1 INTR_{it} + \beta_2 VOT_{it} + \beta_3 MCR_{it} + e_{it} \text{-----} 3.2$$

The following criteria were adopted in the evaluation of the regression result:

The *a-priori* expectation for this study is possible positive relationship between the dependent variable and the explanatory variables. The *a-priori* sign and magnitude of the co-efficient were used to assess the results and test the assumptions of the auto regressive distributive lag method.

Consequently, the techniques for evaluating the results of the study were standard criteria: R² (adjusted R² for degrees of freedom) for testing goodness of fit of the estimated regression equation; F-ratio for testing the significance of the regression co-efficient; (Durbin Watson) for testing the randomness of residuals.

Measurement of Variables

Real Gross Domestic Product (RGDP) is a macroeconomic measure of the value of economic output adjusted for price changes (i.e. inflation or deflation). The modification transforms the money-value measure, nominal GDP, into an index for quantity of total output. Though, GDP is total output, it was used because it closely approximated the total spending: the sum of consumer spending, investments by industry, excess of exports over imports, and government spending.

Interest Rate (INTR) measures the price that equates the supply of credit or savings plus the net increase in the amount of money in the period, to the demand for credit or investment plus net sign in the period. Thus, an interest rate is the credit price, like other prices determined by the forces of demand and supply; therefore, the demand and supply of loan able funds.

Value of Traded (VOT) is the turnover ratio throughout the period divided by the average market capitalization of the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period. The value of shares traded is the total number of shares traded (domestic and foreign), multiplied by their respective matching prices. Figures are single counted (only one side of the transaction is considered).

Market Capitalization Rate (MCR) this is the market value of a publicly traded company's outstanding shares. Market capitalization rate is the share price multiplied by the number of outstanding shares. As outstanding stock is bought and sold in public markets, capitalization is an indicator of public perception of a company's net worth and a determining factor in stock valuation.

Estimation Techniques

The study employed multiple regression analysis with ARDL econometric technique for data analysis to verify whether a significant positive relationship exist between the dependent and independent variables. The tests were conducted on each of the variables to confirm the level of stationarity. The estimated parameters were subjected to appraisal through statistical tests namely; t-statistic and f-statistic tests. The absolute stationarity of the specified empirical model was tested using multiple co-efficient of determination (R^2), adjusted R^2 and Durbin- Watson test.

Research Hypotheses

The study assessed the impact of the Nigerian Stock Market on Nigerian economic growth. Thus, the following hypotheses were formulated and empirically tested:

- i. H_{01} : There is no significant relationship between interest rate and sustainable economic growth in Nigeria
- ii. H_{02} : There is no significant relationship between value of stock traded and sustainable economic growth in Nigeria
- iii. H_{03} : Market capitalization Rate does not significantly affect sustainable economic growth in Nigeria

Research findings - results

This section focused on the analysis of the data, estimation and interpretation of the results obtained from the regression of the specified models. This was necessary to ascertain whether the outcome of the regression analysis fell in line or otherwise with the stated hypotheses as well as provide answers to the research questions to achieve the objectives of the research.

Descriptive Statistics

The values of standard deviation revealed the extent of dispersal of observed variables or cluster around individual means. It was observed from the statistical results that most of the variables dispersed much from their average values.

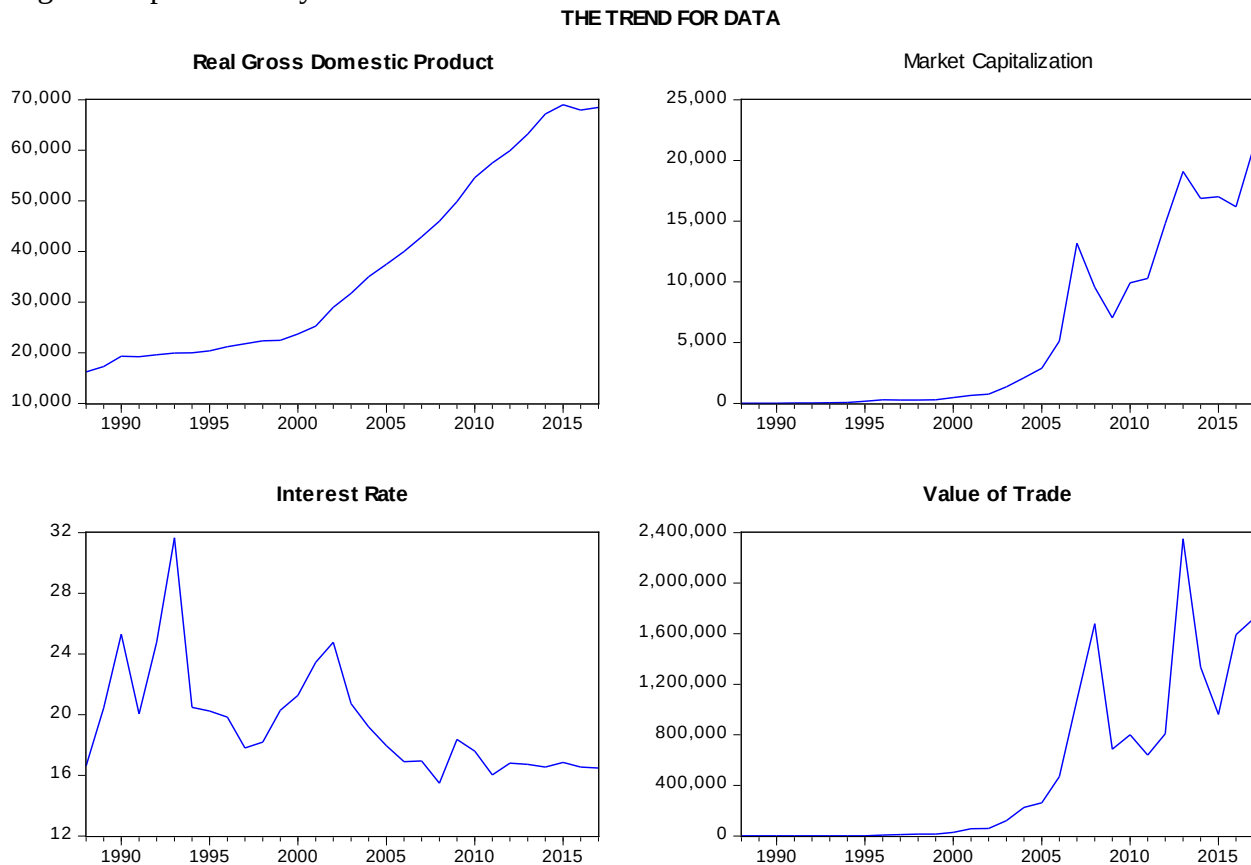
Table 1: Descriptive Statistics of Data Series

	RGDP	MCR	VOT	INTR
Mean	10.30053	6.261430	18.78259	10.22699
Median	10.10501	6.326817	18.06625	10.60407
Maximum	11.14221	9.856260	31.65000	14.67030
Minimum	9.612728	1.223775	9.433333	5.417817
Std.dev	0.513522	2.835815	4.282080	3.289673
Skewness	0.348249	-0.242656	0.514196	-0.142354
Kurtosis	1.670367	1.695511	4.644666	1.444397
Jarque-bera	3.004046	2.582962	5.016687	3.334614
Probability	0.222679	0.274863	0.081403	0.188755
Sum	329.6171	200.3658	601.0429	327.2636
Sum of square	8.174846	249.2973	586.4226	335.4805
Observation	30	30	30	30

Source: Author's Computation (2021)

The table revealed that the skewness statistics whose threshold value for symmetry (or normal distribution) was zero, only the Value of Trade (VOT) has a skewness of zero approximate i.e normally distributed. The MCR was negatively skewed; RGDP and INTR were positively skewed. On the other hand, the kurtosis whose threshold is 3 to be Mesokurtic i.e normal peakedness showed that none of the variables was Mesokurtic. The INTR, RGDP and MCR were leptokurtic i.e highly peaked; while VOT was platykurtic (lowly peaked). Although skewness statistics indicated that most of the variables were positively skewed (greater than zero) and kurtosis value indicated that none of the variables had a normal peakedness. The fact remains that neither skewness nor kurtosis singularly confirmed the normality of a series. Hence, since the Jarque-Bera statistics combined skewness and kurtosis properties, it provided more comprehensive information. The Jarque – Bera statistics revealed that all the series used in the model had a Jarque-Bera probability value of more than 5%. This suggested that we cannot reject the alternative hypothesis of a normally distributed series.

Fig. 1: Graphical Analysis



Source: Author's Computation (2021)

Graphical Analysis

The graphical illustration showed the movements, trends, fluctuation, structural breaks and discontinuities in the series. The figures showed the graphical expression of relevant variables. The trends of the selected variables were shown in table fig.1. The graphical series of Real GDP

appeared to keep increasing over the years though relatively unstable and with some cyclical fluctuations over the years under consideration. The minimum value of 16215 billion was recorded in 1988 and 69024 billion was recorded as the maximum value in 2015. More so, the graph for Market Capitalization appeared to have a high level of cyclical fluctuations over the years with a minimum value of 10 billion in 1988 and a maximum value of 21128 billion was recorded in the year 2017. Similarly, the data trend for Interest Rate appeared to be cyclically fluctuating over the years with a minimum value of 15.5 in 2008 and a maximum value of 31.6 percent in 1993. The data trend for Value of Trade also followed the same data trend characteristics with a minimum value of 610 billion in 1989 and a maximum value of 2350875.7billion in 2013.

Table 2: Unit Root Test

Variables	Table 4.2 – Augmented Dickey – Fuller (ADF) Test						I (d)
	Level			First difference			
	Model I	Model II	Model III	Model I	Model II	Model III	
RGDP	-----	-----	-----	-2.7956*, ^a	-2.5782 ^a	-1.6169*, ^a	I (1)
MCP	-----	-----	-----	-4.1790***, ^a	-4.4166***, ^a	-2.9517** ^a	I (1)
VOT	-----	-----	-----	-4.8803***, ^a	-4.7891***, ^a	-4.1044***, ^a	I (1)
INT	-2.9715**, ^a	-----	-----	-4.8430***, ^a	-5.0784***, ^a	-4.9255***, ^a	

Source: Author's Computation (2021)

Unit Root Test

The study performed a unit root test on the series. The test revealed a stationarity of the series adopted as model estimation. The unit root manifests a unit process when series are not stationary. The stationarity was confirmed to prevent the model from being spurious and misleading and thereby suitable for forecast. This is because stationary variables feature cannot change as time progresses. Thus, the variables of this study do not exhibit unit root and can be used for conventional modeling.

Table 2 presented the ADF unit root test results. From the ADF results, all variables were stationary after first differencing except for INTR which was stationary at level only with intercept considering all test options (Constant – Model I, Constant and trend – Model II, without constant and trend – Model III). Real Gross Domestic Product (RGDP), Stock Market Capitalization (MCR) Value of Trade (VOT) and Interest Rate (INTR) were not all stationary in their level form. The last column titled “I (d)” in the above tables concluded on the order of integration of the variables. Conclusively, all variables were integrated of different order i.e I (0) and I (1). These results implied that running a regression analysis on these variables in their levels using Ordinary Least Square technique can generate spurious results as some of the Traditional Least Square assumptions have been violated. Therefore, the study adopted Autoregressive Distributed Lag (ARDL) Model as it accommodates variables with different level of integration, first order of integration and any abnormality in the data series provided that they are normally distributed.

Table 3: Lag length structure for the dependent variable (RGDP)

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-18.60849	NA	0.237583	1.400606	1.448185	1.415152
1	53.53496	133.9807	0.001476	-3.681069	-3.585911	-3.651978
2	57.68344	7.407989*	0.001179*	-3.905960*	-3.763224*	-3.862324*
3	57.94843	0.454267	0.001244	-3.853459	-3.663144	-3.795278
4	58.64115	1.138043	0.001274	-3.831511	-3.593617	-3.758784

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (at 5% level)

Source: Author's computation (2021)

Optimum Lag Length

According to AIC, SC and HQ, based on the result given in table 3, the optimum lag length for SMEL is 2 lag period. This implies that in the proposed Panel ARDL equation, a lag length of two was used for SME in the model equation.

Table 4: Lag Length Structure for the Independent variables

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-149.3945	NA	10.71649	10.88532	11.02806	10.92896
1	-79.98280	118.9915*	0.144060	6.570200	7.141145*	6.744744*
2	-70.14190	14.76136	0.139315	6.510136	7.509289	6.815587
3	-63.15390	8.984570	0.171874	6.653850	8.081212	7.090209
4	-49.35554	14.78395	0.139224*	6.311110*	8.166681	6.878377

Source: Author's computation (2020)

Optimum Lag Length for the Independent Variables

Based on the results in table 4, the FPE and AIC optimum lag length for the explanatory variable (MCP, VOT and INTR) is 4. This showed that in the proposed Panel ARDL equation, an optimal lag length of four was used for MPC, VOT and INT in the equation.

Table 5: Bound Co-integration Test Result

F-statistic	10.28655	3
Bonds Critical Value		
Sig level	I0 Bound	I1 Bound
10%	2.71	3.76
5%	3.22	4.34
2.5%	3.66	4.87
1%	4.25	5.59

Null Hypothesis: No long-run relationships exist

Source: Author's computation (2021)

ARDL Bound Co-Integration Tests Result

Observing the ARDL Bound test result in table 5, the value of F-statistic test was higher than the upper bound level at 1% level of significance. This showed that the results of ARDL bound co-integration test established the presence of long run relationship among the variables adopted in the model. Therefore, the short run and long run ARDL model was estimated to ascertain the magnitude of the effect of stock exchange on sustainable economic growth in Nigeria.

Co-Integration Test

The result of the tests established that not all the variables were stationary at level; therefore a need to check for existence of similar trend properties among the series as a regression model on co-integrated series. Thus, the Pesaran Bounds test that allows the combination of fractionally integrated variables used done i.e. combining variables of different orders of integration. This detects if there is long run equilibrium among the variables, since it has been established that all variables were not stationary at level form until differenced, which indicated that the mean of most of the variables varied overtime.

Table 6: Short run result Dependent variable: D (RGDP)

variable	Coefficient	Standard error	prob.
D(MCR)	0.032378	0.21618	0.1550
D(MCR(-1))	0.049673	0.21170	0.0331**
D(MCR(-2))	-0.002860	0.21560	0.8962
D(MCR(-3))	0.052922	0.024229	0.0452**
D(VOT)	-0.027799	0.019058	0.1653
D(VOT(-1))	0.030311	0.013884	0.0453**
D(VOT(-2))	-0.0256660	0.016309	0.1365
C	1.517284	0.592315	0.0217***
MCR(-1)	-0.011361	0.22153	0.6155
VOT(-1)	0.042954	0.011677	0.0022***
INT(-1)	0.001679	0.001697	0.3380
RGDP(-1)	-0.181590	0.064131	0.0126**

* ** *** indicate significance at 10%, 5% and 1% critical level respectively

Source: Author's Computation (2021)

The Short-Run ARDL Model Result Interpretation

Table 6 revealed the short run ARDL result of the adopted model. It showed the effect of the activities of the Nigeria Stock Exchange Markets on the level of sustainable economic growth in Nigeria. Market Capitalization Rate (MCR), Value of Trade (VOT) and Interest Rate (INR) were proxies for Nigeria Stock Exchange Market while Real Gross Domestic Product (RGDP) was the surrogate for the level of sustainable economic growth. The result showed that in the short run, D (MCR (-1)), D (MCR (-3)) and VOT (-1) were significantly and positively affect Real GDP while D (VOT (-1)), D (VOT (-3)) and RGDP (-1) had a significant negative relationship with Real GDP.

It therefore follows that at 5% level of significant, a percent increase (decrease) in D(MPC(-1), D(MCR(-3)) and VOT(-1) will make Real GDP to increase (decrease) by 0.04%, 0.05% and 0.04% respectively while holding the effect of all other repressors in the model constant. On the contrary, in the short run, D (VOT (-1)), D (VOT (-3)) and RGDP (-1) had a significant and negative relationship with Real GDP. Therefore, a percent increase (decrease) in D (VOT (-1)), D (VOT (-3)) and RGDP (-1) will make Real GDP to decrease (increase) by 0.03%, 0.03% and 0.18% percent respectively. Finally, at 1% level of significance, the F-statistic confirmed the overall significance of the model. While the result of the adjusted R^2 showed that in short run, 63% of the total variation in Real GDP was explainable by the repressors used in the model.

Long run result

Table 7: ARDL Model (2,4,4,4) Dependent variable: D(RGDP)

Variable	Coefficient	Standard error	Prob.
RGDP(-1)	0.84768	0.06322	0.000***
MCR	0.03058	0.02111	0.1681
MCR(-1)	0.0168	0.02961	0.5788
MCR(-2)	-0.0595	0.02975	0.0640*
MCR(-3)	0.04335	0.03269	0.2047
MCR(-4)	-0.442	0.02252	0.0685*
VOT	-0.0263	0.0184	0.1729
VOT(-1)	0.03679	0.0166	0.0426**
VOT(-2)	0.1246	0.01624	0.4548
VOT(-3)	-0.0112	-0.0159	0.5345
VOT(-4)	0.02809	0.0142	0.0665*
INT	0.00285	0.00219	0.2137
C	1.21683	0.6059	0.0630

* ** *** indicate significance at 10%, 5% and 1% critical level respectively.

Source: Author's Computation (2021)

Table 7 revealed the short run ARDL result of our model. It showed the effect of the activities of the Nigeria Stock Exchange Markets on sustainable economic growth in Nigeria. It followed that in the Long run, when the effect of other repressors were held constant, at 1%,5% and 10% respective alpha level, a percent increase (decrease) in RGDP(-1), VOT(-1) and VOT(-4) will make Real GDP to increase (decrease) by 0.84%, 0.03% and 0.02% respectively. Finally, at 1% level of significance, the F-statistic confirmed the overall significance of the model while the result of the adjusted R^2 showed that in short run, 81.0% of the total variation Real GDP was explained by the explanatory variable showing a high level of fitness.

DISCUSSION OF FINDINGS

The study examined the impact of Stock Market on sustainable economic growth in Nigeria. Market Capitalization Rate (MCR), Interest Rate (INR) and Value of Trade (VOT) were proxies for the Nigeria Stock Exchange Market while Real Gross Domestic Product (RGDP) was used as a surrogate for sustainable economic growth. Having estimated the short-run ARDL model, it was required to verify whether the estimated model follows the ARDL diagnosis test for normality.

The Jarque-Bera test suggested that the residuals were normally distributed since the probability values were greater than 5% level of significance. Hence, the hypothesis of normal distribution for the residuals cannot be rejected. In the short run, the activities of the Nigeria Stock Exchange Markets positively affected the level of sustainable economic Growth in Nigeria. The study revealed that the Nigerian stock market has impacted on sustainable economic growth via market capitalization rate, value of trade and interest rate as revealed by the regression results. This study was in agreement with Ezenduka and Joseph (2020) whose findings revealed an existence of long-run equilibrium bond between Credit to Private Sector (CPSR), Money Supply (M2R), Number of Securities Listed (NSL), Market Capitalization Ratio (MCR), Turnover Ratio (TOR) and Economic Growth (GDP) in Nigeria. Similarly the study of Owusu (2016) supported the findings of this study by revealing that stock markets have negative and mixed effect on economic growth, in the long run. The result supported previous studies that have reported mixed and inconclusive findings in the subject area as it showed a significant relationship between TOR, MCR, NSL and GDP in Nigeria. The study established a significant relationship between stock market performance and economic growth in Nigeria. The result of the study was in line with the study of Pan and Mishra (2016), but contrary to the study of Adam and Sanni (2008). For example, Mishra (2010) found a positive relation between stock market efficiency and market capitalization rate with market turnover while Pan and Mishra (2016) and Adjasi and Biekpe (2008) found a long run negative association between the market share and the real sector of the economy.

Conclusion and recommendations

The resulting conclusion arose after the ARDL regression analysis revealed that a stock market has been pivotal financial market, justifying the effort of successive governments in the country at designing policies aimed at improving stock market as a tool for economic growth. The value of trade does not impact significantly on the GDP as given by the regression results. The government is therefore advised to put up measures to stem up investors' confidence and activities in the market, so that it can contribute significantly to the Nigerian economy. Hence, the stock market remains one of the mainstreams in Nigeria that has influenced on Nigerian economy. Therefore the Nigeria Stock Exchange Market should set up a mechanism for reaching out to viable enterprises in the economy to increase its trade value as it is clear from this study that the Nigeria Stock Exchange Market has the potential to drive the economy. In addition, the Nigeria Stock Exchange Market should create an enabling environment for easy enlisting of firms in order to influence the value of total Market Capitalization Rate to drive the level of economic growth forward.

SUGGESTION FOR FURTHER STUDIES

The study suggested that further study should be undertaken to examine strategies to increase financial deepening and elimination of obstacles in the financial sectors of the economy. Also, more studies should be carried out to investigate how improved stock trading through the motivation of companies and securities stocks could enhance additional equity capitalization. Further studies should also identify various ways Nigeria Stock Exchange Market can create an enabling environment for easy enlisting of firms to influence the value of total Market Capitalization Rate to drive the level of economic growth forward.

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