

STOCK MARKET DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL ANALYSIS

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Abstract

This study adopts Augmented Dickey-fuller techniques to investigate the relationship between stock market development and economic growth, using annual time series data for Nigeria over the period 1986 to 2017, vis-à-vis econometric techniques such as unit root test, cointegration test and Granger causality test. The results show that there is a long-run relationship among variables used in this study. These findings also lead to acceptance of the hypothesis that stock market- Led economic growth. Furthermore, the results obtained from Granger causality test show that causality runs from stock market to economic growth. Moreover, the result reveals evidence of uni-directional relationship. The following policy measures are suggested among others that Nigeria should remove impediments to stock market development such as tax, legal and regulatory barriers. In addition there should be sustained effort to stimulate productivity in both the public and private sectors. This will lead to improve investment and stimulate growth.

Key words: Stock market development, economic growth, granger causality, Nigeria

Introduction

In recent times the increasing importance of financial markets across the world has reinforced the general conviction that finance is an important element of economic growth. As such, mobilization of resource for national development has long been the central focus of development economists. The stock market is an economic institution which promotes efficiency in capital formation and allocation; it enables governments and industries to raise long-term capital for financing new projects, expanding and modernizing industrial/commercial concern. If capital resources are not provided to those economic areas, especially in industries where demand is growing and which are capable of increasing production and productivity, the rate of expansion of the economy often suffers. As noted by Abubakar (2016) the stock market is an economic institution which promotes efficiency in capital formation and allocation. The determination of the overall growth of an economy depends on how efficiently the stock market performs it's a locative function of capital. It has been argued that most Nigeria business lack long term capital, this is so as the business sector in Nigeria has been relying on short term financing such as overdraft to finance even long term capital. Based on the maturity marching concept is such financing becomes risky (Atoyebi, Ishola, S. Ademola, Kadiri Adegunjo, O. Ogundeji M. 2013).

Based on the performance of capital market in accelerating economic growth, government of most nations tends to have keen interest in its performance. The concern

is for sustained confidence in the market and for a strong investor's protection arrangement. Economic growth is generally agreed to indicate development economy, because it transforms a country from a five percent saver to a fifteen percent saver. Thus it is argued that for capital market to contribute or impact on the economic growth in Nigeria, it must operate efficiently (Atoyebi et al 2013). A number of studies have been conducted in an effort to relate the role of the stock market in the growth process. Moreover, despite a number of cross-country analysis the literature has suggested a strong correlation between stock market performance and economic growth. Nowbusting and Odit, (2009); Nieuwerburgh et al (2006). Some other studies find no meaningful empirical evidence to support such conclusions (Atje and Jovanovic (1993). In view of the above the paper is therefore structure as follows: following the introduction is section 2, which presents the literature review and theoretical background, section 3 presents methodology and data analysis while section 4 contain the interpretation of results and empirical findings. The last section presents concluding remarks and policy recommendations.

Objectives

The objective of this study is to investigate the relationship between stock market development and economic growth in Nigeria. In veiw of the above therefore the relevant research question this study undertakes to pursue are:

Is there any long-run relationship between stock market development and economic growth?

What is the direction of the relationship between stock market and economic growth?

An overview of Stock Market Developments in Nigeria

The capital market is cornerstone of every financial system since it provides the funds needed for financing not only business and other economic institutions, but also the programme of government as whole (Alajekwu 2012). The proper function of the capital market in Nigeria was not set up until the establishment of Central Bank in 1959 and launching of Lagos stock exchange in 1961 even though securities were floated as far back as 1946. The Nigerian stock market was established in 1961 as the Lagos Stock Exchange. It became the Nigerian Stock Exchange (NSE) in 1977 with branches established in different parts of the country. At the end of 1999, there were six branches: Kaduna, Port Harcourt, Kano, Onitsha, Ibadan and Lagos, which also serves as the head office of the exchange. Each branch has its own trading floor. The stock exchange creates two markets where companies can raise capital. This is often referred to as the primary market, where shares are issued to the public for the first time and shareholders can trade in shares of listed companies. This is referred to as the secondary market. In this market, shareholders buy and sell existing shares (Owusu 2016).The Nigerian stock Exchange has witnessed tremendous evolution since its establishment in 1961. These developments can be seen in the increasing number of capital market instruments traded in the exchange, the increase in market operators, and the tremendous increase in the size of market capitalization. From less than ten

stocks at inception the number has risen to more than 200 in 2005 (Sanda et al 2010). This is as a result, of deregulation of the financial sector and the privatization exercises, which exposed investors and companies to the significance of stock market.

Literature Review

A number of studies have been carried out on the link between stock market development and economic growth. One of the early studies which examined the role of stock market development in economic growth process was by Atje and Jovanovic (1993) present a cross country study of stock market and economic growth over the period 1980-1988. They found a significant correlation between average economic growth and stock market capitalization for 40 countries. In a similar study Levine and Zervos (1998), employing data on 47 countries from 1976 through 1993, found that measures of stock market liquidity are strongly related to growth. Similarly, Harris (1998) re-examined the empirical relationship between stock market and economic growth using appropriate instruments for investment. In contrast to Atje and Jovanovic (1993), he found no hard evidence that the level of stock market activity helps to explain growth in per capita output.

Furthermore, some studies in the literature are country specific while others target panel data base on group of countries or regions. However, Howello and Soliman (2005) based on endogenous growth model study the linkage between stock market, investment and economic growth using vector auto regressive (VAR) framework. They use quarterly data covering the period 1971 to 1998, for four countries: Chile, South Korea, Malaysia and the Philippines. The finding indicates that the causality between stock market development and economic growth is significant.

Nazir et al (2010) investigate the relationship between stock market development and economic growth in Pakistan using annual time series data over the period 1986 to 2008. By using augmented Dickey-Fuller (ADF) test the authors show a strong bi-directional causality between stock market development and economic growth.

Osinubi and Diwe (2003), using Nigerian data, provided some dissenting evidence that stock market development had no significant effect on economic growth in Nigeria during the period 1980 to 2000. Applying (VAR) model, the authors found that the Nigerian stock market was unable to make significant contribution to rapid economic growth. Analyzing the impact of the Nigerian capital market on her socio-economic development, Donwa and Odia (2010) use OLS on annual time series data for the period 1981 to 2008, and found that capital market indices have no significant effect on the economic growth. Adigwe et al (2015) examined the effect of stock market development on Nigeria's economic growth by using OLS econometric techniques in which variation in economic growth was regressed on market capitalization ratio to GDP, value of stock traded ratio to GDP, trade openness and inflation rate. The authors found that stock market has the potentials of growth inducing, but has not contributed meaningfully to Nigerian economic growth, since only 26.5% variations in economic growth were explained by the stock market

development variables.

Theoretical framework

According to Greenwood and Jovanovic (1990) the development of endogenous growth theory by Romo and Lucas has offered the opportunity to define and explain the link between financial development and economic growth. Similarly, they present a model in which financial development and the rate of economic growth are endogenously determined. The model uses dynamic programming and explain that through research, collection and analysis of information, the flow of resources can be enhanced which leads to economic growth. However, the neoclassical perspective, which is based on Solow's growth model, has emphasized the importance of investment. The model highlighted the savings or investment ratio as important determinant of economic growth. Similarly, the neoclassical perspective, which is based on Solow's growth model, has emphasized the importance of investment. The model highlighted the savings or investment ratio as important determinant of economic growth. Smith and Starr (1996) through overlapping generation model indicate that stock market development facilitate reduction in transaction cost which helps investors and savers to frequently sell and buy their assets. However, this study adopt neoclassical growth model, otherwise referred to as growth accounting framework to explain the relationship between stock market development and economic growth.

Methodology

Data and Data source

This study uses secondary data in the form of annual time series. However, different data sets has been collected from various sources such as Nigerian Stock Exchange Fact Book and Accounts, various years, Central Bank of Nigeria Statistical Bulletin (CBN), Annual Abstract Statistics (various issues), published by the National Bureau of Statistics (NBS).

Model Specification

The empirical model employed for this study was adopted from an improved work of (Mohtadi and Agarwal 2000; Adigwe et al 2015). Real Gross Domestic Product (GDP) measured as proxy for economic growth which is the dependent variable as a function of Market Capitalization (MCR), Shares Traded Ratio (STR), Foreign Direct investment (FDI), Total Savings (TS). The functional relationship of the model becomes; $ECOGR = F(MCR, STR, FDI, TS) \dots\dots\dots (1)$

Equation (1) can be express in its econometric form as follows:

$ECOGR =$

Variable	At Level	1 st Difference	Order of Integration
MRC	-0.038754	-2.907251 ***	1(1)
STR	-1.825344	-3.418543 **	1(1)
RGDP	-1.343442	-3.345316 **	1(1)
FDI	-0.175797	-2.783163 ***	1(1)
TS	-1.585308	-2.980144 **	1(1)

Source: Author's Computation 2019
Significant at 1%, 5% and 10% (*, **, ***)

The results of unit root test in table 1 shows that all the variables involved are integrated of order 1. Then we proceed to examine the presence or non-presence of co-integration relationship among the variables. When a co-integration relationship is present, it means that the variables share a common trend and long-run equilibrium as suggested theoretically. To do that we proceed to carry out the Cointegration test using Johansen (1990) Cointegration approach.

The results of the Johansen Cointegration test are reported in table 2 below. The results indicate that, at all ranks trace and maximum Eigen values are greater than the 5% level of significance, thus, there is evidence of the existence of co-integration among the variables under investigation. This implies that Market capitalization ratio, Shares traded ratio, Real GDP, FDI and Total savings have a long-run relationship.

Table 2: Co-integration Test Result Using Johansen

Hypothesized	Eigen Value	Trace Statistics	5% Critical Value
No. of CE(s)			
None*	0.884922	126.4676	68.81789
At Most 1*	0.734603	68.10607	49.85613
At Most 2*	0.617893	36.91778	31.89802
At Most 3	0.474307	16.76963	17.49471
At Most 4	0.060867	1.407066	3.842467

Source: Author's Computation, 2019

The results of the Johansen co-integration test in the table 2 above indicate that, all the ranks trace and maximum Eigen value are greater than the 5% level of significance. Thus, there is evidence of the existence of co-integration among the variables under investigation. This implies that market capitalization ratio, shares traded ratio, Real GDP, FDI and total savings have a long-run relationship.

Error correction Model (ECM)

Having confirming that co-integration exists, the Engle-Granger theorem establishes the encompassing power of the Error correction Mechanism (ECM) over other forms of dynamics specifications. In order to ascertain the speed rate to the changes in explanatory variables as well as the short run dynamics of the model, we estimate ECM and the result are presented in table 3 below.

Table 3: Error Correction Model (ECM) Result

Variables	Coefficient	Std.-Error	t-ratio	Prob.
ECM (-1)	-0.832498	0.186449	-4.465019	0.0002
TS	36314.70	17905.91	2.028084	0.0538
STR	39713.25	5610.815	7.077982	0.0000
MCR	5089.800	3416.705	1.489681	0.1493
FDI	-7.124030	3.305122	-2.155451	0.0414
C	154273.6	28517.72	5.409745	0.0000
R-Squared	0.940633			
F-Stat	64.39595			
Durbin Watson Stat.	2.086757	Adjusted R-Squared	0.916280	

Source: Author's Computation, 2019

From the ECM test result presented in table 3, the EC (-) indicates negative sign and is significant at two percent level. Similarly, we can see from the table that R^2 value of 0.940633, and $adjR^2$ stands at 0.916280. This however, indicates that aver 91% of the short run variation is explained by the explanatory variables. The F-Statistics value is highly significant at 1% level. Moreover, the market capitalization ratio is not significant. This buttresses that MCR do not influence economic growth in the short-run. We can see from the table that coefficient of total savings, share traded ratio, and FDI are statistically significant at 5%, 1% and 4%, this indicates an influence of the variables on economic growth in Nigeria during the period of study. The Durbin Watson statistics of 2.086757 result show that the ECM is free from serial correlation.

Long Run Relationship Estimation Result

After ascertain the speed rate and short run dynamics among the variables under study, the next step is the examination of the long run relationship among them, From the long run estimated results, is found that the F- value is significant at 1% level, the share traded ratio (STR) has a negative coefficient of -6.389430 which implies that is not significant in explaining the RGDP during the period under study. However, market capitalization ratio (MCR) and total savings (TS) was found to have a significant signed. Consequently, Durbin Watson statistics was seen to have 1.766845 as this it indicates that there is no serial correlation in the regression results.

Granger Causality Test

The study uses Granger Causality techniques to investigate the direction of the causality between the variables MCR, STR, Real GDP, FDI, and Total savings.

Null Hypothesis:	Obs.	F- Statistics	Probability
MCR does not Granger cause RGDP	30	0.12832	0.88205
RGDP does not Granger cause MCR		5.04923	0.01488
STR does not Granger cause RGDP	30	3.93278	0.03468
RGDP does not Granger cause STR		0.05641	0.95547
FDI does not Granger cause RGDP	30	0.66744	0.53284
RGDP does not Granger cause FDI		4.65918	0.01964
TS does not Granger cause RGDP	30	0.69000	0.62103
RGDP does not Granger cause TS		3.22994	0.06198

Lags:2 **Table 4: Pairwise Granger-Causality Test results**

Source: Author's Computation, 2019

The Granger causality test was used to identify the direction of causality among the variables. The results as presented in Table 4 showed the existence of a unidirectional relationship that runs from Real gross domestic (RGDP) to Market capitalization ratio (MCR). Similarly, there is unidirectional causality that runs from Share traded ratio (STR) to Real domestic product (RGDP) also exist from RGDP to Foreign direct investment (FDI) and from Real Gross domestic product (RGDP) to Total savings (TS). Therefore, economic growth granger causes stock market development.

Discussion of Results

To this end the empirical analysis shows that in the short run share traded ratio and market capitalization ratio are strong stock market development proxies which are highly linked to economic growth in Nigeria. Similarly, the result from the co-integration test indicates existence of long-run relationship among the variables in the study. Furthermore, the positive significant long-run linkages exist between stock market development measured by market capitalization ratio and total savings, and economic growth were found. The findings are in conformity with the findings of Aigbovo and Izekor (2015), Adigwe et al (2015) whose their findings is in conformity with the findings indicate positive significant long-run exist between stock market development and economic growth in Nigeria. Consequently, the Granger causality test reveal evidence of a unidirectional causality running from economic growth to stock market development. The findings are contrary from the findings of Osinusi and Yeodiwe (2003) in his findings reveal a bi-directional relationship.

Conclusion and Recommendations

This study investigates the relationship between stock market development and economic growth in Nigeria by applying Granger causality test, Johansen

cointegration procedure and Error correction model among others, using annual time series data covering the period 1986-2017. On the basis of findings of this study, it was concludes that stock market development has a strong impact on economic growth in Nigeria. Also but in the short run and long run all the explanatory variables positively influence economic growth except STR which has negative coefficient. The result of the Granger causality showed a unidirectional running from Real gross domestic product to MCR, STR, FDI and TS as shown in table 4. Therefore, this study accept the hypothesis that economic growth granger cause stock market development in Nigeria. The study recommend for sustained effort to stimulate productivity in both the public and private sectors. This will leads to improve investment and stimulate growth. Given that stock market operate in a macro-economic environment, it is therefore necessary that the environment must be an enabling one in order to realize its full potentials. This will boost the market operations leading to improved investor confidence to participate actively in the market. *The policy makers in Nigeria should remove impediments to stock market development such as tax, legal and regulatory barriers.* Finally, there is also need for all the tiers of government should be encouraged to fund their realistic developmental programmes through the stock market. This will serve as a leeway to freeing the resources that may be used in other sphere of the economy. On the basis of the findings of this study, much work remains to be done for better understanding the relationship between stock market development and economic growth. However, this paper considers two variables as proxy for stock market development. This opened an avenue for further research must be carried out to determine the changing role of the Nigerian stock market during different periods and its relation with other macroeconomic variables.

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