A Causality Study of Stock Market Development and Economic Growth in Nigeria and Brics

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Abstract: The study examines Stock Market development and economic growth in Nigeria and South Africa using quarterly time series data for the period 1995Q1 to 2015Q4 sourced from World Bank Indicator. The granger causality test and ordinary least squares multivariate regression and panel estimation methods were employed to determine how stock market development impacts on and granger causes economic growth of the emerging countries. Stationarity test was conducted using the Augmented Dickey Fuller test to ensure the regression result was devoid of spuriousness. Findings arising from the empirical estimations indicate that in Brazil, Russia, India, China and South African (BRICS), Total Value of Stock Traded Ratio (TVSTR) Granger causes Turnover Ratio (TR) unidirectionally while bi-directional relationship exists between Inflation Rate (INFR) and Real Gross Domestic Product Growth Rate (RGDPGR). In Nigeria, stock market development does not granger cause economic growth, and vice versa. However, there is causality flowing from Turnover Ratio TR to grange cause TVSTR. It is therefore suggested that the Nigerian government could profit largely by maintaining multi-lateral trade and co-operation to foster more flow of foreign investment and tap into the various national resources of each of the BRICS country.

Keywords: Stock Market; Real Gross Domestic Product; Market capitalization; inflation rate

JEL Classification: G10; E44

1. Introduction

There are a lot of contentious issues with regard to stock market development and economic growth of any country. One of such contentious issues is the direction of impact and causality. Some prior researchers like King and Levine (1993) have opined that stock market may influence long-run growth of an economy. Arestis and Demetriades (1997) state that there is pattern of causality that varies across countries

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and this variation generate conflicting result. In researches involving econometric estimations like Granger causality and Vector Autoregression, it is easy to observe the direction of relationships. But the application of these estimation techniques at examining the direction of causality between economic growth and stock markets with comparative and pooled data for BRICS (Brazil, Russia, India, China and South Africa) and Nigeria has not been on the ascendancy in empirical literature. Stock market is the engine of economic growth and as a corollary, a healthy economy positively influences activities in the stock market. Growth in a nation's real gross domestic product (RGDP) can affect both the manufacturing and services industries. The performance of companies engenders their market values. The selection of emerging economies like Nigeria and BRICS is driven by the causal empiricism that they are among the fast growing countries among the emerging countries of the world. Moreover it becomes necessary to determine the association existing between equity market and growth of BRICS' economy and how it can be beneficial for policy adjustment in the Nigerian situation. Strikingly enough, a comparative examination of the flow of causality between stock market development and economic growth in Nigeria and BRICS seems not to exist, hence the need to address this gap.

2. Literature Review

The BRICS (Brazil, Russia, India, China and South Africa) countries are being recognized to play significant role in influencing the world economy. Stock market in Brazil is little developed, and has low capitalization, non-significant business volume; few initial offerings; reduced number of public companies; transactions highly concentrated in a few shares; and low liquidity (Moura, 2005). Carvalho (2002) emphasizes that the reason for the atrophy of the Brazilian stock market is the low level of protection for minority stockholders. Matos (2003) stresses the predominance of favourable arguments corroborating the hypothesis that the stock market development stimulates economic growth. They found significant evidences of the bidirectional effect between financial development and economic growth in Brazil.

Russia stock market over the years has been buffeted by certain factors like socio-economic and political factors, which have interplayed to impinge on the growth of the economy. Andrezo and Lima (2012) state that there is disagreement concerning whether the development of the stock market occurs from the growth in the economy

or if it is the opposite in Russia, and indeed, any other member of the BRICS. Their empirical results showed that the market capitalization and liquidity did not positively influence the growth of the economy, thus serving as a further ground for empirical investigation. Studies of equity market and the growth of India as a member of the BRICS countries has equally been a subject of debate; and this debate primarily revolves around whether stock market development influences economic growth or vice versa (Sudharshan & Rakesh, 2011). They argue that results which concerned the economy have remained mixed and inconclusive, notwithstanding the stock market proxies used. Kamaiah and Biswal (2000) assess the empirical relationship between stock market development indicators and economic growth in India. They found stock market size was positively associated with economic growth, but there was no support for the association between stock market liquidity and economic growth. Biswal and Veerashekharappa (2002) found that stock market development plays a significant role in the economic growth process in India. Agrawala and Tuteja (2007) confirm a stable long – run equilibrium. Chakraborty (2008) reveals that causality runs from growth rate of real GDP to stock market capitalization. Padhan (2007) and Paramati & Gupta (2011) expose the bidirectional relationship between stock market development indicators and economic activity.

Some Chinese studies have examined the link between stock market development and economic growth. The reports obtained reveal that the development of stock market slightly affects economic growth in a positive direction in China. Ruyong (1999) pointed out that during the period 1994 -1998, China's stock market development has little or no effect on the economic growth. Wang (2002) using China's stock market quarterly data in a regression model disclose that market liquidity has limited effect on economic growth. Mu Quing, Robert & Chang (2001) report that stock market capitalization rate, the stock market turnover and stock market trading rate as indicators with the use of quarterly data have not significantly impacted on the growth of China's economy. Similarly, Zhao (2002) ascertain that there is only one weak negative correlation between Chinese stock market and capitalization rate, while there is a positive relationship between trading value and turnover rate of economic growth.

South Africa is one of the largest economies on the continent of Africa with a diversified productive base and sound macroeconomic reforms which help in boosting competition, creating jobs and promoting economic growth. South Africa stock market has been ranked 25th in the world by World Economic Forum ahead of India, Russia and Brazil which ranked 31st, 36th and 40th respectively (Chipaumire &

Ngirande, 2014). Ndako (2008) examines the causal relationship between stock markets, banks and economic growth in South Africa and suggests that in the long–run, there is evidence of bidirectional causality between stock market development and economic growth: stock market variables used include Turnover Ratio (TR) and value of shares Traded (VT); the results indicate unidirectional causality from economic growth to stock market system; the Impulse Response Functions (IRFs) and Variance Decompositions (VDCs) indicate that stock market development have short-run impact on economic growth at the immediate year of initial shocks and VDCs shows that all the indicators for stock market development contain some useful information in predicting the future path of economic growth. Similarly, the stock markets of the BRICS countries no doubt are affected by the influence of global economic challenges, precisely the 2007-2008 meltdown and weak corporate governance structures. These should create problem(s) for economies of these emerging countries.

Okey (2012) reports a non – significant relationship between stock market liquidity and size on the growth of the Nigerian Economy. Nyong (1997) examines the impact of certain stock market development indicators on economic growth in Nigeria, and found them not significant. Osho (2014) examines the role of stock market developments and economic growth in Nigeria with multiple regressions. Variables selected were stock market capitalization ratio, the value of total shares traded ratio and turnover ratio. The results revealed that stock market capitalization and the total value of shares traded ratio are negatively affecting gross domestic product; but the total turnover ratio was not significant. This gap paves way for a further study of the Nigerian case as well as with pooled data from BRICS. It may be noted that Nigeria, though not a member of the BRICS, does share similar characteristics with them as an emerging market. Therefore, this study attempts a country specific and a cross-country analysis of the emerging countries of the BRICS and Nigeria.

3. Methodology

This study employs the longitudinal research design. The sample period of the study is 2008 – 2015, covering the global economic crisis period to significant years after. Consequently, time series data for the relevant variables which include Real Gross Domestic Product (RGDP), a proxy for economic growth, market capitalization, turnover ratio, total value of stocks traded ratio, inflation rate were used. Data for this study were sourced from various issues of the World Bank indicators, particularly from 2008: q1 to 2015: q4. The study employs the vector error correction mechanism and autoregressive distributed lag to analyze the data. It also employs the Engle and Granger Causality test as well as the Augmented Dickey Fuller test to test the stationarity of the variables in the construct.

Model Specification

The deterministic form of the regression model employed in this study is based on Cobb- Douglas linear model of stock market development and economic growth.

Economic growth = f (MCAP, TVSTR, TR, and INFR)………………………....(1)

This is further stated in stochastic form as follow:

$$RGDPGR_t = \beta_0 + \beta_1 MCAP_t + \beta_2 TR_t + \beta_3 TVSTR_t + \beta_4 INFR_t + \mu_t \dots \dots \dots \dots ..(2)$$

$$RGDPGR_{it} = \beta_0 + \beta_1 MCAP_{it} + \beta_2 TR_{it} + \beta_3 TVSTR_{it} + \beta_4 INFR_{it} + \mu_{it} \dots \dots \dots \dots (3)$$

β_1 to β_2 represents coefficient of the parameters of estimation

i represents cross-section, i.e. individual countries of BRICS and *t* is the period in question.

- RGDPGR represents real GDP growth rate;

- MCAP represents market capitalization;

- TR represents turnover ratio;

- TVSTR represents total value of traded ratio;

- Inflation represents core inflation rate.

Granger causality test: The study of causal relationships among economic variables is common. According to Engle and Granger (1991), co-integrated variables must have an error correction representation; one of the implications of Granger representation theorem is that if stationary series are co-integrated, then one

of the series must granger cause the other (Gujarati, 2001). The causality could be unidirectional or bidirectional. A bivariate causality model may be stated as:

$$X_t = \alpha_0 + \sum_{i=1}^{n} \alpha_i y_{t-i} + \sum_{j=1}^{m} \beta_i x_{t-j} + \mu_t \dots \dots \dots \dots \dots (1)$$

$$Y_t = \alpha_0 + \sum_{i=1}^{n} \beta_i x_{t-i} + \sum_{j=1}^{m} \alpha_i x_{t-j} + \varepsilon_t \dots \dots \dots \dots \dots (2)$$

Where the null hypothesis is that y does not Granger cause x in the first regression equation and x does not Granger cause y in the second regression equation. The inferential statistic used in this study include the ordinary least square Johansen co-integration and vector error correction model to determine the relationship between Real Gross Domestic Product and the stock market development indicators in Nigeria and BRICS.

4. Empirical Analyses

Table 1. Descriptive Analysis of the Emerging Countries: Nigeria and BRICS

	Nigeria	Brazil	Russia	India	China	South Africa	BRICS
RGDPR	1.336667	0.791	0.608	1.737	2.433	0.765	3.461
MKTCAP	4.661190	11.133	14.274	15.589	10.546	49.981	18.632
TR	2.381881	12.790	15.587	21.451	30.707	5.981	17.537
TVSTR	0.465321	5.980	6.104	8.808	13.985	11.916	10.130
INFR	4.283214	2.398	10.186	1.875	1.012	1.589	3.012

Source: Author's Computation

The above table shows that on individual basis, China has the highest real GDPGR, followed by India, Nigeria, Brazil, South Africa and Russia. On Aggregate, BRICS have the highest RGDPGR. This suggests the prediction of the BRICS overtaking the G-7 is likely. China economy is viable compared to the other members of the BRICS. South Africa has the highest market capitalization, followed by India, Russia, Brazil, China and Nigeria. The high value of market size of South Africa might not mean the market is liquid and devoid of adverse effect of macro-economic factors. The market capitalization of BRICS is quite high and suggests the increase in size is encouraging for investment. China stock market is more liquid, followed by India, Russia, Brazil, South Africa and Nigeria. At aggregate level, BRICS has appreciable stock market liquidity, such that investors can readily trade on it and expect instant returns. China has the lowest effect of inflation on the securities traded

on the stock market. This connotes that each of these countries needs effective policies to positively influence the stock market and economy in general.

Table 2a. Unit Root Test at Level At 5% for Nigerian Data

Variables	ADF Statistics	T-critical values	I(d)	Remark
RGDPGR	-1.886346	-3.471693	I(1)	Not Stationary at level
MKTCAP	-2.835876	-3.471693	I(1)	Not Stationary at level
TVSTR	-2.132532	-3.471693	I(1)	Not Stationary at level
TR	--2.408302	-3.468459	I(1)	Not Stationary at level
INFR	-3.953255	-3.465548	I(0)	Stationary at level

Source: Authors' Computation

Table 2b. Unit Root Test at First Difference at 5% for Nigerian Data

Variables	ADF Statistics	T-critical values	I(d)	Remark
RGDPGR	-3.884754	-3.471693	I(1)	Stationary at first difference
MKTCAP	-3.631894	-3.471693	I(1)	Stationary at first difference
TVSTR	-4.716259	-3.468459	I(1)	Stationary at first difference
TR	-3.621526	-3.468459	I(1)	Stationary at first difference

Source: Authors' Computation

In table 2a and b, the summary results of the unit root test at 5% using Nigerian data are presented. The Augmented Dickey Fuller statistics are compared against the McKinnon critical values, only INFR was stationary while at first difference all the variables, RGDPGR, MKTCAP, TVSTR and TR were all stationary. Given that the time series used are stationary, it then affords the study to conduct the preliminary analyses, diagnostic tests and apply the appropriate econometric estimation.

Table 3. Ordinary Least Square Regression Results for Nigeria

Dependent variable: RGDPGR Sample: 1995Q1 – 2015Q4

Variables

C -1.609034

(- 3.833570)

0.419722

MKTCAP 0.047156

(1.674900)

0.028154

TR 0.001341

(0.028816)

0.046532

TVSTR -0.193580

(-1.351865)

0.143165

INFR -0.003277

(-0.196939)

0.016639

R-Square 0.924464

Adjusted R-squared 0.919560

F-statistic 188.4775 (0.000000)

Durbin-Watson stat. 1.136896

t-statistics are in parentheses with standard errors below.

Source: Authors' Computation

The estimated OLS equation for Nigeria is quite good after correcting for auto-correlation among error terms using the auto-regressive scheme of order one. The F-statistic value of 188.47 was highly significant at 1% level. It means that the independent variable jointly impact the dependent variable and thus any hypothesis of significant relationship between the dependent variable and the regressors taken together cannot be rejected. Estimated R-square value of 0.92 implies that the model has a commendable goodness-of-fit and that about 92% of the systematic fluctuations in real GDP growth rate can be explained by changes in the explanatory variables over the period. All estimated coefficients have the appropriate sign except TVSTR: However, only MKTCAP coefficient was significant at 1% level. This indicates that market capitalization is a significant driver of economic growth in Nigeria. Its value of 0.05 further shows that a unit rise in market capitalization would cause economic growth rate to rise by 5% in real terms. Other regressors considered – TR, TVSTR, and INFR – were not significant.

Table 4. Granger Causality Tests Result for Nigeria

Pairwise Granger Causality Tests Date: 04/5/17 Time: 08:18 Sample: 1995Q1 2015Q4 Lags: 2			
Null Hypothesis	Obs	F-statistic	Prob.
MKTCAP does not Granger Cause RGDPGR	82	1.72798	0.1845
RDGPGR does not Granger Cause MKTCAP		0.18812	0.8289
TR does not Granger Cause RGDPGR	82	0.26297	0.7695
RGDPGR does not Granger Cause TR		0.50685	0.6044
TVSTR does not Granger Cause RGDPGR	82	0.13823	0.8711
RGDPGR does not Granger Cause TVSTR		0.25680	0.7742
INFR does not Granger Cause RGDPGR	82	0.10869	0.8971
RGDPGR does not Granger Cause INFR		0.28075	0.7560
TR does not Granger Cause MKTCAP	82	0.04917	1.9521
MKTCAP does not Granger Cause TR		1.12062	0.3313
TVSTR does not Granger Cause MKTCAP	82	0.72783	0.4863
MKTCAP does not Granger Cause TVSTR		0.17340	0.8411
INFR does not Granger Cause MKTCAP	82	1.55991	0.2167
MKTCAP does not Granger Cause INFR		0.28712	0.7512
TVSTR does not Granger Cause TR	82	2.01531	0.1402
TR does not Granger Cause TVSTR		6.61759	0.0022
INFR does not Granger Cause TR	82	0.21937	0.8035
TR does not Granger Cause INFR		0.05164	0.9497
INFR does not Granger Cause TVSTR	82	0.28431	0.7533
TVSTR does not Granger Cause INFR		0.00339	0.9966

Source: Authors' Computation

Granger causality test of the variables show that there is no causal relationship between the variables pair-wise save for the causality running from TR to TVSTR which was significant at the 5% level. This different result obtained concerning the relationship between market capitalization and the weak relationship earlier revealed by the estimated OLS model. The findings are mixed and inconclusive. This study ascertained that stock market development proxied by TR, MKTCAP and TVSTR significantly impact on the economic growth of Nigeria in the long-run. The finding is in consonance with Poppola (2014); Osinubi (2007); Oke and Makudu (2004); Ezoeha, Ebele & Ndi-okereke (2009); Ujunwa & Salami (2010); Okodua & Ewetan (2013); Onwumere, Ibe, Okafor & Uche (2012); Oke & Adeusi (2012); Chizea (2012).

There exists no granger causality from stock market development to economic growth, and vice versa. However, there is causality flowing from TR to TVSTR. The absence of causality may not be unconnected with weak corporate governance and

institutional framework, macroeconomic factors and the adverse effect of the global financial crisis. The empirical findings quite agree with the study of Ogunmuyiwa (2010); Osamwonyi & Kasimu (2013); Okey (2013); Bakare et al (2014). It however disagrees with the finding of Kolapo and Adawomola (2012). Specifically, market capitalization was found to have positive long run impact on economic growth in Nigeria. This clearly underscores the fact that the size of the Nigerian stock market in addition with the government attempts to reform it has not yielded long-run impact; and this calls for urgent concern that could revive and engender investments as well as strengthen the functionality of the Nigerian stock market. The study finding is consistent with Nwaolisa, Kagie and Egbunleke (2013), Bernard & Austin (2012). It is however not consistent with Oke (2013), Osho (2014); Yadiri, Chukwu & Chigbu (2014). Stock market capitalization has a positive association with stock turnover. The finding agrees with Alajekwu & Achagbu (2012). It however, fails to agree with Ihendiniha & Onwuchukwa (2012). A positive but weak association exists between stock market development indicators and economic growth in Nigeria. This supports the endogenous growth theory and is in line with prior findings and like Osho (2014), Mwtak, Suranya & Zunaidah (2015); Alajekwu & Achugbu (2012).

Table 5. Unit Root at Level and First Difference for BRICS

Variables	ADF test at level	Critical statistic value at 5%	Meaning
RGDPGR	-3.409733	-2.867066	Stationary at level
MKTCAP	-17.40610	-2.867112	Stationary at first difference
TVSTR	-3.090406	-2.867078	Stationary at level
TR	-4.678361	-2.867089	Stationary at level
INFR	-5.826216	-2.867066	Stationary at level

Sourced: Computed from E-view 8.0

The unit root test of the time series for BRICS shows that some of the variables were stationary at levels while others were stationary at first difference. For example, the table 4 reveals that RGDPGR, TR and INFR were stationary at level; while MKTCAP and TVSTR are stationary at first difference at 5% significant level. This explains that the existence of unit root among the variables cannot be accepted.

Table 6. Pairwise Granger Causality Tests Result for BRICS

Pairwise Granger Causality tests Date: 04/5/17 Time:07:48 Sample: 1504 Lags: 2			
Null Hypothesis:	Obs	F-statistic	Prob.
INFR does not Granger Cause RGDPGS	502	4.99555	0.0071
RGDPGR does not Granger Cause INFR		8.96920	0.0001
TVSTR does not Granger Cause TR	502	5.66827	0.0037
TR does not Granger Cause TVSTR		1.90774	0.1495

Source: Computed from E-view 8.0

The pair wise granger causality test table reveals that TVSTR Granger causes TR unidirectionally, while bi-directional relationship flows between INFR and RGDPGR. This suggests that there is macro-economic stability in the BRICS; and thus influence the performance of the BRICS economy. Similarly, causality flows from the stock market to the economy.

Table 7. Pooled Least Square Result

Dependent Variable: RGDPGR_				
Method: Pooled Least Squares Date: 04/5/17 Time:16:40				
Sample: 1995Q1 2015Q4 Included observations: 420				
Cross-section included:5 Total pool (balanced) observations: 2100				
Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.470759	0.059501	7.911794	0.0000
MKTCAP	-0.030602	0.007474	-4.094555	0.0000
TR	-0.111087	0.010911	-10.18139	0.0000
TVSTR	0.368051	0.022715	16.20324	0.0000
INFR	0.042163	0.013468	3.130705	0.0018
R-square	0.161211	Mean dependent var		0.733388
Adjusted R-square	0.159610	S.D dependent var		2.723074
S.E. of regression	2.496319	Akaike info criterion		4.669890
Sum squared resid	13055.22	Schwarz crieterion		4.683341
Log likelihood	-4898.384	Hannan-Quinn crit.		4.674817
F-statistic	100.6621	Durbin-Watson sts		0.050811
Prob. (F-statistic)	0.000000			

Source: Computed from E-view 8.0

Analysis of pooled data for BRICS was quite robust with the F-statistic of 100.66 significant at 1%. Overall, the model is significant at the parsimonious 1% level indicating that the regression jointly explained fluctuation in the regressand. All estimated coefficients were significant at 1% level and wrongly signed except TVSTR. Particularly, MKTCAP and TR reduce real GDP growth rate among the

group (BRICS) while TVSTR and INFR promote unit increases in MKTCAP and TR will reduce real GDP growth rate by 0.03% and 0.11% respectively whereas unit increases in TVSTR and INFR will raise real GDP growth rate by 0.36% and 0.04% respectively. This result shows that capital market activities operation were not adequate to boost or enhance the growth rate of real GDP. From this development, other estimating techniques were considered for robustness. Other data estimation techniques that can come in handy are the fixed-effect and random-effect models, however, Hausman test need to be conducted to inform the choice.

The Hausman test statistic is employed to test for the endogeneity of the unobserved error component (Igbinosa & Ogbeide, 2015). The test is necessary because the random effect needs to be uncorrelated with the explanatory variables; otherwise there is endogeneity problem and the random problem effect estimator will be inconsistent. The null hypothesis for the Hausman test is: $H_0\beta_{RE} = \beta_{fe}$, Where β_{RE} and β_{FE} are coefficient vectors of the time-varying explanatory variables excluding the time variables. Thus, if null hypothesis is rejected, the conclusion simply that can be drawn is that random effect (RE) model is inconsistent; and the fixed effects (EF) model will be preferred. Therefore, the Hausman test result of the model is presented below:

Table 8. Hausman Test Result for Pooled Data

Correlated Random Effects – Hausman Test				
Pool: Untitled Test Period random effects				
Test Summary Chi-Sq. Statistic Chi-Sq.d.f Prob.				
Period random 3206.935090 4 0.0000				
Period random effects test comparisons:				
Variable	Fixed	Random	Var(Diff)	Prob.
MKTCAP	-0.229067	-0.030602	0.000015	0.0000
TR	-0.341229	-0.111087	0.000029	0.0000
TVSTR	0.288395	0.368051	0.000216	0.0000
INFR	-0.092233	0.042163	0.000026	0.0000

Sourced: Computed from E-view 8.0

An observation of the conducted Hausman's test for this study suggests that the fixed effect model is preferable. This decision is based on the significance of the estimated very large chi-square statistic value of 3206935090 which is highly significant at 1% level implying a rejection of the null hypothesis in favour of the fixed effect model.

Fixed Effect Estimation

Table 9. Pooled Least Squares (Fixed Effect) Result

Dependent Variable: RGDPGR_ Method: Pooled Least Squares Date: 04/05/17 Time:17:08				
Sample: 1995Q1 2015Q4 Included observations: 420 Cross-section included:5				
Total pool (balanced) observations: 2100				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.408270	0.055679	7.332593	0.0000
MKTCAP	-0.009552	0.007436	-1.300243	0.1937
TR	-0.080741	0.010644	-7.585293	0.0000
TVSTR	0.311665	0.021518	14.48409	0.0000
INFR	0.030912	0.012779	2.418881	0.0157
Fixed Effects Cross				
BRA-C	1.796219			
RUS-C	-0.283632			
IND-C	-0.245312			
CHI-C	-0.451039			
SAF-C	-0.816236			
Effects Specification				
Cross-section fixed (dummy variables				
R-squared	0.270223	Mean dependent var		0.733388
Adjusted R-squared	0.267430			2.723074
S.E. of regression	2.330687	S.D dependent var		4.534480
Sum square resid	11358.52	Akaike info criterion		4.558693
Log likelihood	-4752.204			4.543348
F-statistic	96.78211	Schwarz crieterion		0.059034
Prob(F-statistic)	0.000000	Hannan-Quinn crit. Durbin-Watson sts		

Source: Computed from E-view 8.0

Result of the estimated fixed-effect is quite good and highly significant following the probability value (0.00) of the F-statistic. The fixed cross-sectorial constant term, and TVSTR were highly significant at 1% level; INFR was significant at 5%. Again, all estimated coefficient were wrongly signed except that of TVSTR. Average real GDP growth rate among member countries of BRICS stood at approximately 41% per period. Brazil, Russia and India have positive growth rate of real GDP while China and South Africa have a negative growth rate on average over the period. Brazil has the highest among the group while South Africa has the least. Brazil's growth rate is above the group's average by 179% and India which is second, has an average of 24.5%, less than group's average. Russia (third), China (fourth) and South

Africa (fifth) all have average growth rate of real GDP below the group's average by 28.3%,45% and 81.6% respectively.

Basically this is a reflection of the extent to which capital market operations influence the growth rate of economic activities in these countries. On average, a unit increases in MKTCAP and TR variables will hinder growth rate of real GDP in BRICS by 0.01% and 0.08% respectively. This is a clear indication that members of this group need to further develop their capital markets in order for them to adequately drive economic growth. On the other hand, TVSTR and INFR both have a positive influence on real GDP growth in BRICS on the average. Specifically, unit rises in TVSTR and INFR would raise growth of real GDP in BRICS by 0.31% and 0.03% respectively. INFR positive impact on growth of real GDP in BRICS may be attributed to investors-domestic and foreign confidence in the economies of the group. In all, we can deduce that the capital market operations in BRICS significantly impact real GDP growth rate.

The BRICS have had fair share of the global financial crises recently. Nonetheless, stock market activities have continued unabated but in different dimensions among the BRICS. The need to examine the performance of the BRICS in relation to how the stock market influences the economy is the primary goal of this study. The empirical estimation from the sub-section above shows that stock market development contributed to the real GDP growth rate of the BRICS. The turnover ratio of the BRICS though negative, affected the economy, has however increased the economy significantly. The finding is in tandem with the BRICS report (2014). For example, the report has it that the turnover ratio indicator of the depth of the stock market deepened considerably over the years in the BRICS. The indicator drew from a base of 115.9% in China to 229.6%, almost in the past two decades; Brazil and South Africa have also witnessed a significant increase in the ratio from 2009 upward. Except during the global financial crisis, the stock market performed well in the BRICS. This could be attributed to the integration of the BRICS financial market with global financial markets. These have resulted to growth in investment, thus causing increases in the GDP of the BRICS. The finding of the study further supports the prediction of O'Neil and Stupnytska (2009) that the combined economies of the BRICS group could overtake that of U.S and European Union in the next four decades.

The market capitalization of the BRICS was observed to significantly improve the real GDP growth rate. The finding could be adduced to influx of direct and portfolio investment. Overall, it can be summarized that stock market development impact

significantly on the economic growth of the BRICS than that of Nigeria, thus a policy prescription to ensure Nigeria benefits from the positive effect of the BRICS in the global economy is encouraged.

5. Conclusion and Recommendations

This study investigated the causality relationship between stock market development and economic growth in Nigeria and BRICS. Empirical study of BRICS indicates that TVSTR Granger causes TR unidirectionally while bi-directional relationship flows between INFR and RGDPGR. This suggests that there is macro-economic stability in the BRICS. Similarly, causality only flows from the stock market to the economic; thus affirming the a priori expectation of the study. In Nigeria, there exists no granger causality from stock market development to economic growth, and vice versa. However, there is causality from TR to TVSTR. Thus, Nigeria as an emerging economy has a lot to profit from the BRICS bloc. The policy makers and government could profit largely by maintaining multi-lateral trade and co-operation to foster more flow of foreign direct investment and tap into the various national resources of each of the BRICS country. The Nigerian Stock Market backward linkage to the economy is weak. For example inflow of capital is weak for agricultural activities and the important informal sector.

The BRICS country member can further evaluate their economy and socio-political policies so as to optimize the benefit of each of the member to strengthen the economy, reduce the fiscal and monetary problems. Rather than be in pursuant of the GDP solely, the BRICS can equally diversify the economy and invest more in infrastructure, constantly engage in various political and economic reform as all these factors have ways of engendering the overall GDP growth. Each of the BRICS country member should develop a policy that seeks mutually benefiting co-operation from China to drive sustained long-term economic growth. It is important that contracts negotiated are mutually benefiting. Given the infrastructural requirements of the BRICS economies, they need to seek more public-private participation that can help relax some of the economic challenges especially in the newly emerging environment of nationalism. BRICS member countries need to constantly provide institutional mechanism that is sound for optimal performance, anchored on good governance and norms. For the stock market of both Nigeria and BRICS to rapidly grow, policy reforms favouring listing of quoted companies should be encouraged. This policy prescription is specially encouraged in Brazil and Russia.

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