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STOCK MARKET DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

Stock markets have been theorized to be an important arbiter of growth. They contribute to growth mostly when they are liquid and large in size. Liquid equity market makes investment less risky and more attractive thereby increasing investors' confidence. The beneficial roles of stock market liquidity and size to economic growth has been a subject of controversy worldwide. To this end therefore, this study analyze the impact of the stock market development (as measured by size and liquidity) on economic growth in Nigeria using the Ordinary Least Squares (OLS) and the Generalized Least Squares (GLS) on time series data spanning from 1980 to 2015. The study found that stock market contributes to growth via liquidity only. The implication of the liquidity advantage of the Nigerian stock market is that the market can ease savings mobilization and thus further accelerate growth through raising capital and mobilizing them for productive usage. Liquidity market can assist in accomplishing government in achieving its monetary policy and thus further contribute to economic growth. In order to increase the size impact of stock market, and reducing the cost of mobilizing savings in the economy and facilitating productive investments thus contributing to economic growth, the study recommends sound macroeconomic policies, conducive legal environment, attractive tax structures, good political climate and an urgent need for the re-positioning of the stock exchanges in Nigeria.

Keywords: *Stock Market Development, Economic Growth, Efficient Markets, Investments, Macroeconomics*

Introduction

The stock market is theorized as an important component of capital market which was established to promote growth by giving the quantitative as well as the qualitative direction to the flow of funds which brings about rational allocation of resources and economic growth. This is done by converting financial assets into physically productive assets. The logic here is that stock prices determined on the exchange provide information which aids investors in making better investment choices. Better investment decisions facilitate better resources allocation and consequently higher economic growth.

Levine (1996) (see also Levine, 1997 and; Demirguc-Kunt, 1994) explained one of the channels through which stock markets may affect economic growth as; the creation of liquidity. According to him, many profitable investments require long-term capital, however, most investors are reluctant to commit their savings to such a long term investments. Liquid equity market therefore makes such an investment less risky and more attractive because savers can acquire equity and sell it quickly and most times cheaply if there is an urgent need for them to fall back on their savings or the need to reorganise their portfolios. Companies also enjoy permanent capital raised through equity

issues in the market. By facilitating longer-term funds, stock market enhances more profitable investments and economic growth.

The above advantage of stock market was however countered because of the percieved negative effect of liquidity on long-term economic growth. According to this view, very liquid markets encourage "investor myopia". That is, they make it easy for dissatisfied investors to liquidify their investments very quickly thus weakening investors' commitment and diminishing investors' incentives to exert corporate control. To this end, stock market liquidity may harm growth (Levine, 1996).

Levine (1996) observed that most empirical evidence shows that the greater the stock market liquidity, the better the economic growth of the country. He therefore came up with a number of liquidity measures or indicators. One of these is the total value of shares traded on a country's stock exchange as a share of GDP. The second is the value of traded shares as a percentage of total market capitalization (the value of stocks listed on the exchange is the turnover ratio measuring trading relative to the size of the stock market). Lastly, the value-traded ratio divided by the stock price volatility. This captures the ability to handle heavy trading without large price swings.

Greenwood and Smith (1996) also commented on the beneficial role of larger stock market as lowering the cost of funds mobilizing and consequently facilitating the channelling of investments to their most productive uses thus contributing to economic growth. The beneficial roles of stock market liquidity and size to economic growth has been a subject of controversy worldwide. The question here is; when a stock market performs well based on the above indicators of liquidity, is it the same thing with economic growth? In other words, is there really a link between stock market liquidity or size and economic growth? In providing answer to this therefore, the study has the main objective of exploring the link between stock market performance and economic growth in Nigeria. Specifically, the study will among other things analyze the effect of stock market size on economic growth; it will also examine the role of stock market liquidity on economic growth in Nigeria. It will further analyze the impact of financial deepening, foreign direct investment, labour and gross capital formation on economic growth in Nigeria from 1980 to 2015.

Literature Review

Stock market generally gives an indicator about the health of an economy's finance. North (1991) posited that the existence of the stock market can boost economic growth by reducing the costs of transference of ownership rights in firms. According to North (1991), this is an important part of economic growth. According to Stiglitz (1985) efficient capital markets promote growth as market prices already reflect all the available information. This reduces efforts and expensive searches for additional information by the prospective investors. Jhingan (2004) observed that in an underdeveloped country where there is scarcity of capital, the absence of a developed capital market is a great hindrance to capital formation and economic growth. Meaning that, a well developed capital market is most essential in a capital-scarce economy.

Stock market liquidity is one of the channels through which they contribute to economic growth. Stock market liquidity is the ability to trade stocks easily and this is germane to economic development. Greenwood and Smith (1997) also observed the stock market size advantage when they stated that the size of stock markets is an important determinant of its ability to reduce the cost of mobilizing savings in the economy and facilitating productive investments thus contributing to economic growth.

Levine and Zervos (1996) observed that stock market's effect on growth is through the liquidity effect. According to them, many high returning yielding projects require long term fund's commitment. However, investors are always unwilling to release their funds for such investments in

such a long period time. Without liquidity market, fewer investments will be committed to such a high yielding projects.

Studies on the stock market development and economic growth are far from being conclusive and results are generally mixed. Some studies have validated the beneficial impact of the liquidity and size to growth. Others have validated either of the two stock market indicators while others have refuted the beneficial roles of the two main indicators. Levine (1996) studied the impact of stock market liquidity which he expressed using three indicators: total value of shares traded on a country's stock exchange as a percentage of GDP. The second is the value of traded shares as a share of total market capitalization. Thirdly, the value-traded ratio divided by the stock price volatility. Levine's study was conducted on 38 countries utilizing multiple regression which considers other non-financial factors such as inflation, fiscal policy, political stability, education, the efficiency of the legal system, exchange rate policy, and openness to international trade and; stock market liquidity. He found that stock market liquidity is a reliable indicator of future long-term growth. This implies that liquidity helps forecast economic growth. Levine and Zervos (1998) in another study also observed that stock market liquidity positively determine the aggregate economic growth.

Beck and Levine (2004) investigated the effect of stock markets and banking sector on economic growth in 40 countries using panel data of 146 observations between 1976 and 1998 using the generalized method of moments. They found that stock markets and banks positively determine economic growth.

Shahbaz, Ahmed and Ali (2008) investigated how the charges in financial sector contributed to the overall growth of the economy. By investigating whether or not there is any relationship between stock market development and economic growth for Pakistan between 1971 and 2006. They applied co-integration and Engle-Granger causality tests and their results showed that there is a very strong relationship between stock market development and economic growth. The long-run causality results indicate a long-run bi-directional causality between stock market development and economic growth. However, in the short-run, there is only a one-way causality from stock market development to economic growth thus confirming the beneficial role of stock market development in the growth process.

Nieuwerburgh, Buelens and Cuyvers (2006) studied the long-run relationship between stock market development (which they captured with the numbers of shares listed on the exchange and the market capitalization) and economic growth (log difference of GDP per capita) in Belgium. They employed the Granger Causality tests and concluded that stock market development determine economic growth in Belgium.

Brasoveanu et al (2008) examined the correlation between capital market development (as measured by the market capitalization, numbers of shares listed, trading volume, liquidity and some stock exchange's indices) and economic growth (represented by the GDP, GDP growth rate) in Romania using quarterly data between the first quarter of 2000 and the second quarter of 2006 using the regression function and the VAR models. Their results show that capital market development is positively related with economic growth and that there is a bi-directional relationship between capital market development and economic growth. The strongest link however is from economic growth to capital market. This indicates that capital market development precedes economic growth.

Nowbutsing (2009) examined the impact of the stock market development on economic growth in Mauritius by using time series between the period 1989 and 1886 to conduct an error correction model

analysis to capture both the short-run and the long run impacts. Their study also utilized two measures of stock market development (size and liquidity) in the analysis. Liquidity was captured by the volume of shares traded over GDP while size was captured by the share of market capitalization over GDP. The study found that stock market development positively affects economic growth in Mauritius both in the long-run and in the short-run.

Ogunmuyiwa (2010) attempted to study the investor's sentiment and stock market liquidity as critical ratios for stock market growth and economic development in Nigeria using data which spans from 1984 to 2005. He utilized the Granger causality test and OLS as the analytical techniques. He therefore concluded that investor's sentiments (as measured by the market turnover ratio) and the stock market liquidity (captured as the total value of traded shares as percentage of GDP) granger-cause economic growth. The inherent weaknesses of this study include the paucity of data and the neglect of the size variable in the study.

However, other studies came up with little impacts or no impact of stock market development on economic growth. For instance, Thornton (1995) did a study to validate the hypothesis that financial development can translate to economic growth by making use of data for 22 developing countries. He however found mixed results. While there was evidence that financial deepening promoted economic growth in some countries, in some countries, he found the converse. Spears (1991) also concluded that in the early stages of development, in the studied Sub-Saharan African Countries, financial intermediation contributed to economic growth (this is also similar to the result obtained by Filer, Hanousek and Campos (1999) for India).

Akinlo and Akinlo (2009) examines the long run and causal relationship between stock market development and economic growth for seven countries in sub-Saharan Africa using the autoregressive distributed lag (ARDL) bounds test. They concluded that the stock market development is cointegrated with economic growth in Egypt and South Africa indicating a significant positive long run impact on economic growth. Granger causality test based on vector error correction model (VECM) showed that stock market development Granger causes economic growth in Egypt and South Africa. However, Granger causality in the context of VAR shows evidence of bi-directional relationship between stock market development and economic growth for Cote D'Ivoire, Kenya, Morocco and Zimbabwe. There is a weak evidence of growth-led finance using market size as indicator of stock market development in Nigeria indicating that the contributions of stock development to growth was limited in Nigeria..

Demirguc-Kunt and Levine (1996) however cautioned on the beneficial role of stock market development to growth by saying that excessive liquidity of stock markets may harm growth in three ways. First, through the reduction of uncertainty of investments, greater liquidity can lead to dissavings. Secondly, saving rates may decline through the income and substitution effects. Thirdly, excessive liquidity may lead to investors' myopia. All these may hamper growth.

Alenoghena (2014) studied the Nigerian capital market, financial deepening and economic growth from 1981–2012 using time series data on stock market capitalization, narrow money diversification (credit to private sector) and Interest rate. They found that all the above variables significantly impacted on economic growth in Nigeria. Monetization ratio however exhibited an insignificant trend in relation to economic growth. He therefore recommended improvement of the financial market liquidity so as to enhance the overall economic efficiency.

Oriavwote and Eshenake (2014) studied the financial sector development and economic growth in Nigeria using time series data from 1990 – 2011. They utilized the error correction model for the analysis. They concluded that the financial sector

development has significantly improved the level of economic performance in Nigeria. However, the credit to the private sector contributed little or nothing to economic growth in Nigeria.

At times the relationship between one measure of stock market development and economic growth may give an encouraging result while another measure may indicate a negative result. For instance, Garretsen, Lensink and Sterken (2004) found a causal from economic growth to financial market development as measured by the market capitalization/GDP. Yet, market capitalization/GDP is not a significant factor explaining economic growth. Most of the earlier studies suffer from the inherent problem of cross-sectional. Levine and Renelt (1992) argued that some are fraught with misspecification. Evans (1995) stated that some of the analyses based on cross-sectional observations are bound to be misleading since there are country-specific characteristics whose estimations are difficult to model. This heterogeneity of slope coefficients among countries makes cross-sectional analysis inappropriate. To this end therefore, this study analyze the impact of the stock market development (as measured by size and liquidity) on economic growth in Nigeria using time series from 1980 to 2015.

Theoretical Framework

Many of the growth economists confirmed the critical role of capital in the growth process. Solow (1956), Kaldor (1957), Meade (1961) among others. Meade's Neo-classical growth model is based on a number of assumptions. The model itself postulates that the net output (Y) in a given economy varies with the following four factors. Availability of land and natural resources (N), state of technical know-how over time (t), amount of labour force (L) and the net stock of capital available in that economy. He expressed this relationship using a production function as shown below:

$$Y = F(K, L, N, t)$$

Assuming that land or natural resources is fixed, net output can increase in any year with the growth in K, L, and t. That is,

$$\Delta Y = V\Delta K + W\Delta L + \Delta Y'$$

Where v is the marginal product of capital w the marginal product of labour and Y' is used to capture the technological progress. The annual proportionate growth rate of output is:

$$\Delta Y/Y = VK/Y \,.\, \Delta K/K + WL/Y \,.\, \Delta L/L + \Delta Y'/Y$$

What the above suggests is that the growth rate of output is the weighted sum of three other growth rates. First is the growth rate in the stock of capital weighted by the marginal product of capital, plus the growth rate of the population weighted by the marginal product of labour plus the growth rate of technology.

However, the growth rate in the stock of capital and the marginal productivity of capital can be enhanced by an efficient capital market dominated by the stock exchanges. According to Jhingan (2004), the capital market in any economy performs an important function in mobilizing savings and channeling them into productive investments for the development of commerce and industry. As such, the capital market helps in capital formation and economic growth of the affected country. Based on the above therefore, attention must be focused on enhancing the performance of such body that makes long term fund mobilization possible.

Methodology

To model the relationship between growth and stock market indicators, the study drew from the theory of Solow (1956), Kaldor (1957), Meade (1961) among others. In addition, the study of Levine and Zervos (1996) and Levine (1996) modeled growth as a function of the three stock market indexes used in this study and in addition, other non-financial factors were included in their models. This study differs on some factors

to include as determinants of growth. For instance, we could not get a good proxy or data for capturing fiscal policy, political stability, education and efficiency of the legal system. The study however used the active population as a proportion of total population to capture labour, domestic credit and gross capital formation to capture capital. FDI inflows were included to capture external finance, and; trade openness to capture internationalization. However, the two measures of liquidity (turnover ratio and liquidity ratio) are highly correlated. Employing them as explanatory variables in the same model may cause multicollinearity. Hence, we broke the models into two. The models are hereunder presented.

Table 1: ADF results of the study's variables

Variable	T-stat @ level	5% Critical	T-stat. @ 1st difference	5% Critical	Order of Integration
GDPPCC	-0.319778 (0.9119)	-2.948404	-4.928806 (0.0003)	-2.951125	I(1)
BMGDP	-3.307504 (0.0224)	-2.951125			I(0)
DCPGD	-3.266918 (0.0246)	-2.951125			I(0)
FDIN	-3.460885 (0.0155)	-2.951125			I(0)
GCFGDP	-4.447056 (0.0012)	-2.951125			I(0)
LABPOP	0.140612 (0.9635)	-2.967767	-6.075950 (0.0000)	-2.967767	I(1)
LIQ	-3.057395 (0.0396)	-2.951125			I(0)
MCAPGDP	-2.611119 (0.1003)	-2.948404	-6.838797 (0.0000)	-2.951125	I(1)
OPEN	-1.916107 (0.3213)	-2.951125	-7.999128 (0.0000)	-2.954021	I(1)
TURN	-2.539592 (0.1152)	-2.948404	-6.293144 (0.0000)	-3.548490	I(1)

Table 1 above shows the ADF results of the variables of the study. The broad money in proportion to the GDP (BMGDP), domestic credit to the private sector as a ratio of GDP (DCPGD), foreign direct investment, net inflows as % of GDP (FDIN), Gross capital formation as a % of GDP (GCFGDP), and stock market transactions to GDP (LIQ) are all integrated of order zero or are stationary at level. While; GDP per capita (current US$) (GDPPCC), Population ages 15-64 as a % of total population - a measure of labour (LABPOP), Market capitalization of listed domestic companies as a % of GDP (MCAPGDP), trade as a % of GDP – a measure of trade openness (OPEN) and; Stocks traded, turnover ratio of domestic shares (%) (TURN) are all integrated of order one or are all stationary at first difference.

Running these variables together in a regression model may produce a spurious regression result. So, this study proceeds by verifying their cointegration status using the unrestricted cointegration rank test (Trace) and the result of the test is shown in table 2.

Table 2: Result of the cointegration test on the variables of the study

Sample (adjusted): 1983 2015
Included observations: 33 after adjustments
Trend assumption: Linear deterministic trend
Series: BMGDP DCPGD FDIN GCFGDP GDPGR LABPOP LIQ MCAPGDP OPEN TURN
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trac e)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.996406	518.5913	239.2354	0.0000
At most 1 *	0.925991	332.8542	197.3709	0.0000
At most 2 *	0.876455	246.9366	159.5297	0.0000
At most 3 *	0.769059	177.9288	125.6154	0.0000
At most 4 *	0.708416	129.5643	95.75366	0.0000
At most 5 *	0.621336	88.89415	69.81889	0.0007
At most 6 *	0.588066	56.84766	47.85613	0.0057
At most 7	0.386872	27.58022	29.79707	0.0882
At most 8	0.274434	11.43722	15.49471	0.1860
At most 9	0.025449	0.850704	3.841466	0.3564

Trace test indicates 7 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table two presents the cointegration result, and in the result, trace result shows that there are 7 cointegration equations. All the trace statistics are greater than their 5 percent critical value for at most 6 equations. And the corresponding probabilities are less than 0.05. Cointegration indicates that though each variable of the model may be non-stationary, their combination in a model will yield a stationary and reliable result.

Table 3: Half correlation matrix of the variables of the models

	GDPPCC	BMGDP	DCPGD	FDIN	GCFGDP	LABPOP	LIQ	MCAPGDP	OPEN	TURN
GDPPCC	1.0000									0.3716
BMGDP	-0.1105	1.0000								0.3824
DCPGD	0.1158	0.7996	1.0000							0.7232
FDIN	-0.3640	-0.0243	0.0221	1.0000						-0.0962
GCFGDP	0.2393	0.3408	0.0629	-0.3663	1.0000					-0.1330
LABPOP	0.3372	-0.2859	0.1679	0.0143	-0.3488	1.0000				0.4142
LIQ	0.1990	0.3271	0.6609	0.0314	-0.1827	0.3607	1.0000			0.8581
MCAPGDP	0.0289	-0.2910	0.1620	0.3257	-0.4710	0.4913	0.5566	1.0000		0.3153
OPEN	-0.3284	-0.2478	0.0073	0.4115	-0.4516	0.4815	0.2147	0.4954	1.0000	0.1281
TURN	0.3716	0.3824	0.7232	-0.0962	-0.1330	0.4142	0.8581	0.3153	0.1281	1.0000

The half correlation matrix result indicates that per capital growth is positively correlated with the domestic credit to the private sector, gross capital formation, labour force, and all the stock market indicators (namely; market capitalization ratio, and the two measures of liquidity-liquidity ratio and stock turnover). Turnover ratio exerts higher level of correlation with the growth measure.

Liquidity on its own is moderately correlated with market capitalization and

highly correlated with turnover ratio. The correlation between the two ratios is 0.8581. This means that combining the two measures as explanatory variables in the same model is bound to cause a problem of multicollinearity. To avoid this, we used the two variables as separate explanatory variables in two different models.

Table 4: OLS results of the two models

	MODEL 1				MODEL 2			
Variables	Coefficient	Std. error	t-ratio	Prob.	Coefficient	Std. error	t-ratio	Prob.
C	-24060.19	15866.09	-1.516454	0.1415	-26898.24	16602.34	-1.620147	0.1173
TURN	62.28705	30.04137	2.073376	0.0482				
LIQ					110.9972	95.15534	1.166484	0.2540
OPEN	-28.49538	8.874448	-3.210947	0.0035	-28.59826	9.339757	-3.061992	0.0051
BMGDP	-104.5805	51.74090	-2.021234	0.0537	-129.0106	53.63744	-2.405234	0.0236
DCPGD	53.75713	60.06145	0.895036	0.3790	98.08546	56.85482	1.725191	0.0964
FDIN	12.53552	60.54779	0.207035	0.8376	1.529633	63.84850	0.023957	0.9811
GCFGDP	54.55003	22.83285	2.389103	0.0244	50.58521	23.89754	2.116754	0.0440
LABPOP	510.8904	297.0032	1.720151	0.0973	573.6046	310.2881	1.848619	0.0759
MCAPGDP	-10.17996	15.54768	-0.654758	0.5184	-20.66238	18.78966	-1.099668	0.2816
R-squared	0.631266				0.591669			
Adjusted R-squared	0.517810				0.466028			
F-stat (prob)	5.563946 (0.000373)				4.709224 (0.001183)			
Durbin-Watson stat	0.683620				0.651100			
Obs.	35				35			

The OLS result of model one of table 4 shows that the coefficient of determination of 63 percent and adjusted coefficient of determination of 52 percent shows that moderately, the independent variables have been able to capture the variability of the dependent variable. The F-statistic of 5.6 with a probability of zero percent indicates the joint contributions of the explanatory variables in explaining the dependent variable at one percent level of significance. With the Durbin-Watson statistic of 0.6836, one can say that this model suffers from the problem of autocorrelation. The consequence of this is that although the OLS estimates may be unbiased, they are no longer efficient as one may erroneously conclude that parameter estimates are more precise than they actually are. Significance test on variables are no longer reliable and another estimation technique has to be applied.

In model 2 of table 4, the coefficient of determination is high, the F-statistic with its probability and the Durbin-Watson statistic all behave in the same manner as that of model one. The presence of serial correlation implies that another analytical method that eliminates serial correlation has to be employed. The study employed the Cochrane Orcutt (CORC) method of generalized least squares (GLS) and the results is presented in table 5 below.

Table 5: The generalized least squares procedure (CORC adjusted)

	MODEL 1				MODEL 2			
Variable	Coefficient	Std. error	t-ratio	Prob.	Coefficient	Std. error	t-ratio	Prob.
C	14668.08	14713.27	0.996929	0.3287	138557.3	8379980.	0.016534	0.9869
TURN	18.45416	7.042397	2.620437	0.0150				
LIQ					62.95206	27.95483	2.251921	0.0338
OPEN	-1.986853	2.909979	-0.682772	0.5013	-0.872596	3.060242	-0.285140	0.7780
BMGDP	-9.763929	14.36030	-0.679925	0.5031	-11.60054	15.07632	-0.769454	0.4491
DCPGD	-23.11429	15.09248	-1.531510	0.1387	-20.14664	15.71266	-1.282192	0.2120
FDIN	-11.33230	15.36090	-0.737737	0.4678	-14.96412	15.99856	-0.935342	0.3589
GCFGDP	30.02515	11.91271	2.520430	0.0188	29.53917	12.68449	2.328764	0.0286
LABPOP	-312.3009	287.0834	-1.087840	0.2875	-327.9066	296.6056	-1.105531	0.2799
MCAPGDP	-1.792894	4.030239	-0.444861	0.6604	-9.947006	5.455653	-1.823247	0.0807
AR(1)	1.023116	0.041850	24.44745	0.0000	0.999410	0.041274	24.21413	0.0000
R-squared	0.968146				0.965854			
Adjusted R-squared	0.956201				0.953049			
F-stat (prob)	81.04922 (0.0000)				75.42954 (0.0000)			
Durbin-Watson stat	1.389172				1.400221			
Obs.	34				34			

The GLS result in model one has a coefficient of determination of about 97 percent and adjusted coefficient of about 96 percent showing that the explanatory variables have explained about 97 percent variability of growth. This is a good fit. Also, the F-Statistic of 81 and zero probability has shown the joint significance of the explanatory variables. The other model (model 2) also produces similar results with model one. The GLS result in model two has a coefficient of determination of about 97 percent and adjusted coefficient of about 95 percent showing that the explanatory variables have explained about 97 percent variability of growth. This is also a good fit. In addition, the F-Statistic of 75 and zero probability has shown the joint significance of the explanatory variables in explaining growth. Table 6 presents the Lagrange Multiplier test of the presence of serial correlation and the result is hereunder produced.

Table 6: Breusch-Godfrey Serial Correlation LM Test for model 1 and 2:

			Model 1				Model 2
F-statistic	0.108862	Prob. F(2,22)	0.8973	F-statistic	0.365167	Prob. F(2,22)	0.6982
Obs*R-squared	0.333185	Prob. Chi-Square(2)	0.8465	Obs*R-squared	1.092402	Prob. Chi-Square(2)	0.5791

Breusch-Godfrey Serial Correlation LM test for model 1 and 2 is presented above. The F-Statistics as well as the observations' R-squared for the two models are shown with their corresponding probabilities. The probabilities of F at the various degrees of freedom are 0.9 and 0.7 respectively. The probabilities of chi squares are also higher than 0.05 indicating the rejection of the presence of serial correlation.

The result of table 5 shows that growth in model one is explained significantly and positively by turnover ratio (Stocks traded, turnover ratio of domestic shares in %). A unit increase in turnover ratio, other things being constant can produce 18.5 unit increases in growth per capita. In the same vein, gross capital formation significantly influenced per capita growth positively and significantly. A unit rise in gross capital formation in relation to GDP causes growth to expand by 30.025 dollars. In this model also, the autoregressive root is also highly significant and a point to the fact that autocorrelation has been cured in this model.

The results of model 2 in table 5 shows that growth in model 2 is explained significantly and positively by liquidity ratio (stock market transactions to GDP (LIQ)). A unit increase in liquidity ratio, other things being constant can produce 62.952 unit increases in growth per capita. In the same vein, gross capital formation significantly influenced per capita growth positively and significantly. A unit rise in gross capital formation in relation to GDP causes growth to expand by 12.68 dollars. In this model also, the autoregressive root is also highly significant and a points to the fact that autocorrelation has been cured in this model.

In addition to the above, the autoregressive roots of the two model are around 1 by approximation and are highly significant. The coefficient of determination and adjusted coefficient of determination are so close validating the GLS estimates. Apart from this, the study therefore went further by applying the Ramsey RESET test to verify the validity of the GLS model. The process and results are hereunder described.

Table 6: Ramsey RESET Test Result

Specification: GDPPCC C LIQ OPEN BMGDP DCPGD FDIN GCFGDP LABPOP MCAPGDP AR(1)

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.575382	23	0.5706
F-statistic	0.331064	(1, 23)	0.5706
Likelihood ratio	0.485911	1	0.4858

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	13974.28	1	13974.28
Restricted SSR	984808.1	24	41033.67
Unrestricted SSR	970833.8	23	42210.17
Unrestricted SSR	970833.8	23	42210.17

LR test summary:

	Value	df
Restricted LogL	-222.8992	24
Unrestricted LogL	-222.6563	23

Ramsey (1969) observed that there are 3 types of specification errors encountered in regression specification error test (RESET). Given a model specified as:

$Y = X\beta + \varepsilon$

Where ε is the vector of disturbances with normal distribution $N(0,\sigma^2,I)$. Ramsey test is a test on omitted variables (X does not include all the relevant variables). Secondly, if there is wrong functional form. Thirdly, there is no correlation between the explanatory variables and the error term (this may be caused by error of measurement in X, simultaneous equation problem or correlated lagged Y values with ε). The hypothesis of Ramsey RESET is based on:

H_0: $N(0,\sigma^2,I)$.
H_I: $N(\mu,\sigma^2,I)$ $\mu \neq 0$

This test is based on an auxiliary regression:

$Y = X\beta + M\pi + \varepsilon$

The specification error test is based on the evaluation of the restriction $\pi = 0$. In this case, M is the vector of variable(s) omitted. RESET is an F-test on the significance of the coefficient of determination of the new auxiliary model due to the addition of the vector variable(s) M (

$$F = \frac{(R^2_{new} - R^2_{old})/number\ \ of\ \ new\ \ regressors}{(1-R^2_{new})/(n-number\ \ of\ \ parameters\ \ in\ the\ \ new\ \ \mathrm{mod}el)}$$

If the calculated F value is significant, say at 5 percent level, one can accept the alternative hypothesis of model misspecification and reject the null hypothesis. Otherwise, we accept the null hypothesis. The result in table 6 indicates that F-statistic value is 0.331064. At degrees of freedom of (1, 23), the probability value is 0.5706 which is greater than the 0.05 needed for the rejection of the null hypothesis, we therefore fail to reject the null hypothesis. We therefore conclude that the GLS model is not misspecified and is good enough for prediction and policy formulation.

The main finding of this study is that Nigerian stock market significantly propel growth via its liquidity. This finding is in agreement with the findings of Levine and Zervos (1996) who concluded that stock market's effect on growth is through the liquidity effect. According to them, many high returning yielding projects require long term fund's commitment. However, investors are always unwilling to release their funds for such investments in such a long period time. Without liquidity market, lower investments will be committed to such a high yielding projects. Levine (1996) also found that liquidity helps forecast economic growth. Levine and Zervos (1998) in another study also observed that stock market liquidity positively determine the aggregate economic growth.

Implication of the liquidity advantage of the Nigerian stock market is that the market can ease savings mobilization and thus further accelerate growth through raising capital and mobilizing them for productive usage. Liquidity market can assist in accomplishing government in achieving its monetary policy and thus further contribute to economic growth.

The findings of this study is in contrast with the finding of Demirguc-Kunt and Levine (1996) who cautioned on the beneficial role of stock market development to growth by saying that excessive liquidity of stock markets may harm growth in three ways. First, through the reduction of uncertainty of investments, greater liquidity can lead to dissavings. Secondly, saving rates may decline through the income and substitution effects. Thirdly, excessive liquidity may lead to investors' myopia. All these may hamper growth.

Another finding of this study is that in term of size; the Nigerian capital market has not performed well as it has not significantly mobilized savings and efficiently allocate funds to productive investments in such a way that it can contribute meaningfully to economic growth. The implication above finding is that by enhancing the size of the

stock market, domestic savings can be mobilized through various financial instruments made available to savers to diversify their portfolios.

Recommendation

The above findings showed that stock market can contribute significantly to Nigeria's economic growth via the liquidity ground. Given the role played by a functional and efficient market in economic growth in Nigeria and other developing countries, there is a dire need to remove all forms of legal, regulatory, tax and accounting impediments to the efficient flow of resources and efficient performance of this market. This is important because the supervisory system influence the market size and liquidity.

Government must ensure that sound macroeconomic environment is created to ensure that there is liquidity in the market. They can do this by ensuring that a good political climate is created to ensure market liquidity so that stock market can contribute meaningfully to Nigeria's economic growth. They must also ensure that there is a smooth integration of Nigeria's economy with the rest of the world to ensure a steady inflow of foreign capital to augment the local resources and further boost the economic growth.

It must be borne in mind that all forms of impediments to stock market development must be eased to facilitate liquidity which is the ability to trade stocks very easily with lesser risks and more attractively. Since there is a high interdependence of financial markets in any economy, the regulatory bodies must ensure that there is improvement in the financial systems so that practices such as hike in interest rates, excessive tax levies on financial institutions and their customers must be eased off if stock exchanges are to contribute meaningfully to growth in Nigeria.

There is also an urgent need for the re-positioning of the stock exchanges in Nigeria for better performances in the areas of excessive delays in dividends payment, stock transference, and unpaid dividends among others. All these have strong links with market liquidity and size and can hamper the growth potentials of the Nigerian economy.

Nigerian government must work towards greater level of stock market integration so as to tap or further attract more beneficial portfolio investment flows while avoiding volatile ones.In addition, government must create enabling environment so as to attract greater FDI inflows which are crucial for economic growth. We also suggests that the stock market should be consolidated and market infrastructure should be strengthened to increase the robustness and viability of the market and enhances diversification globally.

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