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Econometric Analysis of the Role of Stock Market on Economic Growth in Nigeria (1980 – 2014)

Chekube Philip Uzoka
Department of Economic, Banking and Finance
Benson Idahosa University, Benin City, Nigeria

Abstract
The research study examined the role of stock market on economic growth of Nigeria from the period of 1980-2014. This means that the performance of the stock market is an impetus for economic growth and development. The economic growth was proxied by Gross Domestic Product (GDP) while the stock market variables considered include; Market Capitalization Ratio (MCR), Value Traded Ratio (VTR) and Turn-Over Ratio (TOR). Applying Johansen co-integration, results show that the Nigerian stock market and economic growth are co-integrated. This implies that a long run relationship exists between stock market and economic growth in Nigeria as a result of the F-statistics in Ordinary Least Square (OLS) regression analysis which is significant at 5 percent using a two-tailed test. This is a clear indication of the relative positive role the stock market plays on the economic growth of the country. The evidence from this study reveals that the activities in the stock market tend to impact positively on the economy. Among other recommendations, the study therefore suggests that the government should remove impediments to stock market development in the form of tax, legal and regulatory barriers because they are sometimes disincentives to investment.
Keywords: Stock Market, Nigeria and Economic Growth

INTRODUCTION

Background to the Study

Traditional theorists believed that financial market in general has no correlation with economic growth. This proposition aroused studies on finding the effect of financial market on growth. Ample of studies have debunked the traditionalists and established association between stock market and economic growth. In a developing economy like Nigeria, the development and growth of stock markets have been widespread in recent times. Despite the size and illiquid nature of stock market, its continued existence and development could have important implications for economic activity. For instance, Pardy (1992) has noted that even in less developed countries capital markets are able to mobilize domestic savings and able to allocate funds more efficiently. Thus stock markets can play a role in inducing economic growth in less developed country like Nigeria by channelling investment where it is needed from public. Mobilization of such resources to various sectors certainly helps in economic development and growth. Stock market development has assumed a developmental role in global economics and finance because of their impact they have exerted in corporate finance and economic activity.

Ample of studies in Nigeria investigated the role of stock market development on economic growth. Most of the studies noted that Nigerian stock market spur economic growth (Ezeoha, Ogamba and Onyiuke, 2009 and Ogunmuyiwa, 2010). These studies in Nigeria found positive impact from stock market development to economic growth; this study is prompted by opposing studies witnessed in South Africa (Odhiambo, 2009 and Ndako, 2009). Odhiambo (2009) says that stock market development Granger-cause economic growth, Ndako (2009) says the direct opposite: economic growth Granger-cause stock market development; all in same country, with similar time series data. Also, a very recent study by Ake and Ognaligui (2010) posited that Douala Stock Exchange does not affect Cameroonian economic growth.

Stock markets are a vital component for economic development as they provide listed companies with a platform to raise long-term capital and also provide investors with a forum for investing their surplus funds. Stock markets therefore encourage investors with surplus funds to invest them in additional financial instrument that better matches their liquidity preferences and risk appetite. Better savings mobilization and critical to the growth and efficiency of the economy stock market liquidity again helps to reduce the downside risk and cost of investing in projects that do not pay-off for a long-term. With a liquid market the initial investors do not lose access to their savings for the durations of their investment project because they can quickly and easily sell their stake in a company as noted by (Bencivenga and Smith, 1991).

The stock market being a major component in the financial sector of most developing economics such as Nigeria serves a pivotal role in contributing towards economic growth through diversification, mobilizing and pooling of savings from difference investors and availing them to companies for optimal utilization. As much as the stock markets are important in facilitating privatization channels and diversification of the financial sector services, they also offer the investors alternative investments to put their fund in. however, they face serious constraints if not properly monitored and adequate measures taken to curb any externalities. Most stock market especially those in the developing countries face constraints which result in serious implications such as liquidity

issues, absence of activities and absence of well developed investors' base. On the strength of the above, this study attempts to dig out the empirical evidence in the context of Nigeria regarding the role of stock market development on economic growth. Specifically, this research study will investigates the role of stock market size and liquidity on economic growth.

Various researchers and policy makers alike have focused a lot of attention trying to understand the various ways in which economic growth can be enhanced. The relevance of policy implications cannot be overlooked due to the fact that, supposing the financial market development and with particular regard to the stock market can be an engine for growth; then the policy makers should focus their attention and energies towards establishing and sustaining a dynamic stock market in order to foster a sound and continued economic growth. Much of the literature has emphasized greatly on the role of the banking sector as the only organized capital market in most developing countries, and neglecting the potential impact of stock markets in efficient capital allocation and risk sharing in a liberalized financial market. In an effort therefore to better understand the relationship between stock market development and economic growth, more and more case studies might better identify the causal linkage between stock market trends and economic growth. The present research study therefore followed this line of thinking and examined the causality between stock market performance and the economic growth in Nigeria. It was an attempt to study the relationship between stock market performance and economic growth. The study therefore sought to examine the presence of causal linkage if any, between the stock market performance and economic growth in Nigeria.

Objectives of the Study

The broad objective of the study is to econometrically investigate the role of stock exchange on economic growth of Nigeria. However, the specific objectives of the study are as follows:

i. To examine the effect of market capitalization ratio on the economic growth of Nigeria;
ii. To ascertain the influence of value traded ratio on the growth of Nigeria economy;
iii. To examine turnover ratio as it affect market stability on the economic growth of Nigeria.

Research Hypotheses

The following null hypotheses are formulated to guide the research study at 5% significance level:

H_{01}: There is no significant effect of market capitalization ratio on the economic growth of Nigeria.
H_{02}: There is no significant influence of value traded ratio on the growth of Nigeria economy.
H_{03}: Turnover ratio does not affect market stability on the economic growth of Nigeria.

Empirical Literature Review

A good number of studies have been done on the roles of stock market development and economic growth some of which produced conflicting findings. Tuncer and Alovsat (2001) examined stock market-growth nexus and found a positive casual correlation between stock market development and economic activities. Chen and Wong (2004) elaborated that the nexus between stock returns and output growth and the rate of stock returns is a leading indicator of output growth. In the research study of Agarwal (2001) that investigated on stock market development and economic growth in African countries suggested a positive relationship between several indicators of the stock market performance and economic growth. This study was expanded by Mohtadi and Agarwal (2001) that covers 21 emerging markets over 21 years and found in addition that this relationship exists both directly as well as indirectly by boosting private investment behaviour. The studies then lend support to the financial intermediation literature as well as to the traditional growth literature.

Singh (1999), Stulz, (2000) and Scholtens, (2000) argue that banks are superior to stock markets as a means of enhancing economic growth. They questioned the usefulness of a stock market, even a well developed one. Evidence from the UK over a period of 30 years (1970-2000) showed that the stock market had not contributed positively to financing economic growth. Stulz (2000) points out that banks offer an alternative lower cost of capital to small firms, which might not be able to obtain finance from stock markets with their listing conditions. Banks also reduce the associated agency costs and the problem of information asymmetry, as they build and maintain a close association with firms and consequently deal with them, based on the developed reputation. Cetorelli and Gamberra (2001) highlight the fact that bank borrowers are also depositors and the existing information in the banks' possession on the borrowers' credit worthiness provides a distinct advantage to the banks. For competitive reasons also, enterprises may be unwilling to reveal to the general public the information which would be necessary in order to obtain funds from the stock market but would agree to provide it to their bank. The greatest advantage of banks, however, lies mainly in their monitoring and controlling mechanisms. The significance of the governance role absolutely assumes that potential investors are aware of how to run a firm. Based on this assumption, a majority view of the firm's potentials to investors may easily be ascertained. Cameron (1997) concludes that a bank-based system of finance is a far better system for developing countries. Demirguc-Kunt and Haizinga (2000), however, argue that the stock market is better as a means of financing growth, as it

provides a greater opportunity for competition, thereby encouraging entrepreneurship. Similarly, Arnold and Walz (2000) argue that stock markets are better as a means for finance than banks. They can extract a large share of the profit from firms, using inside information about them. Furthermore, stock markets perform a variety of functions that include helping investors to price and hedge risk more effectively.

An equity market allows a firm to diversify some of the risks it faces by allowing it to sell to other investors who are more willing bear these risks. Also, when firms belong to entirely new industries or their technologies are rapidly evolving, scarcity of information about the firms in the industry may exist. In such cases, the function of governance performed by banks may become irrelevant or inefficient. The stock market, however, may play this role more efficiently, particularly as stock prices in an efficient market continuously collect all available information on the firm, thus making stock prices a source of information of the true worth of a firm. Moreover, Levine and Zervos (1998a) find that the type of financial service provided by stock markets is different from the type of service provided by banks. Similarly, Levine (2002) argues that stock markets and banks provide financial services which are essential for the growth of a country and is of the opinion that the services provided by stock markets and banks may be complementary. Beck and Levine (2000) argue that stock markets and banks may complement each other in supplying financial services for economic growth rather than acting as substitutes. They support this with evidence from heavy external finance, using industries that show a faster rate of growth of firms in countries with a well developed financial system (both stock markets and banks).

Mabhunu (2004) showed by using the South African stock market that developing stock markets can be efficient. The study revealed that the market was weak-form efficient, contrary to the common view. Also Ojah and Karemera (1999) tested the efficiency of four Latin-American countries stock markets and found them to be weak-form efficient. Most of the studies that have tested the Nigerian stock market for efficiency have shown it as weak-form efficient; however, there are a few studies which have shown it as semi-strong efficient. Adelegan (2004) investigated the adjusted share prices to dividend announcements from 1991 to 1999. The results show negative and positive excess returns for the samples, paying dividend before and after announcement dates respectively. The results of the study also show the Nigerian stock market to be weak-form efficient. Similarly, Jefferis and Smith (2005), in their analysis, found the Nigerian stock market to be weak-form efficient. Emenuga (1998) is one of the few who have found the Nigerian stock market efficiency to be semi-strong form efficient. His study was, however, criticised as being based on questionable assumptions.

Osinubi (2001), ventured into knowing whether “stock market promotes economic growth”. The study employed the least square regression using data from 1980 to 2000. The result established positive link between economic growth and stock market development and suggest the pursuit of policies geared towards rapid development of the stock market. Udegbunam (2002) noted that Nigerian economy is moving towards increased liberalization, greater openness and greater financial development. He then studied the implications of these developments for industrial growth in Nigeria using simple model which relates industrial output growth to openness, stock market development and some control variables. The study suggests that openness to world trade and stock market development are among the key determinants of industrial output growth in Nigeria.

On the other hand, a study in Germany found that stock market volatility has a significant and negative impact on growth (Arestis, Demetriades and Luintel, 2001). Mishkin (2001) and Caporale and Soliman (2004) provided the evidence that an organized and managed stock market stimulate investment opportunities by recognizing and financing productive projects that lead to economic activity, mobilize domestic savings, allocate capital proficiency, help to diversify risks, and facilitate exchange of goods and services. Undoubtedly, stock markets are expected to increase economic growth by increasing the liquidity of financial assets, make global and domestic risk diversification possible, promote wiser investment decisions, and influence corporate governance that is, solving institutional problems by increasing shareholders’ interest value. With well-functional financial sector or banking sector, stock markets can give a big boost to economic development (Rousseau and Wachtel, 2000).

Azarmi *et al.,* (2005) suggested that the relevance of stock market development to economic growth is a function of economic policies prevalent in the economy of study. They examined the empirical association between stock market development and economic growth for a period of ten years around the Indian market “liberalization” event (1981-2001) with the aim to knowing whether Indian stock market is a casino or not. The study revealed: Indian stock market development is not associated with economic growth for period 1981-2001; relevance of stock market to economic growth during the pre-liberalization era; negative correlation between stock market development and economic growth for the post-liberalization era; Indian stock market is a casino for the sub-period of post liberalization and for the entire ten-year event study period.

Niewerburgh *et al.,* (2005) investigated the long term relationship between financial market development and economic development in Belgium using stock market indicators from 1873-1935. Their results suggested that institutional changes affecting the stock market explain the time-varying nature of the link between stock market development and economic growth. This supported Azarmi *et al.,* (2005) which purported that economic policy in vogue influences the relevance of stock market indicators on economic growth. Osei (2006) investigated both the

long run and the short run relationships between the Ghana stock market and macroeconomic variables. The study establishes that there is co-integration between the macroeconomic variables and Ghana stock market. Furthermore, the short-run dynamic analysis and evidence of co-integration means that there are both short-run and long-run relationships between the macroeconomic variables and the index.

Yartey and Adjasi (2007) studied critical issues and challenges of stock market development in Sub-Saharan Africa and found that stock markets have contributed to the financing of the growth of large corporations in certain African countries. The study found inconclusive evidence on the impact of stock markets on economic growth in African countries, but acknowledged that the stock market value traded seems to be positively and significantly associated with growth. The issue of causal effect of stock-growth nexus emanates here, though previous literatures reviewed here were not totally in agreement as to the relationship of stock market development in particular, and the general financial market with economic growth. Brasoveanu *et al.,* (2008) examine the correlation between capital markets development and economic growth in Romania using regression function and VAR models. The study revealed that capital market development is positively correlated with economic growth, with feed-back effect, but strongest link is from economic growth to capital market suggesting that financial development follows economic growth, economic growth determining financial institutions to change and develop.

Riman *et al.,* (2008) posed a big question as to whether there really is a link between stock market performance and economic growth in Nigeria, or are the stock market liquidity just highly correlated with some exogenous non-financial factors? Findings suggest that long-run relationship exist between stock market and economic growth. The study identified a unidirectional causality that runs from stock market to economic growth but suggest that caution should be exercised in interpreting this uni-directional causality since other non-financial exogenous variables such as have been identified to influence the direction of stock market development in Nigeria. In 2009, stock-growth nexus received much research concern from Nigerian academics. Their studies view the stock-growth concern from varying aspect and do not have unifying research findings regarding stock market development and economic growth in Nigeria.

Ezeoha, Ogamba and Onyiuke (2009) examined the nature of relationship existing between stock market development and the level of investment flows in a country with a high degree of macroeconomic instability; and whether the stock market plays a uniform role in attracting both domestic and foreign investments in such economic situation. The study shows that development in the Nigerian stock market over the years was able to spur growth in domestic private investment flows, but unable to do so in the case of foreign private investment; and that development in the country's banking system rather had some destabilizing effects on the flows of private investments. This study, according to the researcher, is among its kind to have empirically sort for and established some discriminate effects of stock market development in the flows of domestic and foreign private investment.

This study tries to link the relationship among the variables to spur economic growth with stock market development. Maku and Atanda (2009) further study these variables by posing a big research question: do macroeconomic indicators exert shock on the Nigerian capital market? This question aided them to examine the long-run and short-run effect of macroeconomic variables on the Nigerian capital market between 1984 and 2007. The Augmented Engle-Granger co-integration test they conducted revealed that macroeconomic variables exert significant long-run effect on stock market performance in Nigeria. Also, the employed error correction model showed that macroeconomic variable exert significant short-run shock on stock prices as a result of the stochastic error term mechanism. However, the empirical analysis showed that the NSE all share index is more responsive to changes in exchange rate, money supply and real output. In a nutshell, the study believed that macroeconomic indicators have simultaneous significant impact on the Nigerian capital market both in the short and long-run.

Adam and Tweneboah (2009) from Ghana disagreed with Ezeoha *et al.,* (2009) on the impact of Foreign Direct Investment (or Private Foreign Investment) on stock market development. Adam and Tweneboah (2009) found that there is a long-run relationship between FDI, nominal exchange rate and stock market development in Ghana. They posited that a shock to FDI significantly influences the development of stock market in Ghana. Ewah *et al.,* (2009) appraised the impact of capital market efficiency on economic growth in Nigeria, using time series data on capitalization, money supply, interest rate, total transaction and government development stock that ranges between 1961 to 2004. The result of the study shows that the capital market in Nigeria has the potential of growth inducing, but it has not contributed meaningfully to the economic growth of Nigeria. The study attributed the findings to the low market capitalization, low absorptive capitalization, illiquidity, misappropriation of funds among others. The study believed and suggested capital market remains one of the mainstreams in every economy that has the power to influence economic growth, hence it advised the organized private sector to invest in the capital market.

Ogunmuyiwa (2010) on stock growth nexus investigated the relationship as well as the channel through which investor's sentiment and liquidity affect growth. The study used time series data covering 1984 to 2005 in its investigation. The study found that both investor's sentiment and stock market liquidity Granger-cause economic growth in Nigeria. Nowbutsing (2009) also examined the impact of stock market development on growth in Mauritius and found Stock market development positively affects economic growth in Mauritius in the short

run and long run. This contribution agreed that stock market development spurs economic growth. A study from Goaied and Sassi (2010) conducted using an unbalanced panel data from 16 MENA region countries showed that there is no significant relationship between banking and growth. This reinforced the idea that banks do not spur economic growth.

Tachiwou (2010) studied the impact of stock market development on growth using the regional stock exchange of the West African Sub-region (*Bourse Régionale des Valeurs Mobilières*) and found that stock market development positively affects economic growth in West African monetary union both in short and long run. The causality effect that become a research concern with the study of Levine and Zervos (1998) and (1996) which gained popularity in 2000s started to received varying dimension of late. The issue of level and direction of causality has remained vague and inconclusive as researchers give opposing findings on the subject. Odhiambo (2009) studied the Stock market development and economic growth in South Africa using ARDL-Bounds Testing procedure from 1971-2007 and found a causal flow from stock market development to economic growth in short run and long run.

Ndako (2009) used similar time series data (quarterly: 1983:q1- 2007:q4) to examine causal relationship between stock market, banks and economic growth in South Africa both found opposing result. The research focused on stock market, banks and economic growth and concluded that long-run bi-directional causality exists between financial development and economic growth in the banking system; but unidirectional causality is seen from economic growth to stock market system in long-run. While Odhiambo (2009) says that stock market development Granger-cause economic, Ndako (2009) says the direct opposite: economic growth Granger-cause stock market development; all in same country, with similar time series data. Could it be that Vector Error Correction Model (VECM) used by Ndako (2009) gives opposing result from that given by research done with autoregressive distributed lag (ARDL) bounds test which Odhiambo (2009) adopted? More researches in South Africa would be of help to academics and policy-makers alike.

Hasan *et al.,* (2007) posited that profound changes have occurred in both the Chinese political and economic institutions over the years. They believed the pace of transition has led to variation across the country in the level of development. They then used panel data for the Chinese provinces to study the role of legal institutions, financial deepening and political pluralism on growth rates. The study uses regression models to explain provincial GDP growth rates. The study found that the development of financial markets, legal environment, awareness of property rights and political pluralism are associated with stronger growth.

Olofin and Afangideh (2008) investigated the role of financial structure in economic development in Nigeria using aggregate annual data from 1970 to 2005. The study developed a small macroeconomic model to capture the interrelationships among aggregate bank credit activities, investment behaviour and economic growth given financial structure of the economy. The study holds that a developed financial structure has no independent effect on output growth through bank credit and investment activities, but financial sector development merely allows these activities to positively respond to growth in output.

Another study conducted by Vazakidis and Adamopoulos (2009) with VECM in France support Ndako (2009) even in similar time series (1965-2007). Ake and Ognaligui (2010) took a different dimension and disagreed at first hand with the issue of causality. His study investigated causality relationship between stock market and economic growth in Cameroun with time series data from 2006 to 2010 and found that Douala Stock Exchange does not affect Cameroonian economic growth.

Model Specification

This study is based on the null hypothesis that there is no significant relationship between stock exchange development and economic growth in Nigeria. This hypothesis may be written as follows:

$$H_0: Growth \neq Stock \qquad 3.6$$

Where Growth is the time series of real GDP for a given relevant period and Stock is a proxy for stock market development over the same period. Stock market development can be measured by three basic traditional characteristics (Inanga and Emenuga, 1997). This includes stock market size measured by stock market capitalization and stock market liquidity measured by total value traded ratio and turnover ratio.

A common index often used, as a measure of stock market size is the market capitalization. Market capitalization equals the total value of all listed shares. In terms of economic significance, the assumption is that market size and the ability to mobilize capital and diversify risk are positively correlated. Liquidity is used to refer to the ability of investors to buy and sell securities easily. It is an important indicator of stock market development because it signifies how the market helped in improving the allocation of capital and thus enhancing the prospects of long-term economic growth. This is possible through the ability of the investors to quickly and cheaply alter their portfolio thereby reducing the riskiness of their investment and facilitating investments in projects that are more profitable though with a long gestation period. Two main indices are often used in the performance and rating of the stock market: total value traded ratio; and turnover ratio.

Total value traded ratio measures the organized trading of equities as a share of the national output.

Turnover ratio is used as an index of comparison for market liquidity rating and level of transaction costs. This ratio equals the total value of shares traded on the stock market divided by market capitalization. It is also a measure of the value of securities transactions relative to the size of the securities market. So, the equation for this study is:

$$\log GDP_t = \alpha_0 + \beta_1 \log MCR_t + \beta_2 \log VTR_t + \beta_3 \log TOR_t + \mu_t \quad 3.6$$

Where:

GDP_t = Real Gross Domestic Product over the time period;
MCR_t = Stock Market Capitalization Ratio over the time period;
VTR_t = Value Traded Ratio of domestic stock over the time period;
TOR_t = Turnover Ratio over the time period;
α_0 and β = unknown parameters to be estimated; and
μ_t = error term

Data Sources and Description

In order to fulfil the objectives of this study, a data collection guide was used to capture the required data. The study wholly depended on the use of annual secondary data from the 1980 to 2014 due to availability of reliable data on the statistical bulletin used. The NSE stock market variables are selected because it is able to measure price movements in selected, relatively stable and best performing of the economic growth at the bourse. Another benefit of the stock market variables selected was that it is based on a geometric mean of average prices of the constituent companies in Nigeria which are equally weighted, and that it is reviewed periodically to ensure that it reflects an accurate picture of market performance. GDP was picked as the preferred macroeconomic indicator because it's widely used by economists and policy makers alike to gauge the health of an economy, and on this account its variations are also relatively and quickly identified. The GDP and stock market variables were both collected from published statistical bulletin of Central Bank of Nigeria (CBN) and Nigeria Stock Exchange (NSE) report respectively.

EMPIRICAL ANALYSIS

Analysis of Results

Analysis of Unit Root Test Results

The standard Augmented Dickey-Fuller (ADF) unit root test was used to check the order of integration of the variables. The results obtained are reported in Table 4.1. Based on the ADF test statistic, it was observed that all the variables in the study became stationary at first difference. The null hypothesis is that the series is non-stationary, or contains a unit root. The rejection of the null hypothesis is based on MacKinnon (1996) critical values. The lag length are selected based on SIC criteria, this ranges from lag zero to lag two.

Results of Augmented Dickey Fuller (ADF) stationary test

Variable	ADF Statistic	Critical value	DW	Lag	Inference
logGDP	-4.2980	-2.9540	2.1081	2	I(1)
logMCR	-7.3753	2.9540	1.8969	2	I(1)
logVTR	-6.2514	2.9540	2.0129	2	I(1)
logTOR	-4.6424	2.9540	1.8717	2	I(1)

Source: Author Computation from Eview 7

The main assumption of ARDL is that included variables in model are having co-integrating order *I(0)* or *I(1)* or both. This lends support for the implementation of bounds testing, which is a three step procedure; in the first step we selected lag order on the basis of SBC because computation of F-statistic for co-integration is very much sensitive with lag length, so lag order of 2 is selected on lowest value of SBC. Given the existence of a long run relationship, in the next we used the ARDL co-integration method to estimate the parameters of the ARDL equation with a maximum order of 2 to minimize the loss of degrees of freedom. The results of bounds testing approach for long run relationship show that the ADF values of the variables are greater than the test critical values, implying that the null hypothesis of no co-integration cannot be accepted. In effect, there is indeed a co-integration relationship among the variables at 5% level of significance. In effect, the results of the bounds co-integration test make obvious that the null hypothesis of no co-integration of against its alternative is easily rejected at the one and ten percent significance level respectively.

Sensitivity analysis includes some diagnostic tests results which are the Durbin-Watson statistic values of the variables; confirm that there is no serial correlation, the model is properly specified, regressors are normally distributed and that there is no conditional heteroscedasticity in the distribution of residuals. The results indicate that economic growth proxy of GDP is positively and significantly associated with the Nigerian stock market. This highlights the importance and contribution of stock market development to economic growth in Nigeria. Financial intermediation through enhancement in relation to the stock market improves the growth of the economic through

causal channels as clearly evident from literature. Financial instability weakens the stock market-growth and finance-growth nexus through detrimental impacts that decelerate economic growth directly.

Analysis of Co-integration Test Results

Table 4.2 presents the results of the co-integration test. It examines the combine movement of the variables in the long-run following the methodology of Johansen (1988) and Johansen and Juselius (1990). The estimation results provide evidence of statistical long run relationship amongst log of the variables namely: market capitalization, value traded ratio, turn-over ratio and economic growth in Nigeria. As shown in Tables 4.2, there exists evidence of two and one long run relationships among the variables in the study between trace and max-eigen value.

Johansen Co-integration tests for the Variables

Johansen Test Statistics				
Testing Hypothesis	Trace value	Critical value [prob]**	Max-Eigen value	Critical value [prob]**
None*	61.7087	47.8561[0.0015]	30.2470**	27.5843[0.0222]
At Most 1*	31.4617	29.7971[0.0319]	16.5886	21.1316[0.1923]
At Most 2	14.8731	15.4947[0.0619]	8.2906	14.2646[0.3499]
At Most 3*	6.5825	3.8415[0.0103]	6.5825**	3.8415[0.0103]
*Denotes rejection of the null hypothesis at the 5% level. Figures in parentheses are MacKinnon-Haug-Michelis p-values, (1973)				

Analysis of Regression Results

To capture short-run deviation that might have occurred in estimating the long-run co-integrating equation, an OLS regression was formulated. The OLS model is estimated with respect to the dependent variable, economic growth as measured by GDP. In Table 4.3, the GDP responded positively to market capitalization, value traded and turn-over ratio even after first difference at second lag. However, the coefficient value of the market capitalization ratio although negative but significant show that a five percent rise in the market capitalization ratio will improve the economic growth by 80.31 percent through investors' incentive to invest in the economy.

The value traded and turn-over ratio both has a coefficient that is positively signed. They both show that a five percent rise in value traded and turn-over ratio will improve the economic growth by 44.56 and 65.34 percent respectively through significant channels that enhance growth in the Nigerian economy. The R-squared explains 93.74 percent of the role of stock market variables on economic growth in Nigeria. The F-statistic (154.66) shows that all the stock market variables, that is, market capitalization ratio, value traded ratio and turn-over ratio are significant in explaining the variations in economic growth in Nigeria. The error term value is 6.26. This means that 6.26 is the "error term" of the estimated model of economic growth. Such error can be used to relate the short-run deviation of growth performance to the long-run target. The analysis holds that the estimated OLS regression model will act rightly to correct any deviations from the long-run equilibrium value and this indeed guarantees the convergence of long-term forecast of economic growth based on the variation in stock market variables used in the model to the mean value. The Durbin-Watson Statistics value of 2.06 shows that there is no problem of serial correlation, hence the estimated coefficients are statistically unbiased, the variances and the standard errors of OLS estimate of growth model are efficient and consistent. In effect, the growth is reliable for forecasting.

Ordinary Least Square (OLS) Regression Results
Dependent Variable: LOGGDP
Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGMCR	-0.803136	0.258246	-3.109967	0.0040
LOGVTR	0.445600	0.173933	2.561905	0.0155
LOGTOR	0.653355	0.268576	2.432662	0.0210
C	4.458371	1.771556	2.516641	0.0172

R-squared	0.937369	Mean dependent var	14.28457
Adjusted R-squared	0.931308	S.D. dependent var	2.358356
S.E. of regression	0.618104	Akaike info criterion	1.982889
Sum squared resid	11.84362	Schwarz criterion	2.160644
Log likelihood	-30.70057	Hannan-Quinn criter.	2.044250
F-statistic	154.6552	Durbin-Watson stat	2.060194
Prob(F-statistic)	0.000000		

Source: E-view 7 Output

Summary of Regression Result

GDP = 4.458371 – 0.8 031 MCR + 0.4456 VTR + 0.6534 TOR
S.E = (1.7716) (0.2582) (0.1739) (0.2686)
Tcal = (2.5166) (-3.1099) (2.5619) (2.4326)
R^2 = 0.9373 Adj.R^2 = 0.9313 Dw = 2.0601
F-stat = 154.65; Prob (f-stat) = 0.000000

The estimated OLS results indicate that all the explanatory variables namely: market capitalization ratio, value traded ratio and turn-over ratio stimulates the economic growth of Nigeria. All the preceding tests before OLS analysis validate a correct functional form, serially independence of the residuals, normality and hence homoskedasticity. So, the estimated regression results are reliable for purpose of policy.

F-Distribution Test Result

The result of F-distribution test with V_1 and V_2 degree of freedom at 5% significant level for the model are shown in table...

To estimate F_{tab}
$V_1 = K - 1 = 3 - 1 = 2$
$V_2 = N - K = 35 - 2 = 32$

Table 4.4: Result of F-Distribution Test

F_{cal}	F_{tab}	Prob	Implication	Decision
154.66	3.27	0.000000	154.66>3.27	H_0 is rejected

Source: Author computation from E-view

From the above, F_{cal} (154.66) is greater than F_{tab} (3.27). This is a clear indication that the whole regression is statistically significant due to the overriding effect of the estimated variables considered. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted which indicates that there is significant role of stock market on economic growth of Nigeria within the period considered.

Test of Hypotheses

Hypothesis 1:

H_{01}: That there is no significant effect of market capitalization ratio on economic growth in Nigeria
β_1
H_0: $\beta_1 = 0$
H_1: $\beta_1 \neq 0$

Decision Rule

Given that the computed t-ratio (3.1099) is greater than the t-tabulated (2.037) we thus reject H_0 in favour of H_1 with the conclusion that β_1 is statistically significant.

Hypothesis 2:

H_{02}: That there is no significant effect of value traded ratio on economic growth in Nigeria
β_2
H_0: $\beta_2 = 0$
H_1: $\beta_2 \neq 0$

Decision Rule

Given that the computed t-ratio (2.5619) is greater than the t-tabulated (2.037) we thus reject H_0 in favour of H_1 with the conclusion that β_1 is statistically significant.

Hypothesis 3:

H_{03}: That turnover ratio does not affect market stability and economic growth in Nigeria
β_3
H_0: $\beta_3 = 0$
H_1: $\beta_3 \neq 0$

Decision Rule

Given that the computed t-ratio (2.4326) is greater than the t-tabulated (2.037) we thus reject H_0 in favour of H_1 with the conclusion that β_1 is statistically significant.

Policy Implications

Given the empirical results reported above, many policy implications can be drawn.

- Firstly, since stock market development (captured by market capitalization ratio-GDP) has positive influence on economic growth, it implies that higher stock market capitalization increases the ability of firms to raise capital. Thus, they (firms) will be able increase investment spending and expand production of goods and services which translate to higher growth rate overtime.
- Secondly, the statistical negative effect of market capitalization ratio on economic growth may be attributed to the fact that Nigeria is yet to put appropriate and effective policies in place in order to reap the benefits of international trade as well attract foreign investment. It is believed that market capitalization facilitates not only the inflow of foreign investment but also enhance the production capacity of firms that do business in the country as well as increase their access to capital on the stock market. This in turn increases output of goods and services, and raise economic growth. Moreover, given that rising discount rate is shown to have positive impact on economic growth, raising the productivity and efficiency of firms would increase their rate of returns. If the rate of returns of firms is higher than the rate at which they borrow (discount rate) from the banks, it would induce them to increase production and accelerate economic growth.
- Furthermore, the statistical positive impact of value traded and turn-over ratio on economic growth may be due to slight or no difficulties involved in trading shares such as moderate or low transaction costs, non-delay in the issuance of shares certificate to mention just few. These sometimes contribute to production and non-liquidity shocks, as well as non contraction of output and increase in economic growth.

SUMMARY, RECOMMENDATIONS AND CONCLUSION

Summary of Findings

This study sets out to investigate the role of stock market on economic growth in Nigeria using the Ordinary Least Square (OLS) regression method of analysis. Our findings suggest as follows:

- That there exists significant positive relationship between market capitalization ratio and economic growth of Nigeria.
- That there exists significant positive relationship between the value traded ratio and economic growth in Nigeria.
- That there exists significant positive relationship between turnover ratio and economic growth in Nigeria.
- Stock market stimulates economic growth performance in Nigeria by enhancing necessary stock market policies.

Policy Recommendations

Based on the findings of the study, the study suggest recommendation pertinent to policy makers, financial market regulators and future researchers

1) Encouraging greater population of the income citizenry to invest in the stock market by fine-tuning of indices that may result on long term pessimism in the stock market like unpaid dividend, delay in transfer on stock and delay in divided payment. This way the market will grow, capital accumulation will be increased and national productivity may be improved.
2) Trading impediments such as transaction cost should be reviewed to encourage more active trading.
3) The illiquidity status of the capital market should be improved to make it more viable for investors to invest and such over time can contribute to economic growth.
4) Government should employ appropriate trade policies that promote the inflow of international capital and foreign investment, so as to enhance the production capacity of the nation.
5) Moreover, government should strengthen the capacity of the Nigerian security and exchange commission so as to check and prevent sharp practices by market operators (particularly speculators) in order to safeguard the interest of shareholders. Recent experience has shown that the confidence of many shareholders is waning due to the declining fortune of the stock market and many are reluctant to invest in shares and other securities. Besides, it has been argued by some analysts that most activities on the stock market are manipulated by some operators (speculators). This tends to undermine the growth potential of the stock market with its negative consequences on the economy.

Conclusion

An attempt has been made to examine the relationship between stock market development and economic growth in Nigeria, by employing the OLS regression method. It was shown stock market variables (market capitalization ratio, traded value ratio and turn-over ratio) contribute positively to economic growth. The recommendations therein include among others- removal of impediments to stock market development in the form of tax, legal and regulatory barriers; improvement of the trading system in order to increase the ease with which investors can

purchase and sell shares; development of the nation's infrastructure so as to encourage firms to grow and increase the ease with which they raise capital or funds on the stock market; and strengthening the capacity of the Nigeria's security and exchange commission to check the activities of stock market speculators.

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Appendix I: Data for Analysis

Year	Gross Domestic Product (GDP) #'Million	Market Capitalization Ratio (MCR)	Value Traded Ratio (VTR)	Turn-Over Ratio (TOR)
1980	49632.3	8.988498	388.7	7138
1981	47619.7	10.43855	304.8	10199
1982	49069.3	10.24205	215	10014
1983	53107.4	10.86101	397.9	11925
1984	59622.5	9.249691	256.5	17444
1985	67908.6	9.823064	316.6	23571
1986	69147	9.826603	497.9	27718
1987	105222.8	7.88574	382.4	20525
1988	139085.3	7.204787	850.3	21560
1989	216797.5	5.926589	610.3	33444
1990	267550	6.114147	225.4	39270
1991	312139.7	5.871534	491.7	49029
1992	532613.8	5.871534	491.7	49029
1993	683869.8	5.474156	804.4	40398
1994	899863.2	7.375443	985.9	42074
1995	1933212	9.326713	1838.8	49564
1996	2702719	9.326713	1838.8	49564
1997	2801973	10.062291	10330.5	78089
1998	2708431	9.692697	13571.1	84935
1999	3194015	8.452684	14072	123509
2000	4582127	9.362464	28153.1	256523
2001	4725086	14.01033	57683.8	426163
2002	6912381	11.03816	59406.7	451850
2003	8487032	16.02445	120402.6	621717
2004	11411067	118.49082	225820	973526
2005	14572239	19.90085	262935.8	1021967
2006	18564595	27.58477	470253.4	1367954
2007	20657318	64.35492	1076020	2615020
2008	24296329	39.35162	1679144	3535631
2009	24794239	34.21763	685717.3	1739365
2010	29205783	22.79001	799910.9	1925478
2011	25348122.24	27.19477213	799158.136	1846152.637
2012	26344277.33	30.07513083	695381.2562	1819042.516
2013	25990459.85	26.46552766	743641.7919	1906376.525
2014	28370649.87	31.15173421	722609.7055	1785815.151

Source: Author Computation from Statistical bulletin of Central Bank of Nigeria (CBN, 2014) and Nigeria Stock Exchange (NSE, 2014) Bulletin