

## **Capital Market Liquidity and Economic Growth in Nigeria: An Autoregressive Distributed Lag (ARDL) Approach**

Yohanna Panshak<sup>1</sup>, Musa Esuwa Shingil<sup>2</sup>

*Department of Economics Plateau State University, Boko PMB 2012, Jos-Nigeria*

---

**Abstract:** *This research seeks to examine the relationship between capital market liquidity and economic growth in Nigeria using time series data spanning 1981 to 2014. It employs Autoregressive Distributed Lag Model (Bound Test). It reveals that there exist a long run relationship between capital market liquidity and economic growth. The extent to which disturbances in the short run are tied up to the long run position is about 84 percent. The empirical result is largely in conformity with several researches on the relevance of an active and liquid stock market in economic growth process. The policy implication of this work is that stock market can be relied upon for advancing growth in Nigeria. A Liquid capital market enhances allocation of funds to desired sectors and projects meaningful for economic prosperity. The research outcome could help policy makers and corporate managers improve resource allocation and decision making. This permits investors to trade in equities/stocks with ease thereby avoiding high costs if they need to diversify their portfolios. This lowers liquidity risks faced by investors, stimulates confidence in the market and finally, enhances economic growth.*

---

### **I. Introduction**

The relationship between capital market liquidity and economic growth has been a long debated subject. The search for cheap and sustainable means of advancing economic growth by various nations of the world has been linked with the role the market in efficient allocation of scarce resources. As documented by Levine and Zervos (1998) in cross-country econometric evidence shows that, in a sample of 47 countries, stock market liquidity contributed a significant positive influence on GDP growth between 1976 and 1993. They found that stock market liquidity, measured in various ways, is “a robust predictor of real per capita gross domestic product growth, physical capital growth and productivity growth,” after controlling for a range of other potential sources of growth.

Examining the relationship between stock market liquidity which proxies implicit cost of trading shares with macroeconomic conditions (Apergis et al, 2015) provide evidence that stock market liquidity contains strong and robust information about the condition of the economy for both the UK and Germany in the presence of well-established leading indicators. This evidence has been replicated in many studies. Capital market indeed is a highly specialized and organized financial market and indeed essential agent of economic growth because of its ability to facilitate and mobilize saving for investment.

Evidences from recent empirical economic studies suggest that liquid, deeper, broader, and better functioning financial markets can stimulate economic growth. There are well-built conjectural explanations to deduce that market liquidity will positively affect firm performance. This is primarily because stock/shares are the exchange instruments (currency) which commands both cash flow and control rights. The tradability of this currency performs a pivotal role in the governance, valuation, and performance of firms. In each case, liquidity enhances firm performance primarily through higher operating profitability. As the overall firm productivity and earning increase, investor confidence and economic growth is stimulated.

In theoretical analyses, liquid markets have been shown to permit non-blockholders to intervene and become blockholders. The block holder is an owner of a large amount of a company's shares and/or bonds, or block. In terms of shares, these owners are often able to influence the company with the voting rights awarded with their holding. It also facilitates the formation of a toehold stake, promote more efficient management compensation, reduce managerial opportunism, and stimulate trade by informed investors thereby improving investment decisions through more informative share prices (Fang, et al 2009). A toehold stake is usually not more than five percent purchase of insignificant stake in a firm that allows the shareholders a *toe-holds* grip on the company and its decision making. In the instance of a shareholder vote, toehold shareholders hold a critical place in such votes.

The development of capital market in Nigeria as in other emerging economies has been induced by the government. Though the history of Capital Market in Nigeria can be traced to 1946 when the British Colonial Administration floated a N600, 000 local loan stock bearing interest at three and half per cent for financing developmental projects under the Ten-Years Plan Local Ordinance, formal capital market in the country came into fruition with the establishment of the Lagos Stock Exchange (LSE) in 1960 which commenced operation in 1961. On December 2nd 1977, the memorandum and article of association creating the Lagos Stock Exchange

was transformed into the Nigerian Stock Exchange, with branches in Lagos, Kaduna, Port-Harcourt, Yola and now the Federal Capital Territory (FCT) Abuja other cities.

Capital market contributes to economic development in various ways: facilitating the privatization process; diversifying financial services; facilitating long term capital mobilization; provision of alternative investment opportunities; attracting foreign capital inflows; and serving as a signal of overall macroeconomic performance. The stock market serves as a veritable tool in the mobilization and allocation of savings among competing uses which are critical to the growth and efficiency of the economy. The role of capital market in resource mobilization cannot be over emphasized. Being one of the major features of modern democracies, the stock market constitute most relevant institution for massive capital formation which policy maker of the economy must be fully informed of, if the goal of economic growth and transformation must be realized (Nyong, 1997).

### **Statement of the Problem**

There is abundant evidence that most Nigerian businesses lack long-term capital. The business sector has depended significantly on short-term financing such as overdrafts to finance long-term capital. Based on the maturity matching concept, such financing is risky. Such firms need to raise an appropriate mix of short- and long-term capital (Demiurgue-kunt & Maskimovic 998; & Adenuga, 2010).

Given that Finance is the life-blood for any business enterprise, funding for economic activities must be readily available, adequate and appropriate. In the Nigerian context, the issue of illiquidity and inadequacy is evidenced by abandoned projects abounding everywhere. As a result, some otherwise viable projects have collapsed due to the use of short-term funds to finance projects with long gestation period. The need to repay such loans before the projects could generate sufficient funds to sustain them led to these massive failures.

Apart from the social and institutional factors that inhibit the process of economic development in Nigeria, the bottleneck created by the illiquidity, dearth and inappropriateness of finance to the economy, constitute major setbacks to economic prosperity and progress. The lack of a liquid and vibrant capital market can lead to underutilization of financial resources. The developed capital market provides access to the foreign capital for domestic industry. Thus, capital market definitely plays a constructive role in the overall development and transformation of an economy.

Nigeria needs long term resources for public investment in roads, power, water, education, health, agriculture, technology and other areas for financing of Change agenda of the current democratic government In conclusion, the current vision of the Nigeria Stock Exchange (NSE), which is to be the leading stock exchange in the African region for capital formation, driven by transparency, innovation, efficiency and liquidity thereby growing to become the gateway to African markets requires that the country deepens its capital market, widens its scope in line with globalisation – the language of the 21st century – and moves its economy towards attaining overall economic growth Most literatures on the Nigerian capital market have recognized the performance the market has recorded in recent times. However, the vital role of the capital market in economic growth and transformation has not been extensively and empirically investigated. This situation creates a lacuna that this research seeks to bridge. The main objective of the study is therefore to examine the impact of capital market liquidity on economic growth. The research is made up of five sections: section two comprehensively review both theoretical and empirical literatures relevant to the research. Section three discusses the measures of stock market. Chapter four concentrates on estimation and discussion of research findings. Chapter five contains conclusion and policy implications of the research.

## **II. Brief Review of Related Studies**

Capital Market or stock market as often called is one of the most significant aspects of every financial market. It is a financial market for the buying and selling of long-term debt-or equity-backed securities. This market channels the wealth of savers to those who can put it to long-term productive use. Capital market is identified as an institution that contributes to the socio-economic growth and development of emerging and developed countries (economies) through its vital role in intermediation process (Oke & Adrusi 2012, 22).

Modern capital markets have two related parts: (i) the debt and equity markets that intermediate funds between savers and those that need capital, and (ii) the derivatives market that consists of contracts such as options, interest rate, and foreign exchange swaps, typically associated with these underlying debt and equity instruments. The debt and equity markets help allocate capital within a financial system. The derivatives market helps investors and borrowers to manage the risks inherent in their portfolios and asset/liability exposures (Dudley & Hubbard 2004, 4).

Numerous studies have proposed that the development of stock market is able to improve growth performance through its positive effects on capital flows, diversification of investment risk and pooling funding for the long-term industrial projects and provision of adequate liquidity (King & Levine 1993; Atje & Jovanovic 1993). A study by (Smimou, 2014) confirms the importance of liquidity provided by the secondary market and

elucidates the predictability role of market liquidity on future economic growth. The researcher also observes that during periods of high exchange-rate volatility growth becomes affected by stock market liquidity movements. This situation is significantly motivated by information technology which makes capital market more efficient as attendant stock prices now reflect important information and investors' perception of stocks more swiftly. Information and Communication Technology has made the capital market more effective and efficient in its quest to foster economic growth and development through resource mobilization and re-distribution. This is made possible through its vital role in intermediation process in many market oriented economies.

In another filament of the research, there are studies that investigate equity-market order flows, which are closely connected to capital market liquidity, examine the information composition of two dissimilar estimates of aggregate equity-market order flows for future macroeconomic essentials and expected stock market returns. They find out that both can forecast potential growth rates of industrial production and real GDP, up to four quarters in advance, and this outcome is robust and strong even subsequent to controlling for variables associated with common equity pricing factors (Kaul & Kayacetin, 2009).

Similarly, (Beber et al, 2011) tackle how the issue of order flows movements by investors across equity sectors is related to current and future economic conditions. Their results show that large-sized active order flows in the materials sector can forecast a growing economy, while large-sized active order flows into consumer discretionary, financials, and telecommunications estimate a contracting economy. Making use of US and Norwegian stock market information (Naes et al. 2011) show that stock market liquidity (in terms of the trading costs of equities) can be used as a dominant most important gauge of the real economy, even after controlling for the existence of other variables, which are comprehensively used in preceding pertinent empirical literatures for predicting business cycles. Their study utilises a massive US dataset over the period 1947–2008 along with a exclusive dataset for Norway straddling the period 1990–2006. The investigators also find out an essential association linking the size of the firms and the information content of liquidity in predicting GDP growth, a finding that is consistent with the “flight-to-quality” effect.

Using Nigeria data, capital market is viewed as the driver of any economy to growth and development because it is essential for the long term growth capital formation. Thus, it provides the necessary lubricant that keeps turning the wheel of the economy. It is not only providing the funds to projects of best returns to fund owners. This allocation function is critical in determining the overall growth of the economy (Okereke-Onyuike, 2000). One of those important functions of the capital market is to encourage indigenous enterprises to develop its peculiar technologies through accessibility to funds and expertise through international connection. This has achieved tremendously. Moreover, most of the enterprises benefitted from the implementations of the Nigeria Enterprises promotion Acts and the privatization policies through the market. Both policies promoted indigenous enterprises, which are the main engine of economic growth and development in an economy. On the contrary, the function of stock markets in improving informational asymmetries has been seriously criticised on the basis that stock markets reveal information through price changes rapidly, creating a free-rider problem that retards investor willingness to perform valuable search (Odit, 2009). This goes in line with (Harris, 1997) and (Anyanwu, 1998) who did not find strong evidence that stock market activity affects the level of economic growth.

Despite the aforementioned debate, a consensus has emerged in recent times, which asserts that economic growth in a modern capitalist economy almost certainly revolves around an efficient capital market that is able to pool domestic savings, mobilize foreign capital, and allocate the sum to the most productive sectors of the economy.

In the Nigerian context, little empirical research has extensively evaluated the development of stock market using bound test (ARDL) econometric technique. Hence, this research seeks to add to the stock of research materials and give practicable policy recommendations to further deepen and make the market more liquid.

### **III. Measures of Market Liquidity**

Capital market is a crucial component of a good working financial system and a critical vehicle for a nation's development. Therefore, achieving high growth depends on the amount of capital and other factors needed for production which largely depends on liquidity and how developed the market is. Stock Market Liquidity is an important attribute of stock market development because theoretically, the more liquid stock market, the greater it improves the allocation of capital to their optimal use, influence investment in the long term and facilitate technological innovation, thereby enhancing long-term growth.

Greater liquidity also has an unswerving impact on the effectiveness of the governance function of the stock market. First, increased market activity encourages information acquisition, which in turn increases the information content of share prices. Secondly, the effective use of the stock market for corporate control activities requires that the market be liquid. Takeovers require a liquid capital market where bidders access a

vast amount of capital at short notice. Increased liquidity can also reduce the cost of equity capital through a reduction in the expected return that investors require when investing in equity to compensate them for the risks i. e., risk premium.

There are several measures developed in finance literature that try to estimate stock market liquidity. The high frequency information require intraday on bid/ask quotes, order flows, volume of trade and so on, which are not always readily obtainable over long time horizon. As a consequence, the research adopts the low frequency data on a yearly basis which are largely available in a developing economy such as ours.

The rationale behind employing turnover ratio (TOR) and total value of securities traded ratio (TVR) are of two basic fold: they are uncomplicated and straightforward to estimate and do not demand large amount of data or restrictive assumptions. Secondly, they are most commonly used determinants of liquidity utilised by practitioners and investment professionals and have been extensively used in the important literatures and in other aspects of asset pricing (Apergis et al, 2015). Measures of market liquidity may reflect the function of the market for corporate control as well. Therefore, a measure of market liquidity may be a good proxy for information production as well as the monitoring control function of capital markets. The two basic measures of liquidity include:

- (i). **Total Value of Shares Traded Ratio (VTR)**: is the total value of shares traded on the exchange divided by GDP.. It measures the frequency of trading as a ratio of general economic performance. The expected relationship with economic growth and transformation is positive (Demirguc-Kunt- Levine 1996 & Levine - Zervos 1996). This is calculated as;  $TVR = \text{Total value shares traded} / \text{Gross domestic product}$   $TOR = TVST / GDP$
- (ii). **Turnover Ratio (TOR)**: this measures the ability of the stock market to facilitate stock trading internally. High turnover ratio is often used as an indication of low transaction cost in the stock market. The turnover ratio complements market capitalization. A small but active market will have small capitalization but high turnover. Although total value traded ratio captures trading compared to the size of the economy, turnover measures trading relative to the size of the stock market. It also indicates liquidity and awareness of stock market in an economy. The expected relationship of the variable with economic growth and transformation is positive. The total value of shares traded on the exchange divided by GDP. It measures the frequency of trading as a ratio of general economic performance (Levine & Zervos 1996).  $TOR = \text{Total value of shares traded} / \text{Stock market capitalisation}$   $TOR = TVST / SMC$

#### IV. Data Analysis

Here, the research attempts to empirically determine relationship between capital market liquidity and economic growth using Bound Test (ARDL). The rationale behind this methodology is that it performs better than those other conventional techniques when the sample size is small and when the variables are of different order of integration. Therefore, conducting stationarity may not be necessary. Our data sample size is relatively small (33 years) and all data are of the same order of integration except GDP growth which is stationary at level. We confirm the validity of our estimates by carrying out several diagnostic checks on our residuals by testing for serial correlation LM test, heteroscedasticity test as well as CUSUM stability test were carried out.

ARDL has two major components in the model: the short dynamic effects of the regressors, and the long-run component. The research went further to test for adjustment to long run equilibrium. Data is basically secondary from Security and Exchange (SEC) data base, Central bank statistical bulletin and World Bank data bank.

#### Estimation of the Model

This standard representation of ARDL (2) with both short run effects and long run components is as follows:

$$\Delta GDPg = \alpha_0 + \beta_1 \sum_{i=1}^j \Delta GDPg + \beta_2 \sum_{i=1}^j \Delta TOR + \beta_3 \sum_{i=1}^j \Delta TVR_{t-1} + \theta_4 GDPg_{-1} + \theta_5 TOR_{t-1} - \theta_6 TVR_{-1} + \epsilon_t$$

Where:

GDPg = Gross domestic product growth rate (measure of economic growth)

( $\alpha_0$ , ) = Constant term

TOR = Turnover Ratio

TVR = Total values of shares traded

$\epsilon_t$  = Where  $\epsilon_t$  is a random "disturbance" term, which we'll assume is "well-behaved" in the usual sense. In particular, it will be serially independent

$\sum_{i=1}^j \Delta$  lag period up to  $j^{\text{th}}$  period (from 1 to 2)

$\beta_{ij}$  = Short run multipliers/short run dynamics

$\theta_i$  = long run multipliers

All variables were lagged by two periods except GDPg. Some diagnostics evidences suggest the dropping of the second lag. (See table 1)

**Lag Selection**

We started by estimating an over paramatized equation with six lags and consistently delete insignificant lags to obtain a parsimonious model having only two lags based on akaike information criterion (AIC)  $AIC=T.log(RSS)+2k$  and Schwarz criterion(SIC) =  $T.log(RSS) + k.log(T)$ .

Where T = NO. Of observations, k = No. of parameters estimated, including the constant term. These criteria are based on a high log-likelihood value, with a "penalty" for including more lags to achieve this. The form of the penalty varies from one criterion to another. Smaller value of an information criterion is much preferred to larger one. The model with two lags had the lowest values of AIC and SIC 7.04 and 7.46 respectively compared to model with six lags 7.20 and 8.26 (See table 1):

**Table 1: Lag selection**

Lag Length	AIC	SIC
Lag 6	7.20	8.26
Lag 4	7.30	8.10
Lag 2	7.04	7.46

Source: Authors' computation from E-view

**Table 2: Estimated standard ARDL**

Dependent Variable: GDPG  
 Method: ARDL  
 Date: 11/30/16 Time: 19:36  
 Sample (adjusted): 1984 2014  
 Included observations: 31 after adjustments  
 Maximum dependent lags: 1 (Automatic selection)  
 Model selection method: Akaike info criterion (AIC)  
 Dynamic regressors (2 lags, automatic): D(TOR) D(TVR)  
 Fixed regressors: C  
 Number of models evaluated: 9  
 Selected Model: ARDL(1, 2, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDPG(-1)	0.251234	0.171874	1.461730	0.1573
D(TOR)	-0.764270	0.198239	-3.855290	0.0008
D(TOR(-1))	-0.431057	0.216344	-1.992458	0.0583
D(TOR(-2))	-0.412124	0.216449	-1.904022	0.0695
D(TVR)	0.476885	0.102314	4.660997	0.0001
D(TVR(-1))	0.117097	0.121389	0.964641	0.3448
D(TVR(-2))	0.220938	0.106247	2.079482	0.0489
C	3.872052	1.266883	3.056360	0.0056
R-squared	0.551854	Mean dependent var		4.906452
Adjusted R-squared	0.415462	S.D. dependent var		7.350281
S.E. of regression	5.619665	Akaike info criterion		6.508057
Sum squared resid	726.3546	Schwarz criterion		6.878118
Log likelihood	-92.87489	Hannan-Quinn criter.		6.628688
F-statistic	4.046079	Durbin-Watson stat		2.170561
Prob(F-statistic)	0.005005			

\*Note: p-values and any subsequent tests do not account for model selection.

The standard ARDL model with three regressors and five independent lagged variables was estimated. The standard ARDL model shows that all independent variables are all statistically significant at 5 and 10 % levels of significance except lag value of GDP (GDP<sub>t-1</sub> and TVR<sub>t-2</sub>. Correlation of multiple determination of 55 % suggest that the model is fit. This supported by F statistics: 4.046079 > 0.005.

**Bound Testing**

The ARDL / Bounds Testing methodology of Pesaran and Shin (1999) and Pesaran *et al.* (2001) has a number of features that many researchers feel give it some advantages over conventional cointegration testing:

- i. It can be used with a mixture of I(0) and I(1) data.
- ii. It involves just a single-equation set-up, making it simple to implement and interpret.
- iii. Different variables can be assigned different lag-lengths as they enter the model. For instance None of the variables are I(2), as such data will invalidate the methodology.

We determine the significance of our long run relationship among our level variables (GDP<sub>g-1</sub>, TOR<sub>-1</sub> and TVR<sub>-1</sub>) using Wald test as follows:

- H<sub>0</sub>: GDP<sub>g</sub> = TOR = TVR= 0 (There is no relationship)
- H<sub>i</sub>: GDP<sub>g</sub> ≠ TOR ≠ TVR ≠ 0 (There is a significant relationship)

**Decision rule**

When F-statistic > Pesaran critical value, reject null hypothesis (H<sub>0</sub>) and accept H<sub>i</sub>

When F-statistic < Pesaran critical value, accept null hypothesis (H<sub>0</sub>)

Pesaran critical values at five percent are: 3.79 (lower bound) and 4.87 (upper bound).

**Table 3: Wald Test Result**

ARDL Bounds Test

Date: 11/30/16 Time: 19:48

Sample: 1984 2014

Included observations: 31

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	8.861165	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

The result of bound test shows that there exist long run relationship between the variables (GDP growth, TOR and TVR). This is because the F-statistics is greater that the upper bound of Pesaran critical value, we reject the null hypothesis of no relationship and accept the alternative hypothesis of significant relationship. From the estimation output, F-statistics is more than the upper bound value (8.861165 > 4.85) at 5% level of significance. it is evident that the relationship is significant at all level of significance (10, 5, 2.5 and1). Therefore, we reject the null hypothesis of no relationship and accept the alternative that the variables are jointly significant. The variables can be said to move in the same direction in the long run.

**Error Correction Estimation**

In order to correct disequilibrium in the short run, we estimate the long run component of the standard ARDL of the form:

$$GDPg = \beta_0 + \beta_1 TOR_{t-1} - \beta_2 TVR_{t-1} + Ut \text{ ----- (2)}$$

From OLS performed on equation 1, we proceed to estimate the error correction term using:

$$U_t = GDP_g - \beta_0 - \beta_1 TOR_{t-1} - \beta_2 TVR_{t-1} \text{-----}(3)$$

$U_t = ECT =$  speed of adjustment to the long run equilibrium

Consequently, we estimate the dynamic model by incorporating error correction factor:

$$\Delta GDP_g = \alpha_0 + \beta_1 \Delta GDP_{g-1} + \beta_2 \Delta TOR_{t-1} + \beta_3 \Delta TOR_{t-2} + \beta_4 \Delta TVR_{t-1} + \beta_5 \Delta TVR_{t-2} + \beta_6 ECT_{t-1} \text{---}4$$

**Table 4: Estimated Error correction Model**

ARDL Cointegrating And Long Run Form

Dependent Variable: GDPG

Selected Model: ARDL(1, 2, 3)

Date: 11/30/16 Time: 19:30

Sample: 1981 2014

Included observations: 30

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOR, 2)	-0.798947	0.197093	-4.053652	0.0006
D(TOR(-1), 2)	0.460834	0.214816	2.145251	0.0438
D(TVR, 2)	0.497912	0.102421	4.861425	0.0001
D(TVR(-1), 2)	-0.245670	0.105589	-2.326669	0.0301
D(TVR(-2), 2)	-0.137201	0.091743	-1.495497	0.1497
CointEq(-1)	-0.839628	0.180766	-4.644824	0.0001

Cointeq = GDPG - (-2.0615\*D(TOR) + 1.2867\*D(TVR) + 5.1947 )

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOR)	-2.061464	0.576684	-3.574688	0.0018
D(TVR)	1.286687	0.360106	3.573074	0.0018
C	5.194749	1.213550	4.280622	0.0003

The error correction factor measures the speed of adjustment from short run disequilibrium to the long run path. The value of the error correction term is -0.839 (83.9%). This satisfies the negativity condition of the framework. The validity of this is also confirmed by its statistical significance at 5% (t statistics = -4.644824 < -0.0001 or probability value of 0.0003 < 0.05). Therefore, rate at which short disequilibrium is corrected to the long period is approximately 84 percent (See table 4). It also evident that all the variables are statistically significant as their respective t-statistics are greater than 2. This is further confirmed by probability values being less than 0.05.

**Diagnostic Tests**

To ascertain the validity of our model estimate, conduct both serial correlation LM test and Heteroscedasticity using the model of the form:

$$U_t = \rho_1 U_{t-1} + \rho_2 U_{t-2} + \epsilon_t \text{-----}5$$

**Breusch-Godfrey Serial Correlation LM Test:**

F-statistic	0.145425	Prob. F(2,22)	0.8655
Obs*R-squared	0.404486	Prob. Chi-Square(2)	0.8169

Preliminary investigation to determine the existence or otherwise of serial correlation on the model was undertaken. The Breusch-Godfrey LM indicates the absence of serial correlation. Therefore, further econometric

analysis and estimation are valid since the observed R-squared is greater the probability value: 0.8169 is greater than 0.05 level of significance. This means that errors in one period do depend on preceding ones

#### Heteroskedasticity Test: Breusch-Pagan-Godfrey

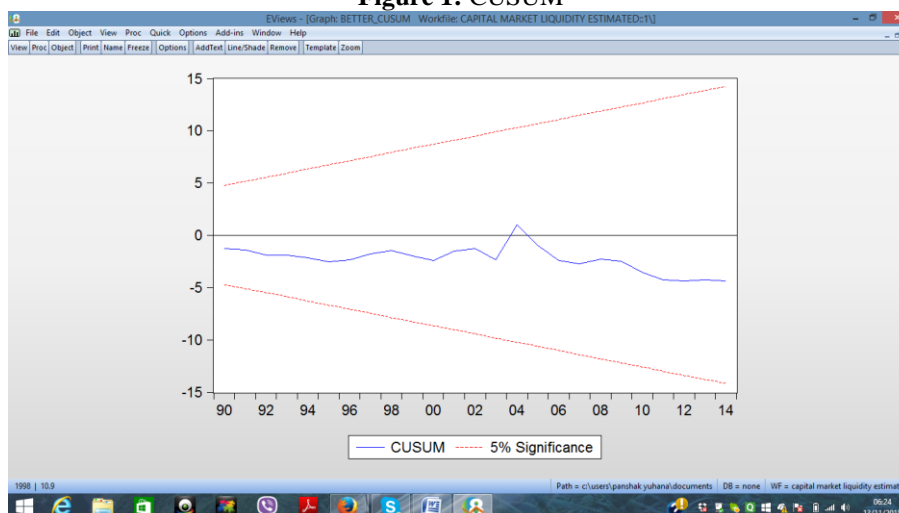
F-statistic	1.934962	Prob. F(7,23)	0.1098
Obs*R-squared	11.48966	Prob. Chi-Square(7)	0.1186
Scaled explained SS	9.294342	Prob. Chi-Square(7)	0.2322

Similarly, Breusch-Pagan Godfrey test for heteroscedasticity indicates that the residual from the model are constant and converge in long run as probability of observed R-squared value of 0.1186 is greater than 0.05 significant level. Hence, they are white noise and we can use our parameter estimates for any meaningful discussion

#### CUSUM Test

This check is carried out to ascertain the stability of our estimated model. From the graphical view of CUSUM test, our model is stable since it is within the bounds. That is, in between the upper and the lower red lines.

**Figure 1: CUSUM**



## V. Conclusion

This research examined the relationship between stock market liquidity indicators and economic growth in Nigeria using time series data spanning 1981 to 2014. It employed the ARDL methodology. It was revealed that there exist a significant relationship between stock market liquidity and economic both in short run and long run period. The extent to which disturbances in the short run are tied up to the long run position is quite significant. The empirical result is largely in conformity with several researches on the relevance of an active and liquid stock market. It reveals that the stock market liquidity do help to improve the prospect an economy. The findings are consistent with existing theoretical framework as illustrated by several authors about the relationship between financial market development and economic growth. The policy implication of this work is that, stock market can be relied upon for advancing economic in Nigeria. The research outcome could help policy makers and corporate managers improve resource allocation, given that they both can be sure significantly in utilising stock market liquidity to arrive at reasonable decisions that rely greatly upon economic activity. In addition, providing more strength to the liquidity report of a capital market has the potentials of lowering the risk connected with investments. This necessarily permits savers to obtain equities and sell them speedily and without suffering high costs if they need to make changes or diversify their portfolios. A superior approach of stock market liquidity will also lead to better capital allocations, consequently, resulting to additional investments. Moreover, corporate entities with illiquid markets for their equity are inclined to be or more vulnerable large external to them innovations and vagaries. Thus, by providing liquidity, stock market is expected to substantially lower liquidity risks faced by investors and, furthermore, this will cause equity capital cost reductions in future fund raising and future economic growth. As a synopsis, an effort toward increasing the mix of securities, removing rigidities in security convertibility and achievement of attractive returns is desirable.



Creation of awareness and restoration of confidence on the stock exchange will further make the make toss of investors. Corporate governance culture and stepping beyond profitability to sustainability of the market is critical to improvement of liquidity of the market in both short and long-run

## References

- [1]. Adenuga, O A. 2010. 'Stock Market Development Indicators and Economic Growth in Nigeria (1990-2009): Empirical Investigations,' *CBN Economic and Financial Review*.
- [2]. Apergis, Nicholas et al. 2015. "Does Stock Market Liquidity Explain Real Economic Activity? New Evidence from two Large European Stock Markets," *Journal of International Financial Markets, Institutions & Money*, vol 38: 42-64
- [3]. Atje, R & B Jovanovic. 1993 'Stock markets and development' *European Economic Review*, vol 1, no 37: 632-40.
- [4]. Beber, A. 2011 'What Does Liquidity Sector Order Flow Tell us about the Economy?' *Review of Financial Studies*, vol 24, no 1: 3688–3730.
- [5]. Beck, T et al. 1999 'A New Database on Financial Development and Structure, Policy Research' Working Paper, *The World Bank, mimeo*.
- [6]. Bencivenga, V R et al. 1996 'Liquidity of Secondary Capital Markets: Allocative Efficiency and the Maturity Composition of the Capital Stock,' *Economic Theory*, vol 7, no1:10-50
- [7]. Central Bank of Nigeria, 2014 *Statistical Bulletin*, CBN Publication
- [8]. Demirgüç-Kunt, A & E. Detragiache. 1998 'Financial Liberalisation and Financial Fragility,' *International Monetary Fund, Working Paper*, vol 98 no 83.
- [9]. Dimirgüç-kunk, A A & R Levin. 1996 'Stock Market, Corporate Finance and Economic Growth: An Overview,' *The World Bank Review*, vol 10, no 2: 223-225.
- [10]. Ekundayo, I K. 2002 'Creating Conducive Environment for Investment in Nigerian Capital Market, Paper Presented at Public Enlightenment on Opportunities in the Capital Market for Industrial Development of Kogi State "Lokoja29<sup>th</sup> March to 1<sup>st</sup> April, 2002
- [11]. Engle, R. 1982 'Autoregressive Conditional Heteroscedacity with Estimates of the Variance of United Kingdom Inflation's,' *Econometrica*, vol 1, no. 50:987-1007.
- [12]. Ewah, S O et al. 2009 'Appraisal of Capital Market Efficiency on Economic Growth in Nigeria', *International Journal of Business and Management*, vol4, no.12: 219 – 225.
- [13]. Ezeoha, A et al. 2009 'Stock Market Development and Private Investment Growth in Nigeria,' *Journal of Sustainable Development in Africa*, vol 11, no 2
- [14]. Fang, V W et al. 2008 'Stock Market Liquidity and Firm Value' *Journal of Financial Economics*, vol 94, no 1:150–169
- [15]. Greenwood, J & B Jovanovic. 1990 'Financial Development, Growth and the Distribution of Income,' *Journal of Political Economy*, vol 98, no1: 1076-1108.
- [16]. Goldsmith, R W. 1969 *Financial Structure and Development*, New Haven: Yale University Press.
- [17]. Harris, D. 1995 *Using Co integration Analysis in Econometric Modeling*, Prentice Hall; Great Britain.
- [18]. Johansen, S. 1991 'Estimation and Hypothesis Testing of Co-integrating Vectors in Gaussain Vector Autoregressive models,' *Econometrica*, vol 59, no 27.
- [19]. Kaul, A V Kayacetin. 2009 'Forecasting Economic Fundamentals and Stock Returns with EquityMarket Order Flows: Macro Information in a Micro Measure?' *Working Paper*, University of Alberta
- [20]. King, R G & R Levine. 1993 'Finance, Entrepreneurship, and Growth: Theory and Evidence,' *Journal of Monetary Economics*, vol 32, no 3: 513-542.
- [21]. Lucas, R E. 1988 'On the Mechanics of Economic Development,' *Journal of Monetary Economics*, vol 22, no.1: 3-42.
- [22]. McKinnon, R I. 1973 *Money and Capital in Economic Development*, Washington DC: The Brookings Institution
- [23]. Mishra, P K et al. 2010 'Capital Market Efficiency and Economic Growth: The Case of India,' *European Journal of Economics, Finance and Administrative Sciences* vol 27, no18:130-138.
- [24]. Mohtadi, H & S Agarwal. 2004 'Financial Markets and the Financing Choice of Firms; Evidence from developing countries,' *Global Financial Journal*, vol15 no 2: 52-70
- [25]. Næs, R et al. 2011 'Stock market liquidity and the business cycle' *Journal of Finance* vol 66, no1: 139–176.
- [26]. Nigeria Stock Exchange, (2009) *NSE Fact Book for 2004-2009*. Lagos: The Nigeria
- [27]. Nyong, M O. 2003 'Predictability and Volatility of Stock Return in Three Emerging Markets: Nigeria, South Africa and Brazil,' *Nigeria Journal of Economics and Development Matters* vol2, no.1: 12 – 29.
- [28]. Odit, M P. 2009 'Stock market development and economic growth: The case of Mauritius' *International Business & Economics Research Journal*, vol 8, no.2: 77-88
- [29]. Ogunmuyiwa, M S. 2010 'Investor's Sentiments, Stock Market Liquidity and Economic Growth in Nigeria,' *Journal of Social Sciences*, vol 23, no 1:63–67.
- [30]. Okereke-Onyiuke, N. 2000 'Stock Market Financing Options for Public Projects in Nigeria' *The Nigerian Stock Exchange Fact Book*, 41 – 49.
- [31]. Pagano, M. 1993 Financial Markets and Growth: An Overview, *European Economic Review*, vol 37, no. 23: 613-622.
- [32]. Panshak, Yohanna. 2010 'Expanding Capital Market and Economic Growth in Nigeria, (M.Sc Thesis Presented to the Department of Economics, University of Jos, June 2010).
- [33]. Pesaran, H M et al. 2001 'Bounds Testing Approaches to the Analysis of Level Relationships' *Journal of Applied Econometrics*. Vol1, no 16: 289 – 326
- [34]. Reilly, F K & K C Brown. 2003 *Investment Analysis and Portfolio Management*, Ohio United States of America: Thomson South-Western.
- [35]. Schumpeter, J. 1911 *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and Business Cycle*, Cambridge Mass: Harvard University Press.
- [36]. Shaw, E S. 1973 *Financial Deepening in Economic Development*, Oxford: Oxford University Press,
- [37]. Smimou, K. 2014 'Consumer Attitudes, Stock Market Liquidity, and the Macro Economy: A Canadian perspective', *International Review of Financial Analysis*, vol11, no 33: 186-209
- [38]. Ujunwa, A & O P Salami. 2010 'Stock Market Development and Economic Growth: Evidence from Nigeria,' *European Journal of Economics, Finance and Administrative Sciences*, vol1, no 25:44 – 52
- [39]. World Bank, 1989 *World Development Report*, London: Oxford University Press.