

Stock Market Liquidity and Nigerian Economy

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Abstract

The study investigates the impact of stock market liquidity on agricultural sector economy in Nigeria; for the period 1995-2024. The ex-post facto research design was adopted. Secondary data are used and collects from the Central Bank of Nigeria Statistical Bulletin, 2024. The study uses agricultural sector output as proxy for agricultural sector economy and use as the dependent variable; whereas, Value Trade, All Share Index and Market Capitalization are use as independent variables to measure stock market. Hypotheses are formulated and tested using time series econometric techniques. The study reveals a positive significant impact of market capitalization on agricultural sector output in Nigeria. All-Share-Index has a positive significant impact of agricultural sector output in Nigeria. There is a positive significant effect of value trade on agricultural sector output in Nigeria. There is a long-run equilibrium effect of stock market on agricultural sector performance in Nigeria; and, the result confirms that about 68% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 63% of the variations in agricultural sector economy can be explained by changes in stock market variables (MCP, ASI and VTD) in Nigeria. The study concludes that stock market liquidity has a negative significant impact on agricultural sector performance in Nigeria. The study recommends that the regulatory authority should find a means of relaxing some of the requirements to accommodate other investors. Sensitization programmes should be put in place in educating the investors in the agricultural sector of the economy; which will enable them to the activities of the stock market. Government and the stake holders should have a good working relationship in order to ensure effective development in Nigeria.

Keywords: Stock Market, Liquidity, Agricultural Sector, Economy, Nigeria.

INTRODUCTION

Study conducted by Alanbi (2023) stated that stock market liquidity appears to be one of the important subsectors in the financial system whose responsibility is critical for growth and development of an economy; through effective and efficient intermediation processes. Hence, the agricultural sector is not an exception; because, stock market is necessary especially in the area of capital formation through efficient allocation of resources in a liberalized economy. However, the agricultural sector has been the mainstay of the nation's economy, in the 1970s and the early 1980s (Blending & Ola, 2022). The work of Igbendu and Abel (2019) reveals that more than 70% of the population is engaged in agriculture in Nigeria. Hence, the study conducted by Garry and Eboil (2022) showed that before the discovery of crude oil, agriculture remained the mainstay of the country's economy, contributing as much as 90% of its foreign

earnings. Hence, the sector still appears to be the most reliable one, even though it has been out-performed by the oil and gas sector. Thus, one important function of the stock market is to intermediate between the both sectors of the economy. It does this by reducing the cost of information, transaction and monitoring; promoting productive investment through funding; mobilizing both domestic and foreign saving and monitoring business investment performance in the agricultural-sub sector (Chike & Dele, 2023).

Thus, the stock market liquidity makes the exchange of services possible and enables trading, hedging and diversification of risks effective (Uduak & Adeleke, 2023). These functions allow scarce resources to be allocated efficiently and effectively for productive uses in order to increased accumulation of capital for faster technological progress for rapid growth and development in the agricultural sector of the economy. Hence, in any free market economy, a vibrant agricultural sector led-economy is a catalyst for stock market performance and development (Andabai, 2024). Hence, in Nigeria, the sector is still struggling under the shackles of under-development because of inconsistent government policy, inability to access long-term investment funds, political and economic instability to implement the formulated policies, corruption at all levels of government etc. Thus, these problems have raised doubts and criticisms on the performance of stock market and agricultural sector growth in Nigeria. Thus, it is based on these premises that the study attempts to investigate the effect of stock market on agricultural sector growth in Nigeria. However, the important role of the financial institution is to intermediate between the surplus sector of the economy and the deficit sector of the economy (Achigbuke & Bendu, 2023).

Statement of the Problem

There have been the growing concerns and controversies on the role of stock market liquidity and agricultural sector performance relationship in Nigeria (Garry & Eboil, 2022). Thus, studies carried out in Nigeria by Uduak and Adeleke (2023); Chike and Dele (2023); Igbendu and Abel (2019); Andabai (2024) and Alanbi (2023) reveal is a positive significant relationship between stock market development and agricultural sector performance. While some other studies witnessed in South Africa by Nzue (2006); Odhiambo (2021) in Ghana and Ndako (2009) in Uganda also reveal is a negative significant relationship between stock market development and economic growth, all in different countries with similar time characteristics of data. Thus, the Nigeria stock market is still struggling under the shackles of under-development as a result of liquidity problems, market inefficiency, infrastructural inadequacy, inconsistency and unfairness associated with dealings in security etc. These conflicting results and problems create a knowledge gap in this study. In Nigeria, inflation rates have persistently been two digits; this has been an issue confronting policy makers, investors, analysts and economists. It is one of the major factors that could derail the economy of any nation. The stock market which also contributes to economic performance, hence, this study tends to investigate the impact of stock market liquidity on agricultural sector economy in Nigeria.

RESEARCH HYPOTHESES

- (i) Market capitalization has no significant impact on agricultural sector output in Nigeria.
- (ii) Value trade has no significant impact on agricultural sector output in Nigeria.
- (ii) All Share Index has no significant impact on agricultural sector output in Nigeria.

Theoretical Framework

The theoretical framework of the study is predicated on endogenous growth theory of Romer (1986). Endogenous growth theory or new growth theory was developed by Romer (1986), Lucas (1988) and Rousseau (1999) among other economists as a response to criticism of the neo-classical growth model. The endogenous growth theory holds that policy measures can have an impact on the long-run growth rate of an economy (Wikipedia, 2015). However, the growth model is one in which the long-run growth rate is determined by variables within the model, not an exogenous rate of technological progress as in a neo-classical growth model. Jhingan (2006) explained that the endogenous growth model emphasizes technical progress resulting from the rate of investment, the size of the capital stock and human capital. Endogenous theory argues that a higher savings rate leads to a higher economic growth. In an endogenous growth model. The finance literature is replete with the critical role of financial market liquidity in affecting the efficiency of productivity in an economy. But since then, most economies have exhibited at least some growth in per capita incomes, but for many economies that are today's world's under-developed nations, growth rates have been relatively low, leaving their per capita income levels far behind the leading economies of the world (Adenike & Ewkere, 2024).

Empirical Review

Wole and Mencha (2023) investigated the roles of capital market on agricultural sector growth in Nigeria using Granger-causality test and regression analysis. The authors discovered a one-way causality between GDP growth and market capitalization, a two-way causality between GDP growth and market turnover. They also observed a positive significant relationship between GDP growth and turnover ratios. The authors advised that Government should encourage the development of the capital market since it has a positive effect on economic growth.

Ajike (2022) evaluates whether capital market development raises agricultural sector growth in Nigeria, by employing error correction approach. The econometric results indicate that capital market development (market capitalization GDP ratio) increases the economic growth. He however recommended the removal of impediment from capital market development which includes tax, legal and regulatory barriers and development of the nation's infrastructure to create enabling environment where businesses can strive effectively.

Aliyu and Chandra (2023) uses Ordinary Least Square (OLS) method to examined the impact of stock market development on manufacturing sector growth in most of these studies noted that Nigerian capital market spur economic development. These studies in Nigeria found positive impact on capital market development and economic growth. Abule and Aliyu (2023) investigated the impact of commercial banks' loan on agricultural sector growth in Nigeria using time series spanning data (1994-2020). Ordinary Least Square (OLS) method was used for the analysis. Gross Domestic Product, Agricultural Sector Loans, Broad Money Supply, Interest Rate and Inflation Rate were used as variables. The study shows that commercial banks' loan to the agricultural sector significantly and positively affects agricultural sector growth in Nigeria. It recommends that improvement in the agricultural sector will add value to the Gross Domestic Product in Nigeria.

Odkut and Mbuk (2023) used a linear regression model to examine the impact of commercial banks' credit on agricultural development in Nigeria using spanning data for a period, (1995-2021). Agricultural Production Index, Commercial Bank Credit to the Agricultural Sector, Agricultural Credit Guarantee Scheme and Agricultural Product Price were used as the variables. The study shows a positive relationship between government financial allocation to the agricultural sector and agricultural sector growth. It also found that government fund allocation to the agricultural sector has led to a significant positive growth in agricultural productivity.

Akunle and Norunm (2022) investigates the effect of stock market on the agricultural sector growth in Nigeria using time series spanning data (1997-2020). Agricultural sector output was employed as the dependent variable to measure Agricultural sector growth, while Market Capitalization, All-Share-Index. The study shows a positive significant effect of stock market on the agricultural sector growth in Nigeria.

METHODOLOGY

The study employed ex-post-facto research design. Secondary data were used and collected from Central Bank of Nigeria Statistical Bulletin. The study used Agricultural Sector Output as proxy for Agricultural Sector Economy and used as the dependent variable; whereas, Value trade, All Share Index and Market Capitalization were used as independent variables to measure stock market liquidity.

Model Specification

Model specification involves the determination of the dependent and explanatory variables based on specified theoretical sign and size of the parameters. The model is adapted from the work of (Igbendu & Abel, 2021). The model is stated as: $AGSO = f(MCP, ASI)$

Where: AGSO = Agricultural Sector Output as proxy for Agricultural Sector Performance

CPS= Credit to the Private Sector, MCP = Market Capitalization, MLQ= Market Liquidity

The above model is modified in this study by introducing New Issues and was employed as explanatory variable. Hence, the modified model is stated as: $AGSO = f(MCP, ASI, VTD)$

(i).

Thus, the econometric form is written as:

$$(AGSO) = a + b_1MCP + b_2ASI + b_3VTD + u \quad (ii)$$

Where: AGSO = Agricultural Sector Output, MCP = Market Capitalization

VTD = Value trade, ASI = All-Share -Index

DATA PRESENTATION AND DISCUSSION

The study focused on the effect of stock market liquidity agricultural sector performance in Nigeria over a period of 1995-2024. The study used Agricultural Sector Output and was employed as the dependent variable to measure Agricultural sector performance, while Market Capitalization, All-Share-Index and Valued Trade are also employed as the independent variables to measure capital market development.

Table 1: Descriptive statistics

	AGSO	MCP	VTD	ASI
Mean	76488.22	58474.32	46464.50	32.25363
Median	57625.30	53858.76	39565.87	23.14370
Maximum	63458.36	74675.90	65098.76	35.10465
Minimum	46573.54	53768.70	31886.70	23.17364
Std. Dev.	411.3632	148.6905	54895.79	9.617132
Skewness	0.285252	3.111248	1.067069	0.175686
Kurtosis	3.075433	14.12640	5.256220	2.604247
Jarque-Bera	0.35078	203.1536	12.12370	0.253744
Probability	0.071645	0.000000	0.006235	0.061742
Sum	136.3100	3023.310	596.4000	1326.928
Sum Sq. Dev.	1100.332	685374.4	911.1700	2135.133
Observations	30	30	30	30

Source: Author's computation with the use of E-view 10.1

The descriptive statistics on table 1 shows that agricultural sector output for the period under study had a mean value of ₦76,488, Market Capitalization had ₦58,474, and Valued Trade had ₦46,464, while All-Share-Index had 27.25. The Jarque-Bera statistic shows that two of the variables, namely Agricultural sector output and Market Capitalization were normally distributed while Valued Trade and Market Capitalization were highly skewed. Furthermore, Agricultural sector output has a mean of ₦76,488 this implies that for the period under review the agricultural sector output was very high; this is because, stock market has a significant effect on agricultural sector performance in the Nigerian economy.

Unit Root Test

The stationary test of the variables was done using the Augmented Dicker Fuller (ADF) Unit Root Test. The result on table 2 shows that all the variables are integrated at first difference i.e. I(1) at the 5% or 1% level of significance.

Table 2: Unit Root Tests Analysis

Variables	ADF test Statistics	Mackinnon critical @ 5%	No of the time difference	Remark
AGSO	7.7481753	-2.623143	I(1)	Stationary
MCP	-3.4632423	-5.263286	I(1)	Stationary
ASI	-4.9535456	-4.216322	I(1)	Stationary
VTD	4.1252601	4.552976	I(1)	Stationary

Notes: (1) 1% level of significance, 5% level of significance, 10% level of significance. The tests accepted at 5% level of significance. **Source:** Researcher's Estimation using- E-views 10.1.

Test for Co-Integration

Thus, having found that all the variables are stationary at first difference, the next step is to perform Johansen co-integration procedure to ascertain whether Agricultural Sector Output (AGSO), Market Capitalisation (MCP), All-Share-Index (ASI) and Valued Trade (VTD) are co-integrated in the same order. The results of the test are presented on table 3.

Table 3: Multivariate Johansen's Co-Integration Test Result.

Null hypotheses	Alternative hypotheses	Eigen value	Likelihood ratio	Critical value 5%	Critical value 1%	Hypothesized No. of CE(s)
r=0	r=1	0.6292353	64.21423	65.86	45.23	None **
rd _≤ 1	r=2	0.5325322	57.21534	55.07	33.99	At most 1
rd _≤ 2	r=3	0.4307584	49.01243	42.20	24.77	At most 2
rd _≤ 3	r=4	0.3254474	38.13254	25.37	22.12	At most 3

Source: E-views Econometrics 10.1. Note* (**) denotes rejection of hypothesis at 5% (1%) significance level.

Vector Error Correction Model

The Error Correction coefficient contains information about whether the past values affect the current values of the variable under study and the significant coefficient implies that past equilibrium errors play a role in determining the current outcomes (Ibenta, 2012).

Table 4: Vector Error Correction Estimates Results

Dependent Variable: AGSO

Method: Least Squares, Time: 03:44

Sample: 1995-2024

Included observations: 30

Date: 12/07/2024	Coefficient	Std. Error	t-Statistic	Prob.
(ECM)(-1)	-0.681213	1.051325	32.53423	0.000001
D(AGSO ₋₂)	123.4582	0.645223	2.426532	0.000241
D(AGSO ₋₄)	241.4853	0.054132	1.532156	0.000532
C	213.4456	0.007523	2.394523	0.000213
(MCP)	132.6894	0.003311	0.536425	0.000243
(ASI)	242.4210	0.006413	1.432765	0.000332
(VTD)	142.5612	0.005412	2.421345	0.068321
R-squared	0.631252	Mean dependent var.		231.9765
Adjusted R-squared	0.561559	S.D. dependent var.		132.4576
S.E. of regression	12.65875	Akaike info criterion		16.16543
Sum squared resid.	32818.10	Schwarz criterion		11.68562
Log likelihood	-31.23542	F-statistic		7.854389
Durbin-Watson stat	1.964329	Prob(F-statistic)		0.000000

Source: Author's computation with the use of E-view 10.1

The results on table 4 show that error-correction coefficient (-0.681213) is statistically significant and has a negative sign, which confirms a necessary condition for the variables to

be co-integrated. Hence, long-run equilibrium effect of stock market on agricultural sector performance in Nigeria; and, the result confirms that about 68% short-run adjustment speed from long-run disequilibrium. Thus, the coefficient of determination ($R^2=0.631252$) indicates that about 63% of the variations in agricultural sector economy can be explained by changes in stock market development variables (MCP, ASI, VTD) in Nigeria. This implies that a significant portion of agricultural sector economy is explained by stock market variables. The F-Statistics of 7.854389 which is significant at 5% confirms the effect of stock market on agricultural sector economy in Nigeria over a period of 1995-2024. The influence of the explanatory variables on the dependent variable is statistically significant and this is also confirmed by the F-probability which is statistically zero.

Test of Hypotheses

H₀₁: There is no significant effect of market capitalization on agricultural sector output in Nigeria. Decision Criteria: Level of significance (α): 0.05 (5%), Decision Rule: Reject H_0 : If p- value < 0.05 and accept H_0 if p- value > 0.05. The results on table 4 reveal that market capitalization has a t-statistic of 0.536425 with a probability of 0.000243 which is lower than the level of significance of 0.05, which means, its effect is statistically significant. The null hypothesis is, therefore, rejected. Thus, market capitalization has a significant effect on agricultural sector output in Nigeria. **H₀₂:** Value trade has no significant effect on agricultural sector output in Nigeria. Decision Rule: Reject H_0 : If p- value < 0.05 and accept H_0 if p- value > 0.05. The results on table 4 show that value trade has a t-statistic of 2.421345 with a probability of 0.000332 which is lower than the level of significance of 0.05, which means, hence, its effect is statistically significant. The null hypothesis is, therefore, rejected. Thus, new issues have a significant effect on agricultural sector output in Nigeria. **H₀₃:** All-Share-Index has no significant effect on agricultural sector output in Nigeria. Decision Rule, Reject H_0 : If p- value < 0.05 and accept H_0 if p- value > 0.05. The results on table 4 show that All-Share-Index has a t-statistic of 1.432765 with a probability of 0.068321 which is lower than the level of significance of 0.05, which means, hence, its effect is statistically significant. The null hypothesis is, therefore, rejected. Thus, All-Share-Index have a significant effect on agricultural sector output in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study concludes that stock market liquidity has a positive significant impact on agricultural sector economy in Nigeria. This is evident from the Ordinary Least Square (OLS) econometrics test as indicated on table 4. Hence, this corroborates the study conducted by Obaje and Odoguna (2022) which indicates that stock market has a significant impact on the agricultural sector output in Nigeria. The study recommends that the cost of raising funds in the Nigerian stock market is however, regarded to be very high and there should be a downward review of the cost, so as to enhance its competitiveness and improve the attractiveness as one of the major sources of raising funds for the agricultural sector in Nigeria. Government should embark on development programs and also improve on infrastructural services that will enable the environment conducive for agricultural sector growth and development in the county. Stake holders should design an effective training programmes that will encourage the agricultural sector-led economy, this will educate and improve investors on existing business opportunities in agricultural industries. An improved and sustainable legal framework should be put in place

by Government to enable the stock market and agricultural sector to strive effectively in the economy also discourage the importation of substandard products at the expenses of local farmers.

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Appendix 1:
Stock Market Liquidity and Agricultural Sector in Nigeria (1995-2024)

Years	AGSO(₦' b)	(ASI)	MCP(₦' b)	NEI (₦' b)
1995	940.3	116.30	180.43	289.09
1996	1,275.8	117.20	285.84	345.85
1997	1,445.1	117.00	281.90	413.28
1998	1,600.6	116.90	262.63	488.15
1999	1,704.8	119.10	300.04	628.95
2000	1,801.5	124.60	472.32	878.46
2001	2,410.1	127.30	662.53	1,269.32
2002	2,847.1	134.60	764.90	1,505.96
2003	3,231.4	139.70	1,359.3	1,952.92
2004	3,903.8	140.80	2,112.5	2,131.82
2005	4,753.0	146.20	2,900.1	2,637.91
2006	5,940.2	144.20	5,120.9	3,797.91
2007	6,757.9	147.40	13,181.7	5,127.40
2008	7,981.4	150.90	9,563.0	8,008.20
2009	9,186.3	151.00	7,030.8	9,419.92
2010	10,310.7	155.00	9,918.2	11,034.94
2011	11,593.4	160.90	10,275.3	12,172.49
2012	13,413.8	163.30	14,800.9	13,895.39
2013	14,709.1	163.80	19,077.4	15,158.62
2014	18,018.61	166.90	16,875.1	17,680.52
2015	47,576.474	166.20	17,003.4	19,772.87
2016	48,761.223	161.70	16,357.1	19,988.30
2017	37,848.456	157.50	15,547.47	18,644.44
2018	38,956.564	145.55	16,876.87	17,978.65
2019	39,546.646	163.54	16,946.46	18,464.85
2020	47,848.256	157.50	16,547.47	17,644.24
2021	48,956.534	145.55	18,876.87	18,978.25
2022	59,546.246	163.54	19,946.46	18,464.55
2023	48,956.534	145.55	18,876.87	18,978.25
2024	59,546.246	163.54	19,946.46	18,464.55

Source: Central Bank Nigeria Statistical Bulletin, 2024.