Capital market and agricultural sector output in Nigeria

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Abstract
This study centres on capital market and agricultural sector output in Nigeria. The main objective is to examine the effect of capital market on agricultural sector output in Nigeria. The specific objectives are to find out the effect of market capitalization, value of transactions and share index on agricultural sector output in Nigeria. The data were obtained from Central Bank of Nigeria Statistical Bulletin for the period 1987 to 2019. The Autoregressive Distributive Lag approach that is suitable for data with mixed order of integration was employed to regress the capital market variables on agricultural sector output which is the dependent variable The empirical analyses revealed that market capitalization and share index had a positive effect on Agricultural sector output while value of transaction had negative effect on agricultural sector output in Nigeria. This study shows that capital market has only short run effect on Agricultural sector output in Nigeria. The study concludes that Nigeria capital market may not have invested significantly in the agricultural sector. The capital market is expected to boost long run growth of various sectors where adequate investments are made. The study recommends that government through the Central Bank of Nigeria should introduce and implement financial policies (monetary policies) that will make the capital market more efficient. The cost of doing business in the capital market should be reduced so as to make it profitable.

Keywords: capital market, agricultural sector, share index, transactions, sector

Introduction

Capital market is essential in the mobilization of savings and channeling of such savings to profitable self-liquidating investment. The Nigerian capital market provides the necessary lubricant that keeps turning the wheel of the economy. The capital market does not only make funds available for investment but also proficiently allocates these funds to projects of best returns to fund owners. This allocative role is significant in influencing the overall growth of the economy. The functioning of the capital market affects liquidity, acquisition of information about firms, risk diversification, savings mobilization and corporate control (Anyanwu 1998) [4]. Therefore, by altering the quality of these services, the functioning of stock markets can alter the rate of Economic growth which has agricultural sector as a segment (Equakun 2005) [8]. Sule and Momoh (2009) found that the secondary market activities have impacted more on Nigeria per capita income by tending to grow stock market earnings through wealth than the primary market. In another exposition, Ekezie (2002) [7] noted that capital market is the market for dealings (i.e. lending and borrowing) in longer-term loanable funds. Mbat (2001) [12] described it as a forum through which long-term funds are made available by the surplus to the deficit economic units. Nyong (1997) [13] viewed the stock market as a complex institution imbued with inherent mechanism through which long-term funds of the major sectors of the economy comprising households, firms, and government are mobilized, harnessed and made available to various sectors of the economy. Edem & Okoro (2013) noted that Economic growth in a modern economy hinges on an efficient financial sector that pools domestic savings and mobilizes foreign capital for productive investments.

The capital market is one of the important subset of the financial sector whose role is critical for economic growth and development. It is a market for obtaining long-term fund and also performs all the critical role carried out by a financial institution. Several studies such as Sanni (2012) [19], king and Levine (1993), Nzotta (2014) [14], Calderum and Liu (2003) [5] etc. have considered the relationship between capital market and economic growth, but the question of whether capital market helps to improve Agricultural sector has not been the subject of much empirical work. This study therefore seeks to close this gap. Agricultural sector and financial sector have been seen as major contributing sectors to many nations' GDP. Poor performance of the agricultural sector increases poverty and reduces the growth of the Nigerian economy. Hence, the need to revitalize the dwindling agricultural sector.

The aim of this study is to examine the effect of capital market on agricultural sector output in Nigeria.

The specific objectives are to:
1. Establish the extent to which market capitalization affects agricultural output in Nigeria.
2. Determine the degree to which value of transaction affects agricultural output in Nigeria.
3. Find out the extent to which share index affects agricultural output in Nigeria

Review of Related Literature

According to Al-Faki (2006) [3], the capital market is a network of specialized financial institutions, series of mechanisms, processes and infrastructure that, in various ways, facilitate the bringing together of suppliers and users of medium to long term capital for investment in socio-economic developmental projects". Capital market is seen as the market where medium to long-term finance can be raised (Akingbohungbe, 1996) [2]. In an added account, Ekezie (2002) [7] noted that capital market is the market for dealings (i.e. lending and borrowing) in longer-term loanable funds. The capital market is made up of the primary and the secondary market. The primary market is the market for first hand securities while secondary market is the market for second hand issues. Pandey (2006) [18], it is a type of market where existing securities of a market are traded on daily and continuous basis. This consists of exchanges and over-the counter markets where securities are bought and sold after their issuance in the primary market. The capital market is in the focus of the economist and policy makers because of the inherent gains it offers for the economy. Osaze (2000) [17] sees the capital market as the driver of any economy to growth and development because it is essential for the long-term growth capital formation.The stock market provides the pivot for capital market activities and it is often cited as an indicator of the soundness or otherwise of business activities in an economy (Obadan, 1998) [15]. The stock market is seen as a complex institution that has in-built system that mobilizes long-term funds from the major players in the economy - households, firms, and government and directs this fund to the various sectors of the economy (Nyong, 1997) [13]. Stock market contributes to economic growth through the specific services it performs either directly or indirectly. Notable among the functions of the stock market are mobilization of savings, creation of liquidity, risk diversification, improved dissemination and acquisition of information, and enhanced incentive for corporate control. (Uwajumogu, Ogbonna, Chijioke & Agu, 2013) [22].

Market Capitalization

Market capitalization which is commonly called market cap is the market value of a company that is traded on the stock market, calculated by multiplying the total number of shares by the present share price. It is derived by the share price multiplied by the number of shares outstanding.

Value of Transactions

This entails the monetary amount of a transaction which may require the services of a certified or licensed appraiser for completion.

Share Index

All share index is a series of numbers which shows the changing average value of the share prices of all companies on a stock exchange, and which is used as a measure of how well a market is performing. This is an index that measures a stock market, or a subset of the stock market, that helps investors compare current price levels with past prices to calculate market performance. It is computed from the prices of selected stocks.

Gross Domestic Product (GDP)

This is said to be the market value of all the finished goods and services produced in a country within a specific period by both citizens and foreigners in that country. The GDP is basically used to measure the health of a nation's economy. It is one of the most common indicators used to track the health of a country's economy. As a measurement, it is always seen as being a calculation of the total size of an economy. It can be measured in three ways namely; income approach, expenditure approach and output approach. Investors use GDP to make investment decisions while the economists use GDP to determine whether an economy is growing or going through a recession. The GDP of a nation is calculated by totalling the following numbers collectively; personal consumption, private investment, government spending and exports (minus imports). GDP is of two types namely; nominal GDP and real GDP. Nominal GDP take into account current market prices without considering inflation and deflation. While real GDP takes into consideration inflation and this entails that it considers the overall rise in price levels. Real GDP is preferred by the economist as a way to compare a nation's economic growth rate. This is how economists can say whether there is any real growth between one year and the next. It is calculated using goods and services prices from a base year, rather than current prices, in order to adjust for price changes.

Economic Growth

This is the increase in the production of economic goods and services, compared from one period of time to another. In economics, growth is generally formed as a function of physical capital, human capital, labour force and technology. Economic growth measures growth in monetary terms and looks at no other aspects of development (King & Levine, 1993). Economic growth can either be positive or negative, if negative, it means no enhancement in the economy and it is always identified or associated with economic downturn and

depression. Several measures have been employed to measure the economic growth including, national income levels, physical capital allocation, gross domestic product (GDP) of nations among others. The gross domestic product (GDP) has been commonly used to proxy economic growth and it is designed to measure the value of production of those activities that fall within the boundary of the national accounts system. Increases in capital goods, labour force, technology, and human capital, all contribute to economic growth. There are few ways of generating economic growth. Firstly, an increase in the amount of physical capital goods in the economy. Adding capital to the economy tends to increase productivity of labour. The second way of increasing economic growth is through technological improvement. Thirdly is by growing the labour force. The last but not the least is through increase in human capital. Human capital here entails social and institutional capital. Behavioural tendencies toward higher social trust and reciprocity, political or economic innovations like improved protections for property rights are in effect, types of human capital that can increase productivity of the economy. Obialor, Ejiofor, Ubogu and Onwuka (2020) [16] opined that better loan packaging strategy that meets the aspirations of small farmers and business people are capable of promoting economic growth.

Agricultural Output Growth
The agricultural sector of Nigeria economy performs the critical role of broadening the productive and export base of the economy. It creates employment and ensures supply of industrial inputs, full security and economic growth. However, recent studies on the financial development in Nigeria have shown more interest on its effects on economic growth. (Adelakun, 2010) [1], (Sanni, 2012) [19], (Calderon & Liu, 2003) [5], (Sunde, 2012) [21], (Fatima, 2004), and host of other researchers, opined that if there is improvement in economic growth, it entails that all other sectors are efficiently functioning and improving, thus, neglecting the study of growth of some sensitive individual sectors of the economy like agricultural sector. Though, some other activities are equally indicating lack of interest on issues relating to agriculture in Nigeria. It is true that in recent time, bank intermediation in formal banking has been changed in terms of speed of responses to their customers' need and quality of service rendered in Nigeria as a result of the efforts geared towards the financial inclusion and deepening of the financial system, (Sanusi, 2011) [20]. Hence, the attention is not extended to those in the rural area and that is where the chunks of Nigerian's agricultural firms and entrepreneurs are located. And also all schemes and agricultural specialized funds and institutions are not well managed and are not functional. Agricultural output suppose to be the major driver of the Nigerian economic growth considering some factors like natural resources, human resources, historical evidence and past records. According to Udomah (2006), agriculture is the largest employer of labor as it serves as a source of livelihood to two-third of Nigerian population. Not minding these factors, the contribution of agricultural sector output to the entire Nigerian economic growth has been declining continuously since the oil boom of 1970. Agricultural share of the gross domestic product (GDP) has progressively declined from 70% in the early 1960s to 48.8% in the 1970s to 22.2% in the 1980s; in 2006 it dropped to 7.4% and further dropped to 5.9% at the end of 2009, and further declined to 2.9% in 2013 and increased to 21.2% in 2018.
This study tends to follow the supply leading hypothesis which holds that financial development brings about economic growth. This is because it is the primary function of financial institutions to provide financial services to investors where investment enhance economic growth.

Methodology
Research Design
This study employed the *ex-post facto* research design. The study relied on historical time series secondary data collected from the Central Bank of Nigeria's Statistical Bulletin. According to Kerlinger (1973), *ex-post facto* design is a systematic empirical inquiry in which the investigator does not have direct control over the value of the variables included in the study

Nature and Sources of Data
Data for the study are secondary data obtained from the Central Bank of Nigeria (CBN), Statistical Bulletin, between 1987 and 2019. This covered the period when Structural Adjustment Programme (SAP) was introduced.

Model Specification
Model for Capital Market and Agricultural Sector
The model of capital market and agricultural sector output will be used to address objective one of this study. The model is a modification of the model of Edame, & Okoro (2013) who studied the Impact of Capital Market on Economic Growth in Nigeria.

Their model is specified as follows:

GDP=f(MAKAP,NDEALS,VTRAN, INT)

Where:
GDP=Gross Domestic Product, measuring economic growth.
MAKAP= Market Capitalization in Nigeria

NDEALS= Number of Deals
VTRAN= Value of Transaction
INT= Interest Rate

This present study included the variables as shown in the function below;

$\quad$ ASO = f(MC, VT, SI),......................(model 1)

Where:
ASO= Agricultural sector output
MC= Market capitalization
VT= Value of Transactions
SI= Share Index
The relationship can be explicitly expressed in an econometric equation thus:
ASO = b_0 + b_1MC + b_2VT+b_3SI e...................... (equation 1)
Where b_o is a constant or intercept, b_1, b_2 and b_3 are the coefficients of the explanatory

Variables, e is stochastic error term.

Method of Data Analysis
This study uses series of econometrics techniques in testing the effect of financial development on agricultural sector output. It employed time series data and this necessitated stationarity tests in order to avoid spurious results. The unit root test was followed by the co-integration procedure to examine whether there is existence of long run relationship between variables of financial development. The Regression analysis was employed. The error correction model (ECM) was used to provide information on the long run relationship and short run relationship as well as the speed of adjustment between the two variables. The hypotheses was tested at 0.05 level of significance.

Regression Analysis
This study employed ARDL approach in estimating long run as well as short run relationship between Agricultural sector represented by agricultural sector output (ASO) and capital market represented by Market capitalization, Value of transactions and All Share Index.

Results and Discussion
The data used for this study are the agricultural output as the dependent Variable and other groups of data under capital market development, They are time series data spanning 1987 to 2019. All the data were log transformed to smoothen stochastic tendencies in time series.
The dependent variable being proportion of GDP to agriculture is measured in billions of Naira. The explanatory variables of capital market development data comprise market capitalisation, (Naira billion) value of transaction (Naira billion) and All share index. The level data were used for the descriptive analysis while the log transformed data were employed for unit root tests and model estimation.

Descriptive Statistics
Descriptive statistics of the Variables to the Study

Table 1: Capital Market Variables

	ASO	MC	VT	SI
Mean	8195.554	6598.586	444714.4	17565.67
Median	4585.930	1359.300	59813.36	15559.90
Maximum	31904.14	25890.22	2350876.	50424.70
Minimum	50.29000	8.200000	225.4000	176.9200
Std. Dev.	9148.887	8177.104	598565.4	15206.43
Skewness	0.993786	0.890941	1.403358	0.468420
Kurtosis	2.902833	2.367543	4.444487	2.111607
Jarque-Bera	5.444837	4.915768	13.70077	2.292003
Probability	0.065716	0.085616	0.001059	0.317905
Observations	33	33	33	33

The result on Table 1 showed the descriptive statistics for the capital market development variables. The results showed the Mean, median, maximum and minimum values as well as the standard deviation of the data.
The mean value is the average for all the years under study, while the standard deviation explains the variability of the mean which is a measure of the stability otherwise of the trend. The mean value showed that Agric Sector Output (ASO) is N8,196 billion with N9,149 standard deviation. Market capitalisation has a mean of N6, 599

and standard deviation of N8, 177. For Value traded and Stock Index the values are N44, 4714 and N598,565; and 17566 and 15206 for mean and standard dedication, respectively. The values show that the standard deviation for ASO, MC, and VT are greater than their respective mean indicating a wide variation and suspected instability in the capital market. However, the stock index (SI) showed a mean relatively larger than the standard deviation.

The normality among the variables can be anticipated from the results of the Skewness, Kurtosis and Jargue Bera statistics. The bench marks for Skewness and Kurtosis are -1 to 1 and -2 to 2 (or -3 to 3) respectively. From the results, the skewness and kurtosis are 0.9938 and 2.9028 for ASO, 0.8099 and 2.3675 for MC, 1.4033 and 4.4445 for VT and 0.4684 and 2.1116 for SI. These values are within range for ASO, MC and SI but VT had a high Kurtosis. This shows a suspected evidence that VT has no normality as shown by high variation from mean. Also, the results from Jargue Bera statistics has a decision that P.value greater than 0.05 indicates normality and less than 0.05 shows no normal distribution. The results showed the p.values as follows: ASO (0.0657> 0.05), MC (0.0856> 0.05), VT (0.0010< 0.05) and SI (0.3179> 0.05). From the results, only VT has a p.value less than 0.05 which means that it has no normal distribution.

From Figure 1 below, the trends also suspects that VT fluctuates and shows oscillatory trends. This implies that there is need to check for unit roots for the variables.
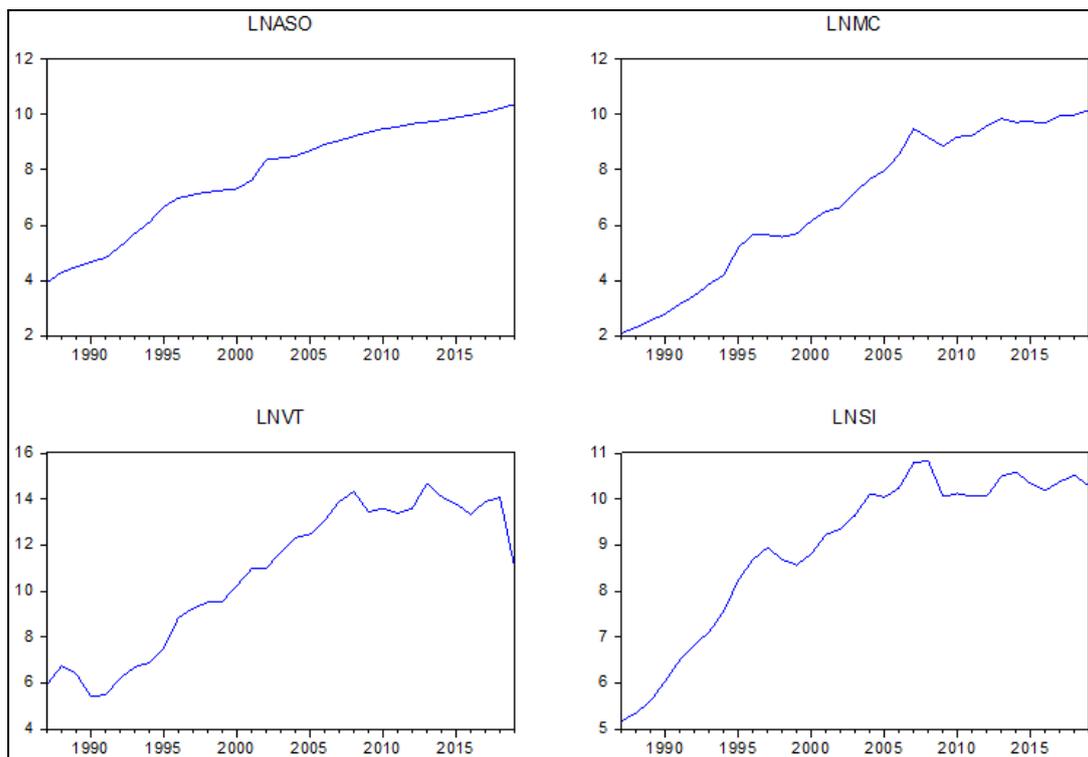

Fig 1: Trends in Nigerian capital market development variables between 1987 and 2019

Unit Root Test

The time series data has been known to fluctuate over time making them susceptible to instability that can distort normal trends and affect the reliability of regression analyses. The variables were therefore subjected to unit root test to determine their stationarity. The Augmented Dickey-Fuller (ADF) and the Philip Peron tests were jointly used to determine whether they are stationary series or non-stationary series. The need for two different tests is for validation of results. The null hypothesis that is tested in both unit root tests in the presence of unit root. The stationarity results for the variables for variables of agricultural sector output (as the dependent) and the independent variables (Capital market development) are presented on Table 6.

Table 2: The ADF and PP statistics for tests of stationarity for variables of the study.

Variables	Augmented Dicker Fuller (ADF) Test				Philip Peron (PP) Test				
	At Level	At 1st Difference		Order of Integration	At Level		At 1st Difference		Order of Integration
Dependent Variable									
LnASO	-3.1055	0.04	-	-	1(0)	-4.4444	0.00	-	-	1(0)
Capital Market Development									
LnMC	-1.8112	0.37	-4.3330	0.00	1(1)	-1.9151	0.32	-4.2869	0.00	1(1)
LnVT	-1.5552	0.49	-3.0067	0.04	1(1)	-1.5552	0.49	-3.0067	0.04	1(1)
LnSI	-3.0416	0.04	-	-	1(0)	-3.8729	0.00	-	-	1(0)

Source: Eviews 9 output.
The results from ADF and PP tests have similar p.values. This indicates that the unit root results are validated. From the results of the unit root tests, the dependent variable (Agricultural Sector Output, ASO) was stationary at level {1(0)}. From the independent variables, the Share Index (LnSI) was also stationary at level {1(0)}. Other independent variables which include market capitalisation and value of transactions were not stationary at level. They are tested and found stationary in their first differences.

Justification for Employment of ARDL
Since the unit root test result is of mixed order of integration, this qualifies the Autoregressive Distributive Lag (ARDL) regression technique as the most suitable tool of analysis for this study. Thus, the long run relationship was tested using the bound test while the short run effects were examined with ARDL regression.

Model Estimation
The analyses of the model was done and presented as follows:
Capital market variables and agricultural sector output
The bound test is used to determine long run relationship between each of the model and agricultural sector output. The test of short run dynamism was performed with Autoregressive Distributive Lag (ARDL) technique. The results are presented under two broad headings:
a. Analyses of Long run relationship between capital market and agricultural sector output
b. Analyses of short run effect of capital market variables on agricultural sector output

Estimation of Long run Effect of Capital Market on Agricultural Sector Output
The test of cointegration for the presence of a long-run relationship in the model is shown in below. The Bound Test result is used to compare the bound critical values with the F-statistics values. If the F-statistic is above the upper and lower critical bound values, then there is a long run relationship in the model; but where the F-statistics is below the upper and lower bound critical values, it is inferred that there is no long-run effect (relationship). The null hypothesis is that "No long-run relationship exists".

Table 3: Result of ARDL Bounds Test for long run effect of capital market on Agricultural sector output in Nigeria

Models	F-Statistic	Lower Critical Value Bound at 5% level	Upper Critical Value Bound at 5% level
Model 1: Capital Market Development	2.1428	3.23	4.35

Source: Extracts from Eviews 9

The result is summarised below
1. Capital market variables do not have significant long-run effect on agricultural sector output in Nigeria.

Estimation of Short Run Effect of capital market on Agricultural sector output in Nigeria
The short-run relationship between capital market indicators and agricultural sector output were determined on employment of the Auto-regressive Distributive Lag (ARDL) model. The ARDL regression model is preferred to the traditional OLS principally because the variables were fractionally integrated of the order of 1(0), 1(1). That is to say that they have mixed order of integration. The analyses were interpreted based on the coefficient of the explanatory variables, and the coefficient of determination (R^2). The statistical significance is confirmed using the t-statistics for the coefficient of regression, and F-statistics for the coefficient of determination.
Short run effect of capital market development on agricultural sector output

Table 4: Results of the Short Run Model of the Relationship between Capital Market variables and Agricultural Sector Output in Nigeria.

Dependent Variable: LNASO				
Method: ARDL				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNASO(-1)	1.031018	0.208424	4.946724	0.0001
LNASO(-2)	-0.593335	0.274547	-2.161147	0.0413
LNASO(-3)	0.352353	0.187328	1.880935	0.0727
LNMC	0.091375	0.087085	1.049265	0.3050
LNVT	-0.063537	0.041580	-1.528074	0.1401
LNSI	0.189735	0.100269	3.892261	0.0311
C	0.170464	0.474818	0.359009	0.7229
R-squared	0.994871	Mean dependent var		8.198000
Adjusted R-squared	0.993533	S.D. dependent var		1.707035
S.E. of regression	0.137271	Akaike info criterion		-0.932762

Sum squared resid	0.433394	Schwarz criterion	-0.605816
Log likelihood	20.99143	Hannan-Quinn criter.	-0.828169
F-statistic	743.6074	Durbin-Watson stat	2.152908
Prob(F-statistic)	0.000000		

The result in Table 9 is the outcome of the short run relationship between capital market variables and agricultural sector output in Nigeria. The results of coefficient of determination (r squared) with 0.9948 showed that about 99% of changes in ASO can be explained by changes in capital market development indicators in Nigeria. This means that capital market development has huge explanatory power and can be used as policy measure to control ASO in Nigeria. The F-statistics (743.607) with probability value of 0.0000 showed the overall significance of the capital market variables (MC, VT and SI) at 0.05 level of significance. This means that capital market development indicators have a significant influence in explaining about 99% of changes in ASO in Nigeria. The short run dynamics of the explanatory variables revealed that lagged values of ASO at 1, 2 and 3 lags are explained. The lag 1 and 3 have positive relationship with current ASO while lag 2 has negative relationship. However, at 0.05 level of significance, the p.values for lags 1 and 2 are statistically significant.

The coefficient of regression for MC (0.091375) and SI (0.189735) showed a positive relationship with ASO, while VT (-0.063537) depicted negative relationship. This means that MC and SI have positive effects while VT showed negative effect on ASO in Nigeria. This further implies that a rise in MC and SI brings about proportionate increase in ASO in Nigeria. However, an increase in trading (VT) leads in adverse effect (reduction) in the value of ASO. The probability value of the t-statistics are MC (0.3050 > 0.05), VT (0.1401 > 0.05), and SI (0.0311 < 0.05). Since the p.values for MC and VT are greater than 0.05, we cannot reject the null hypothesis but rejected the null hypothesis for SI. The study thus posits that share index has a positive and significant effect in the short run.

Diagnostic Tests
The diagnostic tests was carried out to determine the reliability of the model estimation and empirical findings on this study. The diagnostics tests carried out include multicolinearity, serial correlation, and normality test.

Multicolinearity Test
Presence of multicolinearity was tested using the Variance Inflation Factor (VIF). The result of the VIF statistics the centred VIFs for all the variables in each of the models are less than 10. Thus the study posits that there is no multicolinearity problem in the study. The results affirm that the coefficients of the regression and coefficient of determinations from the model is correct. There is no over or understatement of the coefficients. Therefore, the explanatory powers reported for the model are the true position of the effect of capital market indicators on agricultural sector output in Nigeria.

Table 5: Test of Multicolinearity using the Variance Inflation Factor

Capital Market Development			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
LNASO(-1)	0.043441	41.310	3.1427
LNASO(-2)	0.075376	79.490	4.2868
LNASO(-3)	0.035092	28.621	2.4561
LNMC	0.007584	18.5844	5.95786
LNVT	0.001729	64.7171	3.07027
LNSI	0.010054	16.113	8.12883
C	0.225452	58.9394	NA

Serial Correlation Test
Presence of serial correlation is explained to confirm the reliability of the significance values and the direction of the coefficient of regression (positive or negative relationship). The presence of serial correlation implies that there is a correlation of time periods in the series which leads to reportage of high significant value, inefficient estimation, exaggerated goodness of fit and false coefficient of regression sign (positive or negative). The results of the Breusch-Godfrey Serial Correlation LM Test of serial correlation are shown in the Table below. The decision rule is to reject the null hypothesis if the p.value is less than 0.05 level of significance.

Table 6: Breusch-Godfrey Serial Correlation Result of the Model

Model	F-statistic	P-value
Capital Market Development	0.686119	0.5145

Source: Eviews 9 output

The results of the F-statistic for the model for capita market showed p.values greater than 0.05. This indicates that the study cannot reject the null hypothesis of no serial correlation. The study thus concludes that there is no serial correlation (of time series) in the model. This confirms that the nature of the relationship (negative or positive) as found in the estimation from the ARDL is correct and true of the model characteristics. As well, the significance values are correct as estimated. This implies that the result of the test of hypothesis from the ARDL gives the correct position of the agricultural sector output determined from capital market.

Normality Test

Test of normality determines the extent to which the results from the model have effect on capital market can be used to predict agricultural sector output in Nigeria. Jarque-Bera is a test statistic for testing whether the series is normally distributed. The null hypothesis is that the variable is normally distributed. The decision rule is to reject the null hypotheses when p.value is less than 0.05 level of significance.

Table 7: Normality Test of the Model of the Study

Models	Jarque-Bera statistic	P-value
Capital Market Development	30.8075	0.000

Source: Extract from Eviews results

From the results on the Jarque-Bera statistics in Table above, the p.value for capital market is below 0.05 level of significance. The study thus rejected the null hypotheses and posits that the model do not have normal distribution.

Hypotheses Testing

The diagnostics tests have shown that the estimated ARDL long run and short run model are reliable for testing the effect of capital market on agricultural sector output in Nigeria. Thus, hypotheses testing are now carried out to determine the significance of capital market indicators on agricultural sector output in Nigeria. The hypotheses are tested separately for the long run and short-run effects. The short-run effects are tested using the adjusted R^2 and the corresponding F-statistics.

Decisison Rules
For Long Run Effect

If the bound values are less than the F-statistics value or if F-statistics is greater than or above the bounds values, reject the null hypothesis and accept the alternative.

For Short Run Effect

At 5% level of significance, reject the null hypothesis, if the F-statistics p.value is less than 0.05.

Test of Hypothesis One

HO_1: Capital market indicators have no significant effect on the agricultural sector output in Nigeria.
HA_1: Capital market indicators have significant effect on the agricultural sector output in Nigeria.

The results of the long run and short run coefficients and the p.value for test of significance are shown as follows:
Long Run Effect: F-Statistics = 2.1428 (Lower and Upper Bounds = 3.23 and 4.35)
Short Run Effect: Adj R^2 = 0.9935; F-statistics = 743.6074; P.value 0.0000

The bound values are greater than the F-statistics (2.1428) or better say the F-statistics is less than the bounds values. This indicates that the null hypothesis cannot be rejected at 0.05 level of significance. The study thus concludes that capital market has no long-run effect on agriculture sector output in Nigeria.
Also, the computed F-statistics (743.6074) has a p.value less than 0.05 for rejection of the null hypothesis of short-run effect. The study concludes that capital market has a short run significant effect on agriculture sector output in Nigeria. The adjusted coefficient of determination indicates 99% explanatory power.

Decision

Capital market has 99% significant short run policy effect but no significant long run effects on agricultural sector output in Nigeria. Therefore, the null hypothesis is rejected for the short run and accepted for the long run.

Conclusion

The results of capital market variable and agricultural sector output nexus have shown that capital market has significant short-run effects on agricultural sector output in Nigeria. About 99% of changes on agricultural sector output can be determined and explained by capital market development variables. Stock market share index is the major determinant of agricultural sector output with a positive and significant effect in the short run. The results of this study showed that in the long run, capital market development does not impact growth in

agricultural sector except in the short run. The coefficient of regression for MC (0.091375) and SI (0.189735) showed a positive relationship with ASO, while VT (-0.063537) depicted negative relationship in the short run. This means that MC and SI have positive effects while VT showed negative effect on ASO in Nigeria. The probability value of the t-statistics are MC (0.3050 > 0.05), VT (0.1401 > 0.05), and SI (0.0311 < 0.05). Since the p.values for MC and VT are greater than 0.05, we cannot reject the null hypothesis for them but we rejected the null hypothesis for SI. The study thus posits that share index has a positive and significant effect in the short run. This indicates that Nigeria capital market may not have invested significantly in the agricultural sector. The capital market is expected to boost long run growth of various sectors where adequate investments are made. However, in the case of Nigeria, the capital market has not shown sufficient evidence that it drives the agricultural sector. Nonetheless, only the share index that depicts the trends in the movement of stock prices influenced the agricultural sector.

Recommendations
Government through the Central Bank of Nigeria should introduce and implement financial policies (monetary policies) that will make the capital market more efficient. The cost of doing business in the capital market should be reduced so as to make it profitable.

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