Effect of Financial Development on Agricultural Growth in Nigeria: (1981-2022)

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Abstract
This study examined the effect of financial development on agricultural growth in Nigeria covering the period 1981 to 2022. ***Background:*** *There is nosedive of agricultural output occasioned by the discovery of oil and eventual shift of emphasis to crude oil. The agricultural sector in Nigeria have challenges of inadequate access to: finance, quality seeds, fertilizers, pesticides, mechanized farming tools, preservation techniques and storage facilities.* ***Aims:*** *The specific objectives were to examine the effect of credit to private sector (% of GDP); broad money supply (% of GDP); prime lending rate; savings rate and total savings (% of GDP) on agricultural output.* ***Methods:*** *Annual time series data was obtained from CBN statistical bulletin. The ex-post-facto research design was used. The descriptive statistics was done while the hypotheses were tested at 5% significance level using OLS technique.* ***Results:*** *The findings showed that: CPS/GDP had insignificant effect (prob. – 0.5196) on AGOP; M3/GDP had insignificant effect (prob. - 0.4687)*

on AGOP; PLR had significant effect (prob. – 0.0001) on AGOP; SAVRATE had significant effect (prob – 0.0045) on AGOP; while TS/GDP had an insignificant effect (prob. – 0.7191) on AGOP. The Prob(F-statistic) value of 0.000145 showed that proxies for financial development are jointly significant to agricultural output in Nigeria. The R^2 value of 0.486282 showed that the financial development variables jointly account for about 49% of changes in agricultural output. ***Conclusion:*** *The study showed that the financial development variables contributed to agricultural output in Nigeria for the period reviewed.*

Keywords: *Financial development, private sector credit, money supply, prime lending, agricultural output*

Introduction

Agriculture has been the main stay of the Nigerian economy before the discovery of crude oil. People engage in agriculture for both commercial and subsistence purposes. Nigeria have large arable land and in time past have been the bride sought after by developed countries in view of its exportable agricultural products. These products include cocoa, palm oil, cotton, millet, sorghum, cashew nut, groundnut which were produced in large quantities. These exports helped boost the foreign exchange earnings and consequently the Nigerian economy. Umaru and Inusa (2022) stated that agricultural output is important in every developing country, especially in Nigeria as food insecurity, high food import, and increasing food prices are pestering issues that have not been addressed, thus, the growing need to increase agricultural sector output.

Agriculture is one of the key economic sectors of any country because it provides food security for the nation, ensures that people grow their own food for consumption, eradicate poverty especially in the rural and among most marginalized communities (Beckman & Countryman, 2021). In Nigeria, agriculture has a crucial role as the economic backbone for many households and is a substantial sector of the country's economy (Ayeomoni & Aladejana, 2016). The agricultural sector of Nigeria's economy has the critical role of broadening the productive and export base of the economy by creating employment, ensuring industrial input, full security and economic growth.

Ojo et al. (2022) stated that agriculture has remained the source of producing food for human sustenance and input materials for various industries. Agriculture is expected to be a major contributor to GDP given the vast arable land available and high number of farmers in Nigeria. It stands out as being strategic in the Nigerian economy, hence the need to give the right attention by government and policy makers. Akinwumi's study (2013, as cited in Ekine and Onu, 2018) opined that Nigeria was known to be food sufficient, a major producer of agricultural products and earns foreign exchange from agricultural exports. This he said have been used over the years to support the finance of Nigeria's imports necessary for economic growth and development just after independence.

Financial deepening enables the financial assets to be available to potential users of funds. A low financial depth implies narrow range of financial assets in a country. Financial deepening is likened to financial development hence will be used interchangeably in this work. Financial deepening not only helps in deposit mobilization but assists in resource allocation, hence it is

expected to boost agricultural output given the crucial role of finance to this sector (Tuaneh & Ewubare, 2016). The financial development variables are expected to help provide funds which the agricultural sector will benefit from. The forgoing will help drive agricultural sector output and eventual growth and development of the economy in the long-run. Beck's study (2007, as cited in Tuaneh & Ewubare, 2016) stated that financial deepening in itself is not a goal but tool for economic growth. It is pertinent to note that this growth cum eventual development can be achieved through increased agricultural sector output.

Increased agricultural output will help reduce the over reliance on oil revenue with its attendant issues of fall in price and reduction in demand by the developed economies. Furthermore, emphasis on agriculture will help achieve the diversification of the Nigerian economy. Agricultural sector output have the potential to generate gainful results in the areas of sustained food security, higher human development and lower pressure on land and water. Financial deepening will lead to greater financial access to the citizens. The financial deepening proxies include savings deposit rate, total savings in banks, credit to the private sector, broad money supply, prime lending rate amongst others. The availability of funds and its accessibility at friendly rates will help those in the agricultural sector to boost their production. The issue of poverty will be greatly reduced with sustainable development in the agricultural sector. The agricultural sector growth road map must be revisited and harnessed for Nigeria to attain a successful and sustainable economic growth and development in the midst of competitive economies across the globe. Agriculture helps people to make a living hence cannot be relegated to the background in Nigeria.

Agriculture contributed to 63.8% of gross domestic product (GDP) as at 1960, but has dropped drastically to 23.8%, 20.3% and 21.4% in 2010, 2014 and 2018 respectively (Fowowe, 2020). This nosedive was occasioned by the discovery cum shift of emphasis to crude oil. In Nigeria, the crude oil revenue take-over of the center stage in government revenue have led to alarming decrease in revenue from agriculture. The federal government paid attention to crude oil exploration and export as an easy source of foreign exchange to the detriment of agriculture. The shift of attention made Nigeria loose her self-sufficiency status in food production. This eventually led to importation of food and animals by Nigerians with its attendant high cost.

Fowowe (2020) hinted that factors as poor access to modern inputs and credit, poor infrastructure, inadequate access to markets, land and environmental degradation as well as inadequate research and extension services combined with the diminishing income levels of agricultural households, have subsequently exacerbated poverty. Some of the present day farmers are using crude tools leading to low productivity which eventually keeps farmers poor. Also, farmers have challenges of quality seeds, fertilizers, pesticides, mechanized farming tools, preservation techniques and storage facilities. Amongst these challenges, finance stands out as funds are needed to acquire other farm inputs needed for increased production. Government poor allocation to agriculture, not meeting lending requirements, high interest rate and short repayment period are also challenges faced by farmers.

The sectorial distribution of commercial banks loans and advances showed that agriculture got 8%, 1.96%, 1.67%, 3.26%, 5.15%, 5.98% and 6.16% in years 2000, 2006, 2010, 2016, 2020, 2021 and 2022 respectively (CBN bulletin, 2022). This poor growth trend seems to contribute to poor agricultural output in Nigeria. This could have also contributed to the slight rise and eventual near stagnation of agricultural sector output (as percentage of GDP) of 21.57%, 24.99%, 23.89%,

21.21%, 24.45%, 23.70% and 24.05% in years 2000, 2006, 2010, 2016, 2020, 2021 and 2022 respectively (CBN bulletin, 2022)

It is estimated in FAO's study (2017, as cited in Ekine and Onu, 2018) that Nigeria has lost $10billion in annual export opportunity from groundnut, palm oil, cocoa and cotton alone due to reduction in their production. Furthermore, Ekine and Onu (2018) observed that agricultural sector is growing at a slow pace given its initial abandonment for oil, government inadequate support and non-cultivation of large chunk of our arable land.

Oyelade (2019) highlighted a major reason behind the decline of the agricultural sector's contribution to the GDP as lack of access to credit from commercial banks. This lack of access hinders farmers from seizing economic opportunities, increasing output, and escaping poverty. This has hampered the growth of the agricultural sector and have adversely affected the poor farmers who would have relied on borrowing to boost their production. This have led to the inability of most farmers to do mechanized farming using modern technology that would have enhanced their productivity.

These amongst others are challenges hampering the growth of the agricultural sector which could be reduced with the appropriate harnessing and use of financial development indicators. There is therefore the need to have an up to date assessment of the effect of financial development on agricultural sector output.

This study specifically had the following objectives:

1) To assess the effect of credit to private sector on agricultural output in Nigeria.
2) To ascertain the effect of broad money supply on agricultural output in Nigeria.
3) To examine the effect of prime lending rate on agricultural output in Nigeria.
4) To assess the effect of savings rate on agricultural output in Nigeria.
5) To ascertain the effect of total savings on agricultural output in Nigeria.

The following hypotheses were accordingly formulated:

$H_0$1: Credit to private sector had no significant effect on agricultural output in Nigeria.
$H_0$2: Broad money supply had no significant effect on agricultural output in Nigeria.
$H_0$3: Prime lending rate had no significant effect on agricultural output in Nigeria.
$H_0$4: Savings rate had no significant effect on agricultural output in Nigeria.
$H_0$5: Total savings had no significant effect on agricultural output in Nigeria.

Conceptual review

Etea and Obodoechina (2019) referred to the agricultural sector as those activities that give rise to the production of crops and rearing of animals for man's use. Oni (2018) however defined it as the growing of both plants and animals for human needs. It was also stated that agriculture encompass various forms of farming as cultivation of land, fishing, livestock, poultry and forestry (Ojo et al., 2022). Agriculture has the capacity to produce food for man, provide raw materials for industries, provides employment opportunities for Nigerians and as well as increase export. These in the overall expand the productive capacities of industries and help earn foreign exchange for the development of the Nigerian economy.

Financial deepening is an increase in the financial asset in an economy (Tuaneh & Ewubare, 2016). They further explained that shallow financial depth consequently means narrow range of financial assets in a country. Financial deepening therefore deals with the volume of funds

that is available and the relative ease with which people can access it. The availability of funds, its costs and procedure for accessing it by farmers will definitely affect agricultural production. The financial deepening variables (such as savings rate, credit to private sector, broad money supply, prime lending rate, total savings etc) have crucial economic roles to play in promoting or discouraging agricultural output in Nigeria.

Theoretical review

The Ronald McKinnon Complementary Theory of Financial Deepening: This theory states that money and investment are complementary. This implies that real deposit rate is the key determinant of capital formation. Capital accumulation may be discouraged by the fact that for a high inflation rate, nominal interest rates are set too low and thus real interest rates could be negative. As capital supply of banking sector is limited and banks have only specialized credit activities, people (those in agricultural sector inclusive) have to finance their investment projects by themselves or have to patronize the informal sector where interest rates are often usurious. Low volume of funds and its possible high cost will adversely affect access and cost of funds needed to boost agricultural output. (Kisaka, Adhianbo, Ndege & Muio, 2015).

The theory of inclusive growth: This theory states that inclusive growth in the economy can only be achieved when all the weaker sectors of the society, including agriculture and small scale industries, are nurtured and brought at par with other sectors of the society in terms of economic development (kalu et al., 2018).

The finance-growth theory: The finance-growth hypothesis states that the existence of an energetic financial sector has growth-enhancing effects. This theory identified access to finance as a critical factor responsible for persistent income inequality as well as slower growth. It posits that financial development creates a productive environment for growth through "supply leading" or "demand-following" effect. As such, access to safe, easy and affordable source of finance is recognized as a pre-condition for accelerating growth and reducing income disparities and poverty which creates equal opportunities, enables economically and socially excluded people to integrate better into the economy and actively contribute to development and protect themselves against economic shocks (Serrao et. al, 2012 as cited in Kalu et al., 2018).

Empirical review

Salisu and Adamu (2023) investigated the effect of bank lending on agricultural activities in Nigeria for the period 1981 to 2021. Secondary data was obtained and analysed using descriptive statistics, pear wise correlation matrix, unit root test, co-integration test and auto regressive distributed model (ARDL). The result of the study showed that commercial bank lending to agriculture and interest rate has a positive and statistically significant effect on agricultural output in Nigeria.

Umaru and Inusa (2022) examined the asymmetric effect of financial inclusion on agricultural output in Nigeria. The variables used were volume of automated teller machines, point of sale, mobile banking pay and cheques. Data was sourced from the Nigerian Inter-Bank Settlement System Plc (NIBSS) and CBN statistical bulletin 2021. The non-linear Autoregressive Distributed Lagged (NARDL) model and Stepwise Least Squares (STEPLS) were employed in the estimation. The study revealed that financial inclusion positively and significantly affect agricultural output in Nigeria for the period reviewed.

Ojo et al., (2022) examined the impact of financial sector development on agricultural output in Nigeria using ARDL estimation technique. They used money supply, credit to private sector and loans to agricultural sector as indicators of financial development, while using proportion of GDP to agricultural sector as a proxy for agricultural output in Nigeria. The annual data used covered the period of 1981 to 2020. They found out that agricultural sector loans had negative impact on agricultural output in both short and long-run. Also, that adjusted money supply (adjusted M2) had positive impact on agricultural sector output in the long-run in Nigeria.

Kunofiwa (2022) investigated the determinants of agricultural sector growth in upper middle-income countries using panel data analysis covering the period 2005 to 2020. The impact of the complementarity between financial and human capital development on agricultural sector growth was also explored in the case of upper middle-income countries. The study found out that agricultural sector growth was positively and significantly influenced by its own lag under the dynamic Generalized Methods of Moments (GMM) approach. Also, fixed effects showed that financial development had a significant deleterious impact on agricultural sector growth whilst a significant positive relationship running from financial development towards agricultural sector growth was observed under the pooled ordinary least squares (OLS). The dynamic GMM and the pooled OLS indicated that economic growth's influence on agricultural sector growth was significantly negative. Fixed effects, random effects and pooled effects showed that trade openness influence on agriculture sector growth was found to be significantly positive. Fixed and random effects noted that population growth had a significant positive impact on agricultural sector growth whilst population growth's influence on agricultural sector growth was observed to be significant.

Fowowe (2020) conducted an empirical investigation of the effects of financial inclusion on agricultural productivity in Nigeria. The Living Standards Measurement Study– Integrated Surveys on Agriculture (LSMS-ISA) methodology was used. The study exploited the time series and cross-section dimension of the data by using panel data estimation. They found out that financial inclusion exerted positive and statistically significant effects on agricultural productivity in Nigeria.

Okuma (2019) examined the causal relationship between financial development and agricultural sector output in Nigeria (AOG). The ex-post-facto research design was employed with annual time series data obtained from the Central Bank of Nigeria (CBN) statistical bulletin. Unit root test, Engle–Granger co-integration test, Error Correction Model (ECM) test and Granger Causality Tests were employed in the analyses. The descriptive statistics and inferential measure were used in analyzing the aggregated causality results. Financial development proxies were: financial deepening, financial inclusion, financial liberalization, financial intermediation, cashless policy and consolidation reform. The results of the analysis showed that, financial deepening, financial inclusion, financial liberalization, financial intermediation and consolidation reform policies explained 25%, 41%, 25%, 35% and 17% of changes that take place in agricultural sector output in Nigeria respectively. The variables also had insignificant effect on the dependent variable. Also, cashless policy explained 91% of the changes in AOG and had significant effect on the dependent variable.

kalu et al. (2018) investigated the effect of financial inclusion on the agricultural sector in Nigeria. The study utilized survey data generated from 600 recovered questionnaires which were administered to farmers in both rural and urban locations in Nigeria. The study developed adequacy gap index and timeliness gap index to measure the penetration gap index theory of

financial inclusion through the application of the pecking order theory. The adequacy and timeliness gap indices revealed that the different formal lending agencies were unable to meet the credit needs of these small scale farmers hence, credit was inadequately and untimely provided to small scale farmers because they depend on rain-fed agriculture. The penetration gap index revealed that the penetration of financial inclusion in agricultural sector is still shallow in Nigeria.

Olaniyi (2017) examined if rural financial inclusion enhance agricultural growth. The study used annual data covering the period 1981 to 2014. The ARDL bounds testing approach was used to analyze the long-run and short-run dynamics of the relationship between financial inclusion and agriculture in Nigeria. The findings showed that usage of financial services had significant impact on agriculture both in the short-run and long-run. This means that for sustainable agricultural development in rural areas, improving financial inclusion is critical in Nigeria. On the contrary, access to finance had insignificant impacts on agricultural growth.

Tuaneh and Ewubare (2016) examined the effect of financial deepening on agricultural contribution to GDP in Nigeria for the period 1981 to 2014. Specifically, the influence of financial deepening M2/GDP (%) (X1), and CPS/GDP (%) (X2) on overall, agriculture's contribution to Gross domestic product (Y), crop contribution to GDP (Y1) and livestock contribution to GDP (Y2). The study utilized secondary data sourced from CBN statistical bulletin. The data were subjected to stationarity and co-integration tests before using multiple regression analysis. The causal links between the pairs of explanatory variables of interest and the criterion variable were established using the multiple regression. The test of goodness of fit showed that all three models had a good fit (R2 = 62.45%, 62.49% and 62.36%). The test of significance revealed that; money supply as a ratio of GDP and Credit to the private sector as a ratio of GDP significantly affect agriculture's contribution to GDP, crop contribution to GDP and livestock contribution to gross domestic product.

Egwu (2016) examined the impact of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. The ordinary least square regression technique, unit root and co-integration tests were used in the data analysis. The findings revealed that commercial bank credit to agricultural sector (CBCA) and agricultural credit guarantee scheme fund loan to Nigeria's agricultural sector (ACGSF) were significant to agricultural sector output percentage to gross domestic product (ASOGDP) the dependent variable, thereby alleviated the poverty rate and induced to economic growth in Nigeria. Also, that there exist a long-run relationship among the variables in Nigeria for the period studied.

Methodology

The *ex-post facto* research design was adopted while data for the variables were obtained from the Central Bank of Nigeria statistical bulletin for the period 1981 to 2022. The data was analyzed using descriptive statistics and regression technique.

The regression model relationship is:

$Y_t = b_0+b_1X_1+b_2X_2+b_3X_3 \ldots + bnXn + e$

Where:
- Y = dependent variable
- b_0 = intercept term
- b_1, b_2, b_3 = parameters or coefficients of the model
- X_1, X_2, X_3 = independent or explanatory variables.
- e = error term

The functional relationship of financial development and agricultural sector output can be specified in the following model:

AGOP/GDP = f(CPS/GDP, M3/GDP. PLR, SAVRATE, TS/GDP)

The model is explicitly defined as follows:

$AGOP/GDP_t = b_0 + b_1CPS/GDP_t + b_2M3/GDP_t + b_3PLRt + b_4SAVRATE_t + b_5TS/GDP_t + et$

Where: AGOP/GDP = agricultural output

CPS/GDP = credit to private sector (% of GDP)

M3/GDP = broad money supply (% of GDP)

PLR = prime lending rate

SAVRATE = savings rate

TS/GDP = total savings (% of GDP)

The financial deepening variables used to proxy financial development were credit to private sector, broad money supply, prime lending rate, savings rate and total savings. The agricultural sector output was used to proxy the Nigerian economy hence used as the dependent variable. The E-views10 processing software was used for data analysis and hypotheses tested at 5% level of significance. The *a-priori* expectation is that the independent variables (CPS/GDP, M3/GDP, PLR, SAVRATE and TS/GDP) will have significant effect on the dependent variable (AGOP/GDP). The decision rule was to accept the null hypothesis if the probability value is greater than 0.05, otherwise reject null and accept the alternate hypothesis.

Data Presentation

Table 1 shows the raw data on credit to private sector, broad money supply, prime lending rate, savings rate, total savings and agricultural output.

YEAR	AGOP/GDP	SAVRATE	TS/GDP	CPS/GDP	M3/GDP	PLR
1981	12.36	6.00	4.71	6.15	10.39	7.75
1982	13.64	7.50	5.04	7.16	10.59	10.25
1983	15.14	7.50	5.95	7.35	11.14	10.00
1984	18.49	9.50	6.63	7.51	12.12	12.50
1985	18.41	9.50	6.67	6.96	11.87	9.25
1986	18.20	9.50	7.03	7.70	12.02	10.50
1987	20.76	14.00	7.63	8.62	11.27	17.50
1988	23.60	14.50	7.37	8.66	12.15	16.50
1989	21.49	16.40	5.74	7.33	11.06	26.80
1990	21.77	18.80	5.99	6.78	9.59	25.50
1991	21.09	14.29	6.40	7.01	12.78	20.01
1992	20.50	16.10	6.08	6.42	12.26	29.80
1993	23.71	16.66	6.76	10.11	13.15	18.32
1994	25.41	13.50	6.27	8.11	13.02	21.00
1995	25.74	12.61	3.50	5.81	9.32	20.18
1996	26.45	11.69	3.29	5.84	8.46	19.74
1997	27.69	4.80	4.02	7.16	9.35	13.54

1998	28.23	5.49	4.16	7.32	10.16	18.29
1999	26.30	5.33	5.06	7.86	11.47	21.32
2000	21.57	5.29	5.45	7.51	12.44	17.98
2001	24.72	5.49	5.93	9.29	15.41	18.29
2002	37.45	4.15	5.15	8.09	13.09	24.85
2003	34.17	4.11	4.84	8.09	14.41	20.71
2004	27.51	4.19	4.40	7.84	11.76	19.18
2005	26.36	3.83	5.70	7.95	11.41	17.95
2006	24.99	3.14	5.73	7.54	12.50	17.26
2007	24.92	3.55	7.75	10.58	14.79	16.94
2008	25.54	2.84	10.63	19.77	21.63	15.14
2009	27.03	2.68	13.13	22.75	22.29	18.99
2010	23.89	2.21	10.71	18.96	20.01	17.59
2011	22.29	1.41	10.24	15.07	19.82	16.02
2012	22.05	1.70	11.05	18.31	21.35	16.79
2013	20.99	2.17	11.85	17.85	23.14	16.72
2014	20.24	3.38	12.70	18.59	22.65	16.55
2015	20.86	3.58	12.36	19.64	21.94	16.85
2016	21.21	3.75	13.68	20.50	23.65	16.87
2017	21.06	4.13	12.59	19.55	24.90	17.56
2018	21.43	4.07	11.28	17.54	23.07	19.33
2019	22.12	3.95	11.60	17.63	23.52	15.53
2020	24.45	3.22	13.51	18.82	23.36	12.32
2021	23.70	1.69	14.53	18.65	22.93	11.48
2022	24.05	2.34	14.94	19.25	23.95	12.34

Source: CBN statistical bulletin (2022)

Results and Discussion:

Table 2: Descriptive Statistics.

	AGOP_GDP	C	CPS_GDP	M3_GDP	PLR	SAVRATE	TS_GDP
Mean	23.13286	1.000000	11.65764	15.62427	17.18984	6.917068	8.049396
Median	22.94500	1.000000	8.099415	12.89917	17.38000	4.492500	6.645847
Maximum	37.45000	1.000000	22.75484	24.89526	29.80000	18.80000	14.94330
Minimum	12.36000	1.000000	5.806165	8.464230	7.750000	1.410541	3.291754
Std. Dev.	4.591129	0.000000	5.591579	5.450332	4.646753	4.991640	3.464103
Skewness	0.447037	NA	0.614361	0.485125	0.307545	0.933814	0.547543
Kurtosis	4.866006	NA	1.606820	1.544641	3.467020	2.509977	1.876371
Jarque-Bera	7.492357	NA	6.038740	5.354051	1.043777	6.524276	4.308072
Probability	0.023608	NA	0.048832	0.068767	0.593399	0.038306	0.116015
Sum	971.5800	42.00000	489.6208	656.2193	721.9733	290.5169	338.0746

Sum Sq. Dev.	864.2171	0.000000	1281.896	1217.951	885.2847	1021.575	492.0004
Observations	42	42	42	42	42	42	42

The above table displayed the descriptive statistical behaviour of all the parameters that were subjected to estimation in this study.

Table 3: Regression output

Dependent Variable: AGOP_GDP
Method: Least Squares
Date: 01/07/24 Time: 07:17
Sample: 1981 2022
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.09489	3.499127	5.742829	0.0000
CPS_GDP	0.284793	0.437908	0.650350	0.5196
M3_GDP	-0.366068	0.499850	-0.732356	0.4687
PLR	0.670112	0.151771	4.415268	0.0001
SAVRATE	-0.571744	0.188806	-3.028204	0.0045
TS_GDP	-0.264223	0.728899	-0.362495	0.7191

R-squared	0.486282	Mean dependent var	23.13286
Adjusted R-squared	0.414933	S.D. dependent var	4.591129
S.E. of regression	3.511741	Akaike info criterion	5.481664
Sum squared resid	443.9637	Schwarz criterion	5.729903
Log likelihood	-109.1150	Hannan-Quinn criter.	5.572654
F-statistic	6.815478	Durbin-Watson stat	1.007434
Prob(F-statistic)	0.000145		

The value of R-squared given as 0.486282 showed that the independent variables explained 49% of the changes in the dependent variable. Also, the Prob(F-statistic) value of 0.000145 indicated that the model is fit to explain the relationships of the variables since it is less than 0.05.

Hypotheses testing

Table 4: summary statistics for hypotheses testing

Hypothesis	**Variable**	**Coefficient**	**t-statistic**	**Probability**	**Decision**
One	CPS/GDP	0.284793	0.650350	0.5196	Accept H_0
Two	M3/GDP	-0.366068	-0.732386	0.4687	Accept H_0
Three	PLR	0.670112	4.415268	0.0001	Reject H_0
Four	SAVRATE	-0.571744	-3.028201	0.0045	Reject H_0
Five	TS/GDP	-0.264223	-0.264223	0.7191	Accept H_0

Hypothesis One: Credit to private sector had no significant effect on agricultural output in Nigeria.

The probability value is 0.5196 which is greater than 0.05 level of significance. The null hypothesis is therefore accepted and it is concluded that credit to private sector had insignificant effect on agricultural output in Nigeria for the period reviewed.

Hypothesis Two: Broad money supply had no significant effect on agricultural output in Nigeria.

The probability value is 0.4687 which is greater than 0.05 level of significance. The null hypothesis is therefore accepted and it is concluded that broad money supply had insignificant effect on agricultural output in Nigeria for the period reviewed.

Hypothesis Three: Prime lending rate had no significant effect on agricultural output in Nigeria.

The probability value is 0.0001 which is less than 0.05 level of significance. The null hypothesis is therefore rejected and it is concluded that prime lending rate had significant effect on agricultural output in Nigeria for the period reviewed.

Hypothesis Four: Savings rate had no significant effect on agricultural output in Nigeria.

The probability value is 0.0045 which is less than 0.05 level of significance. The null hypothesis is therefore rejected and it is concluded that savings rate had a significant effect on agricultural output in Nigeria for the period reviewed.

Hypothesis Five: Total savings had no significant effect on agricultural output in Nigeria.

The probability value is 0.7191 which is greater than 0.05 level of significance. The null hypothesis is therefore accepted and it is concluded that total bank savings had insignificant effect on agricultural output in Nigeria for the period reviewed.

Conclusion

This study showed that the financial development variables jointly had significant effect on agricultural output in Nigeria for the period reviewed. Summarily, credit to private sector, broad money supply and total savings had insignificant effect on agricultural output, while prime lending rate and savings rate had significant effect on agricultural sector output in Nigeria for the period reviewed. This study concluded that the model was statistically significant given its prob(F-statistic) value of 0.000145.

Recommendations

(1) Credit to the agricultural sector should be encouraged, this will help to reverse its insignificant effect on agricultural output in Nigeria.

(2) The CBN monetary policies should be geared towards increasing the broad money supply. This will assist farmers to have access to more funds hence more output of agricultural products.

(3) The prime lending rate should be continually used to achieve low interest credit to the agricultural sector. This will boost lending to agricultural sector and hence output.

(4) The savings rate should be left as reviewed upwards by the CBN. This will help attract more idle funds to the formal banking space which will be used to boost agricultural sector output.

(5) Bank deposits should be directed more to agricultural sector to reverse its insignificant effect.

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