

Financial Consolidation and Agricultural Sector Output In Nigeria

OKUMA, N. Camillus. (Ph.D)

*Department of Banking and Finance, Madonna University Nigeria, Okija Campus, Anambra State.
+2348034076419.*

ABSTRACT:- This study examines the Relationship between Financial Consolidation and Agricultural Sector Output in Nigeria (AOG). Ex-post facto research design was employed and the annual time series data for various years were obtained from 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 analyses. Prime Lending Rate, Deposit Rate, Total Loan and Advance to GDP ratio, Total Deposit of Deposit Money Bank to GDP Ratio and Minimum paid up Capital of Commercial Banks/Deposit Money Banks are used as indicators of financial consolidation. Hence the study concluded that AOG predicts financial consolidation in Nigeria. The study therefore recommends establishment of functional and practical agricultural institutions in Nigeria, establishment of functional agro-firms and encouragement of private owned cottage and micro firms that will be employing the skilled labour and also make use of the agricultural sector output as their raw materials. Encouragement of farmers through; soft credit facilities, tax free at their early stage of establishment, reduction of the total cost incurred by cottage farmers.

Keywords:- Agricultural Sector Output, Prime Lending Rate, Deposit Rate, Total Loan and Advance to GDP ratio, Total Deposit of Deposit Money Bank to GDP Ratio and Minimum paid up Capital of Commercial Banks/Deposit Money Bank.

I. BACKGROUND TO THE STUDY

The main objective of Nigerian financial consolidation reform is to guarantee an efficient and stable financial system. Policy of consolidation was made to make strong and strengthen the Nigeria banking system through recapitalization with an option of merger and acquisition. According to Lemo (2005), the consolidation reform was designed to enable the banking sector develop the required capacity to support the economic development of the nation by efficiently performing its duties as its primary tool of financial intermediation.

Before consolidation, so many crises in the financial sector were traced to low capital base of the banking industry in Nigeria. For instance, there was a significant closure of banks, takeover of management and control by the central bank of Nigeria (CBN) and the Nigerian deposit insurance corporation (NDIC), while the statutory minimum risk – weighted capital ratio remained at 8% on average, the number of banks in Nigeria shrank by approximately 22% between 1997 and 1999 (Asogwa, 2004). It is obvious that consolidation could increase banks' propensity towards risk taking by increasing in leverage and off balance sheet operations (Yahaya, 2015). Forlong (1994) opined that an early view of consolidation in banking was that it made banking sector more cost efficient because larger banks could eliminate excess capacity in areas like data processing, marketing or overlapping branch networks. Nzotta (2014) ascertained that the implication of consolidation is that a highly capitalized bank will not have problems in carrying obligations. The requirement for lead banking system in Nigeria and settlement of banks in the clearing system became unnecessary since a highly capitalized and consolidated bank is required to be a strong and solid clearing and settlement bank.

Banking consolidation has been an on-going phenomenon around the world right from the 1980s but it is more intensified in recent period due to its positive effect on globalization which is precipitated by continuous

integration of the world market. In Nigeria, the consolidation in the banking industry proceeded against the backdrop of banking crises due to highly undercapitalized deposit taking by banks; weakness practices; and the tolerance of deficiencies in the corporate governance behavior of banks (Uchendu, 2005). Banking sector consolidation has resulted from deliberate policy response to correct existing, perceives and impending financial system crises and subsequent failures. To be better positioned to deliver on its growth and development functions, advocates of bank capital; like Cannan (1921), opined that banks should be adequately capitalized to be able to absorb shocks and make sure that there is stability in the financial system in Nigeria, for instance, bank capital is a major aspect of bank reforms since 1952.

Table 1: Overview of Minimum Paid up Capital of Banks in Nigeria {1952-2017}

Year	Bank	Minimum Capital Requirement (MKR)
1952	Commercial banks	#25,000.00
1969	Commercial banks	#600,000.00
1988(February)	Commercial banks	#5,000,000.00
1988(October)	Commercial banks	#10,000,000.00
1989	Commercial banks	#20,000,000.00
1991	Commercial banks	#50,000,000.00
1997	Commercial banks	#500,000,000.00
2000	Commercial banks	#1,000,000,000.00
2001	Commercial banks	#2,000,000,000.00
2005date	Commercial banks	#25,000,000,000.00

Source: Authors Computation, 2018

Different episodes of bank capitalization in Nigeria aim at achieving adequate capital base to drive credit as well as provide adequate cover for bank credit (Okafor, 2011). Soludo (2004), posited that 2004/2005 upward review of bank capital base, from two billion naira to twenty – five billion naira, was aimed at developing a diversified, strong and reliable banking sector capable of playing active developmental roles in the local economy and of being competent and competitive player in the African regional and global financial system. .

According to Soludo (2007), in terms of policy thrust, the financial sector reform is expected to build and foster a competitive and healthy financial system to support development and to avoid systematic distress. He also further argued that deepening the financial sector in terms of assets volume and instrument diversity could lead to serious reduction of fiscal deficit financing and freeing resources for lending to the private sector reforms will bring about a structural financing for cheap fund to the productive sector and financial accommodation for small and rural credit scheme.

1.2 Statement of the Problem

Despite notable success in various consolidation reforms which increased the capital base of banks and their capacities in allocation of funds to other sectors of the economy, more especially to the Nigerian agricultural sector and making financial policies that will favour the sector, agricultural output still declines. There seems to be no impact of all these policies on economic growth and poverty has remains prevalent in the nation for many years. Consequently, there is need to conduct an empirical research to examine the relationship of various consolidation policies that are meant to improve the economy and enhance the growth of the agricultural sector in Nigeria in particular.

1.3 Objectives of the Study

The main objective of the study is to examine the relationship between Consolidation reform policies and Agricultural Sector output in Nigeria. The specific objectives are to:

- i. Examine the relationship between Prime Lending Rate and Agricultural Sector Output in Nigeria.
- ii. Determine the relationship between Deposit Rate and Agricultural Sector Output in Nigeria.
- iii. Investigate the causal relationship between Total Loan and Advance to GDP ratio and Agricultural Sector Output in Nigeria.
- iv. Ascertain the relationship between Total Deposit of Deposit Money Bank to GDP Ratio and Agricultural Sector Output in Nigeria
- v. Examine the causal Relationship between Minimum paid up Capital of Commercial Banks/Deposit Money Bank and Agricultural Sector Output in Nigeria.

1.4 Hypotheses

The following hypotheses were tested at 5 percent level of significance:

Hypothesis One

H₁: Prime Lending Rate has no significant relationship with Agricultural Sector Output in Nigeria.

Hypothesis Two

H₂: There is no significant relationship existing between Deposit Rate and Agricultural Sector Output in Nigeria.

Hypothesis Three

H₃: Total Loan and Advance to GDP ratio does not significantly predict Agricultural Sector Output in Nigeria.

Hypothesis Four

H₄: There is no evidence of significant causality between Total Deposit of Deposit Money Bank to GDP Ratio and Agricultural Sector Output in Nigeria.

Hypothesis Five

H₅: Minimum paid up Capital of Commercial Banks/Deposit Money Bank does not significantly spur Agricultural Sector Output in Nigeria.

II. REVIEW OF RELATED LITERATURE

2.1 Conceptual framework

Consolidation of bank connotes the selling of equities at a gain and reinvesting of the proceeds in fixed-interest securities. It can be conceptualized as a fusion of the assets and liabilities, in whole or in part, of two or more business enterprises to form an entirely new establishment. From the above definitions, consolidation represents the idea of investment and coming together of firms or enterprises as a single entity.

In targeting consolidation of banking sector in Nigeria, the CBN on July 6th 2004 announced a major policy shift regarding the banking sector. The policy's agenda was to reposition the CBN and the financial system for the 21st century with the goal to consolidate and build upon the achievements of the sector in the past decade and take the system to greater heights. The first phase of the policy was to consolidate and strengthen the Nigeria banking system through re-capitalization with an option of merger and acquisition while the second phase will address the issue of diversification which will include programme to encourage the emergence of regional and units/ specialized banks. These however, are targeting ensuring that Nigerian banking industry meets the development challenges of 21st century was received with great skepticism and agitation against it by most stakeholders. They saw it as means of folding –up, end or closure of their business. Though the policy thrust at inception, was to grow the banks and position them to play pivotal roles in driving development across the sectors of the economy. As a result bank were consolidated through merger and acquisition, raising the capital base from ₦2 billion to a minimum of ₦25 billion, which reduced the number of banks from 81 to 25 in 2005, and later to 24 (Sanusi, 2012). The implication of consolidation is that a highly capitalized bank will not have problems in carrying out its payments and clearing obligations. The requirement for lead banks and settlement of banks in the clearing system became unnecessary since a highly capitalized bank is required to be a solid clearing and settlement bank (Nzotta 2014).

In the research of Okonkwo and Bankoli (2016), they opined that CBN provided some incentives for the banks so that they could achieve the #25 billion naira minimum capital base before the implementation period of Dec.31st 2005. These include:- giving the banks freedom to deal through the foreign exchange, accepting of deposit from public sector, fiscal authorities and collection of revenue from the public sector, some tax incentives were provided for the banks in the area of stamp duty and caption allowance. Transaction costs had been minimized, an expert team was inaugurated by the government to provide technical support to the banks when needed, the establishment of web portal for all the citizens to share any confidential information with the Central Bank regarding the banking systems. An automated process was developed to report the banks return and the CBN revised and updated all necessary banking rules and regulations to make the banking system move flexible, effective and transparent. The introduction of the monetary base as a policy target appears to have had some positive effects on the targets of GDP, increased credit to the private sector reduce credit to public sector and encouraging impact on inflation rate. Monetary base also started having some impacts on M₁ and M₂ in 2004 and 2005 respectively. The monetary base which is a key determinant of money supply is on the decline (Ono 2013). It is this period that Nigeria payment is reformed and subsequently the CBN introduced a number of reformations including the payment system reformation in 2006.

2.2 Empirical Review

2.2.1 Consolidation Policy and Agricultural Sector Output

Adeusi and Oke (2013) investigated on the Impact of Bank Consolidation on Nigerian Economic Growth. The scope of their study is 1986 to 2010. The study adopts Gross Domestic Product (GDP) as a measure of Economic Growth and Interest Rate Margin (IPM), Credit to Private Sector (CPS), Savings (SAV) and Inflation Rate (INF) as indicators of Bank Consolidations. They used econometric techniques of ADF, Unit Root Test, Johanson Co-integration Test and Error Correction Mechanism (ECM). The empirical result shows the presence of significant relationship among the variables findings. However, it suggests that bank consolidation has no significant impact on the economy.

“Banking Consolidation and Economic Growth in Nigeria: Dynamic Chain Transmission Evidence” was studied by Yahaya (2015). The study used Modified Wald (MWALD) Test of Granger Causality on variables of Consolidation. Banking Sector’s Assets (BSA); Ratio of Loans to Deposits (LD) Loans and Advances (LAD), Lending Rate (LR) and Gross Domestic Products (GDP) Data are from 1980 to 2010. The findings of the study reveal unidirectional causality from LD and LAD to GDP from BAS to LAD and from LR to LD. This indicates that banking consolidation causes economic through loans and Advances made by the banks, as expected. However, interest rate does not cause loans and advances.

Okoye, Adetiloye, Erin and Evbuomwan (2015) studied the impact of Banking Consolidation on the Performance of Banking Sector in Nigeria. They examined the Consolidation Programme by comparing the Pre and Post Consolidation Performance of the Sector. The performance assessment indicators analyzed in the study are Non – Performing Loans Ratio (asset quality), Return on Assets (earnings/profitability) Capital Adequacy Ratio (Long – term liquidity), Liquidity Ratio [short term liquidity), Bank Loans and Advances Ratio (credit delivery) and Bank Assets Ratio (bank size). Levene’s Independent Sample T-test was used to determine evidence of significant difference in banking sector performance between the pre and post consolidation periods. At 5 percent level of significance the study reveals evidence of significant differences in asset quality, capital adequacy ratio and loans and advances ratio. However, there is no evidence that return on assets, liquidity ratio and bank asset ratio differ significantly between the periods. The study therefore concludes that banking consolidation significantly impacted on banking.

Nwankwo (2013) examined the Impact of Pre and Post Bank Consolidation on the Growth of Nigeria Economy. The study did empirical analysis using T-test and its dependent variable is real gross domestic product while independent variables are GDP, M2, INTRATE and EXR. The study observed that post bank consolidation have significant positive effect on the growth of Nigerian economy; pre bank consolidation has positive and insignificant effect on economic growth. The implication of the study is therefore that merger and acquisition growth strategy added quality to economic growth and that pre bank consolidation is not significant to economic growth.

Similarly, Odeleye (2014) did a Dynamic Comparison on Pre Consolidation and Post Consolidation of Nigerian on Banking Sector for the period 1999 to 2011. He employed Chow Test; a Parameter Stability Test which reveals that there is parameter instability after the consolidation. System GMM (generalization methods of moments) estimation was further employed to ascertain the directional and magnitudinal (size) impact of consolidation on bank efficiency. It is inferred that Nigerian consolidation exercise did impact their efficiency positively with emphasis on earning per share as a proxy to consolidation while other independent variables (dividend per share, deposit, profit after tax, and loans & advance) did not impact efficiency on dependent variable (Total assets).

Ugwu, Ohakah and Kalu (2017) researched on “Evaluation of the Effect of Commercial Bank Consolidation on Economic Growth (Evidence from Nigeria, 2006 – 2015). Data collected was analyzed using the OLS multiple regression techniques with the aid of the SPSS statistical software. The study reveals that commercial bank deposit has a significant positive relationship with real GDP; while commercial bank asset has no significant relationship with real GDP.

Banking Industry Consolidation and Financial Performance of selected quoted banks in Nigeria was studied by Owolabi and Ogunlalu (2013). The study employed the use of secondary data collected from the audited financial reports of selected banks. Descriptive method of analysis was employed through the use of tables and charts; then the regression is employed to determine the relationship while t-test statistics is used to find out whether there is statistical difference between the mean of consolidation variables and financial

performance variable. The results reveals that it is not all the time that consolidation transforms into good financial performance of banks and it is not only capital that makes for good performance.

Aniebo, Oguanaobi and Akamobi (2013) studied Post – Consolidation Employment Growth in the Banking Sector: the Case of First Bank of Nigeria Plc. They used Simple Correlation Analysis between employment growth and earnings performance and between the ranks of employment growth and growth in gross expectations; the correlation was very low in both cases with explanatory power of only 1.53% in the case of Persons' Simple Linear Correlation Coefficient. This development was traced to banking sector's efficiency wages payment policy, which policy promotes unemployment.

Carlos and Guglieimo (2012) examined Banking Consolidation in Nigeria, using a Dynamic Panel for the period of 2000 to 2010. The study employed the Arellano and Bond (1991) Dynamic GMM Approach in estimation. The results of their analysis revealed that the Nigeria banking sector has benefited much from the consolidation policy and specifically that foreign ownership, mergers and acquisition and bank size decrease costs.

Alwell, Udeorah and Owede (2017) investigated Banking Sector Consolidation; possible Effects for Sectoral Credit Allocation and Economic Growth in Nigeria. The study used time series data on GDP, Banking Sector Credit distribution to the Agriculture, Manufacturing, Oil and Gas/Mining, Commercial (export financial) Sectors and Bank Size (number of deposit money bank branches) for the period of 1981 to 2015 are used. The study employed VECM in the analysis and the result revealed that only banking sector credit allocation to the manufacturing sector is positive and significant at 5% level. Banking credit to agriculture, oil and gas/mining, commercial and bank size were all insignificant at 5 percent level.

Ikeora, Igbojike and Andabai (2016), examined Banking Sector Reforms and the Performance of Nigerian Economy: A Vector Error Correction Model (VECM). The study adopted Ex-post Facto research design. Gross domestic product is used to proxy Nigeria economy while market capitalization, credit to private sector and foreign direct investment are used to proxy banking reform. The result of the study shows that there is causality between banking sector reform and performance of the Nigerian economy.

Omah, Duruwoju, Adeoye and Elyunde (2012) investigated the Post Bank Consolidation. A Debacle in the Survival of SMEs in Nigeria. "An Empirical Study". The data collection was based on survey of Neolithic literatures as well as primary sources. A sample of 50 was drawn from the supra – population of the study using random sampling techniques. The analysis was done using mean, standard deviations and coefficient of variation. The result of the analysis reveals that SMEs in Nigeria, with reference to Lagos state metropolis, do not have better access to finance through banks due to new reorganization in banks as a result of post bank consolidation. SMEs are financially handicapped and do not have good relationship with financial institution in Nigeria.

The Effects of Consolidation of the Banking Industry on the Nigeria Capital Market was studied by Donwa and Odis (2011). The study covered 2004 to 2008 using primary data collected through questionnaire and secondary data from the Nigerian stock exchange. The analysis was done using Chi-square Test and ANOVA, the result indicates that bank consolidation affected significantly the primary market as most of the banks had to go to the capital market to raise the required amount by issuing securities. The secondary market was negatively affected initially due to fall in bank stock prices. Also the consolidation of the Nigerian banking sector has positively impacted on the market capitalization and the all – share index of the Nigerian stock Exchange.

III. RESEARCH DESIGN

3.1 The study employs ex-post facto research design.

3.2 Nature, Sources and Scope of Data

Annual time series secondary data collected from CBN Statistical Bulletin are used for the analysis. The data used in the analysis cover the period 1986 to 2017. The period covered is informed by the availability of data of the main variables.

3.3 Description of Variables

3.3.1 Consolidation Reform (CR)

The consolidation reform is always targeting at guaranteeing an efficient and sound financial system. Though the policy thrust at inception was to grow the banks and position them to play pivoted roles in driving

development across the sectors of the economy (Samsi, 2012). The concept of consolidation is recapitalization which refers to the current trend of compelling all the commercial banks (money deposit banks) to increase their capital base from 2 billion naira to 25 billion naira by the central bank of Nigeria on or before 31st December 2005. The variables of consolidation policy are as follow:-

3.3.2 Prime Lending Rate (PLR)

This is an interest rate at which bank lends to their favoured customers, that is those with good credit rating.

3.3.3 Deposit Rate (DR)

The term deposit rate refers to the amount of money paid out as an interest by bank or financial institution on deposits. Bank pay deposit rate on saving and other investment accounts.

3.3.4 Total Loan and Advance (% of GDP)

Total loans and advances represent the total credit given by commercial bank (deposit money bank) to different sectors of the economy. The CBN categorized its sector into Four (4) and they are (1) production sector (a) agricultural forestry and fishery (b) manufacturing (c) mining and quarrying (d) real estate and construction. (2) General commerce (a) Bills discounted (d) domestic trade (c) Exports (d) imports (3) Service (a) public utility (b) transport and communication (c) credit to financial institutions. (4) others, (a) Government (b) personal and professional (c) miscellaneous

3.3.5 Total Deposit of Deposit Money Bank (% of GDP)

This represents the total value of demand, time and savings deposits at domestic deposit money bank as a share of GDP. Deposit Money Banks Comprises of Commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.

3.3.6 Minimum Paid up Capital of Commercial Bank (Deposit Money Bank)

For the purpose of regulation, capital base of the deposit money bank should be construed as the shareholders fund comprising paid up share capital, reserve, and accumulated losses. The component of shareholders fund are (a) paid up capital (that is ordinary share and irredeemable preference share) (b) capital reserve, (c) general reserve, (d) revaluation reserve (tangible assets) (e) retain earning. The recognition of reserves are only capital, general, and revaluation reserves contained in audited accounts not older than nine (9) month shall be recognized for determination of capital base.

3.4 Model Specification

Following from the earlier highlights of economic growth theories typical of slow growth model or neo-classical growth model and endogenous growth theories, it is apparent that all financial development policies targeting the enhancement of the national economy are important determinant of economic growth. The empirical model specification for estimating the causal relationship between financial development and agricultural sector output specifies capital, financial policies and other key determinants of economic growth as commonly suggested in the empirical review. Therefore, in deriving the empirical model for estimating the causality for various indicators of financial development used in this study, we posit that:

3.4.1 Consolidation Reform and Agricultural Sector Output Model

The model of Consolidation Reform and Agricultural Sector Output was used to address objective six of the study. The model of consolidation depends on the works of Adeusi and Oke (2013) that used interest rate margin, credit to private sector, savings and inflation rate as indicators of consolidation which was modeled in econometric form as $GDP = \beta_0 + \beta_1 IRM + \beta_2 CPS + \beta_3 SAV + \beta_4 INF + \mu$ and Yahaya (2015) who used banking sector assets, ratio of loans to deposit, loans and advances, lending rate, and GDP as proxies for consolidation and was presented in econometric form as $LnGDP = \beta_0 + \beta_1 LnLAD + \beta_2 LnLD + \beta_3 LnBAS + \mu$.

Hence, this study sought to examine the Causal Relationship between Consolidation Policy and Growth using these Consolidation Policy indicators; Prime Lending Rate, Deposit Rate, Total Loan and Advance to GDP Ratio, Total Deposit of Deposit Money Bank to GDP Ratio and the Minimum Paid up Capital of Commercial Banks/Deposit Money Bank as proxies to Consolidation Policy. Therefore this study has the functional model for the objective six as shown below.

$$AOG = F(PLR, DR, TLA, TBD, MCB) \dots \dots \dots (11)$$

The above function can be represented in mathematical equation form as

$$AOG = \beta_0 + \beta_1 PLR + \beta_2 DR + \beta_3 TLA + \beta_4 TBD + \beta_5 MCB + \varphi \dots \dots \dots (12)$$

Where β_0 = constant, β_{1-6} = coefficient of the regression and μ = error term, PLR = Prime Lending Rate, DR = Deposit Rate, TLA = Total Loan and Advance to GDP ratio, TBD = Total Deposit of Deposit Money Bank to GDP Ratio (TBD) and MPC = Minimum paid up Capital of Commercial Banks/Deposit Money Bank.

3.5 Estimation Techniques

This study used series of econometric techniques in testing the causal relationship between financial development and agricultural sector output. It employed time series data and this necessitated stationarity tests in order to avoid spurious regression. Sequentially, the Unit Root Test (Stationery) is followed by the Co-integration procedure to examine whether there is existence of long run relationship between variables of financial development. 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 variables. Causality Test was also employed to found out if there is evidence of causal relationship between the consolidation variables and agricultural sector output in Nigeria.

IV. PRESENTATION AND ANALYSES OF DATA

Table 2:- Nigeria Macroeconomic Variables on the Relationship between Consolidation Reform Policy and Agricultural Sector Output

	LnAOG	PLR	DR	TLA	TBD	LnMCB
1986	8.00197	10.50	9.50	0.10	0.260533096	13.3046849
1987	7.96959	17.50	14.00	0.12	0.326259377	13.3046849
1988	8.062927	16.50	14.50	0.12	0.357685311	15.4249485
1989	8.10951	26.80	16.40	0.13	0.375259995	16.8112428
1990	8.150386	25.50	18.80	0.14	0.429926329	16.8112428
1991	8.186141	20.01	14.29	0.16	0.612009119	17.7275336
1992	8.209252	29.80	16.10	0.21	0.81140905	17.7275336
1993	8.227821	18.32	16.66	0.24	1.135086695	17.7275336
1994	8.253143	21.00	13.50	0.46	1.476541255	17.7275336
1995	8.288379	20.18	12.61	0.70	1.892085557	17.7275336
1996	8.326891	19.74	11.69	0.81	2.166407184	17.7275336
1997	8.36769	13.54	4.80	1.09	2.682075248	20.0301187
1998	8.406316	18.29	5.49	1.22	3.110214211	20.0301187
1999	8.456093	21.32	5.33	1.56	4.766272313	20.0301187
2000	8.484871	17.98	5.29	2.03	6.622684206	20.0301187
2001	8.52209	18.29	5.49	3.24	8.892831753	20.7232658
2002	8.964067	24.85	4.15	3.22	9.554968184	21.416413
2003	9.031792	20.71	4.11	3.73	9.611961895	21.416413
2004	9.092522	19.18	4.19	4.27	10.71742191	21.416413
2005	9.160834	17.95	3.83	5.17	12.04831521	23.9421417
2006	9.232344	17.26	3.14	6.32	17.93426557	23.9421417
2007	9.301868	16.94	3.55	11.03	25.5850045	23.9421417
2008	9.362664	15.14	2.84	16.63	34.59841283	23.9421417
2009	9.419817	18.99	2.68	18.77	35.14695358	23.9421417
2010	9.476459	17.59	2.21	16.17	31.73572871	23.9421417
2011	9.5052	16.02	1.41	15.83	33.72674082	23.9421417
2012	9.57009	16.79	1.70	16.31	35.52167194	23.9421417
2013	9.599034	16.72	2.17	17.03	38.43987878	23.9421417
2014	9.640849	16.55	3.38	18.86	40.92384204	23.9421417
2015	9.677353	16.93	3.50	18.85	40.73601724	23.9421417
2016	9.7176	17.08	4.18	23.34	46.63951372	23.9421417
2017	9.7238	17.13	4.21	24.39	49.39176232	23.9421417

Source: CBN Statistical Bulletin of various years

Legend; DR = Deposit Rate, TLA = Total Loan and Advances to GDP Ratio, TBD = Total Deposit of Deposit Money Bank to GDP, MPC = Minimum Paid up Capital of Commercial Bank/Deposit Money Bank, LnAOG = Natural log. of the Agricultural Sector Output in Nigeria. The raw data from where this table is derived are at the appendix.

TABLE 3:- Results of Stationarity Test of the Financial Consolidation Variables and Agricultural Sector Output in Nigeria

S/N	Variables	At level	At 1 st difference	At 2 nd difference	Order of ()	Results		
						At level	At 1 st different	At 2 nd difference
1	LnAOG	-	-5.201722	-	1(1)	Not significant	Significant	Significant
2	PLR	-	-5.785241	-	1(1)	Not significant	Significant	Significant
3	DR	-	-6.549942	-	1(1)	Not significant	Significant	Significant
4	TLA	-	-3.149146	-	1(1)	Not significant	Significant	Significant
5	MCB	-	-5.355197	-	1(1)	Not significant	Significant	Significant
6	TBD	-	-4.739163	-	1(1)	Not significant	Significant	Significant
	At 5% c.v	-	-2.967767	-2.971853				

Source: Authors computation using E-view 10 computer package

The above results of the Unit Root analysis revealed that PLR, TBD, AOG, DR, TLA and MCB are stationary at their first differencing. This result therefore indicates the necessity to run Co-integration analysis in order to establish the long run relationship of the Financial Consolidation variables and Agricultural Sector Output.

Table 4:- Co-integration Test of the Financial Consolidation Policy Variables and Agricultural Sector Output

Null Hypothesis: RESID01 has a unit root		
Exogenous: Constant, Linear Trend		
Lag Length: 2 (Automatic - based on SIC, maxlag=7)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.669904	0.0416
Test critical values:		
	1% level	-4.323979
	5% level	-3.580623
	10% level	-3.225334
*MacKinnon (1996) one-sided p-values.		

Source: Authors computation using E-view 10 computer package

The result of the above table shows that the P-value of the ADF test is 0.0416 which is less than 0.05 critical value and the value of Augment Dickey –Fuller (ADF) at $-3.6699014 > -3.580623$ at 5% significant level shows the existence of co-integration at long-run. Therefore, the null hypothesis that states no existence of long run equilibrium relationship between the variables is rejected.

Table 5:- Error Correction Model of the Financial Consolidation Policy Variables and Agricultural Sector Output

Dependent Variable: D(LNAOG)				
Method: Least Squares				
Date: 05/12/18 Time: 04:58				
Sample (adjusted): 1986 2017				
Included observations: 29 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.063793	0.093983	-0.678770	0.5044
PLR	0.005680	0.004638	1.224685	0.2336
D(DR)	-0.005719	0.009074	-0.630220	0.5350
D(TLA)	0.004457	0.009855	0.452204	0.6555
D(LNMCB)	0.024520	0.021700	1.129969	0.2707
D(D(TBD))	-9.43E-05	0.006230	-0.015143	0.9881
ECM(-1)	-0.232678	0.159756	-1.456456	0.1594
R-squared	0.200741	Mean dependent var		0.060276
Adjusted R-squared	0.172391	S.D. dependent var		0.075484
S.E. of regression	0.076132	Akaike info criterion		-2.106197

Sum squared resid	0.127513	Schwarz criterion	-1.776160
Log likelihood	37.53986	Hannan-Quinn criter.	-2.002834
F-statistic	0.920914	Durbin-Watson stat	1.702744
Prob(F-statistic)	0.498925		

Source: Authors computation using E-view 10 computer package

Restructuring the econometric regression equation to accommodate the Error Correction Model coefficient of the independent variables, we have:

$$\text{LnAOG} = -0.063793 + 0.005680\text{PLR} - 0.005719\text{DR} + 0.004457\text{TLA} + 0.024520\text{MCB} - 9.43\text{E-}05\text{TBD}.$$

The above equation indicates that the Financial Consolidation variables DR and TBD have adverse contribution on the Agricultural Sector Output in Nigeria, while PLR, TLA and MCB have positive contribution to the Agricultural Sector Output in Nigeria. The P-value of the ECM shows there is no existences of short run relationship while the coefficient of ECM that is -0.232678 indicates that the speed at which the variables will converge or adjust at long run or the speed in which the variables will attain a long run relationship is 23%. The value of adjusted R-squared 0.172391 of the estimated model shows the co-efficient of multiple determinants. It indicates that 12% of the changes that occur in the dependent variables (AOG) are influenced by the changes in the independent variables; hence it is a very poor financial policy for boosting of agricultural sector output in Nigeria. The results of the P-values are showing that all the independent variables are not having statistical significant relationship with the dependent variables (AOG). The Probability (F-statistics) value of 0.498925 shows that all the variables of financial consolidation put together have no significant relationship with agricultural sector output in Nigeria and finally, the Durbin-Watson value 1.702744 which is between 1.5 and 2.5 shows the absence of auto correlation which shows the absent of positive first order serial correlation.

4.1 Model Estimation

The result of Pairwise Granger Causality Test was used to address the objective six (6) of the study. The model result was used to answer question six and hypothesis six.

Table 6:- Pairwise Granger Causality Test for hypothesis six (6); Consolidation Reform Policy Variables do not have any Relationship with the Agriculture Sector Output in Nigeria.

Pairwise Granger Causality Tests			
Date: 05/12/18 Time: 11:49			
Sample: 1986 2017			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
PLR does not Granger Cause LNAOG	29	0.54377	0.5875
LNAOG does not Granger Cause PLR		4.03194	0.0309
DR does not Granger Cause LNAOG	29	2.30036	0.1219
LNAOG does not Granger Cause DR		0.03128	0.9692
LNMCB does not Granger Cause LNAOG	29	0.72115	0.4964
LNAOG does not Granger Cause LNMCB		1.70711	0.2027
TBD does not Granger Cause LNAOG	29	0.34309	0.7130
LNAOG does not Granger Cause TBD		4.85199	0.0170
TLA does not Granger Cause LNAOG	29	0.40753	0.6698
LNAOG does not Granger Cause TLA		3.83076	0.0360

Source: Authors computation using E-view 10 computer package

The Causality Test on the table 25 is used to address objective six of the study. The aim is to determine the relationship between the Financial Consolidation Policy variables and Agricultural Sector Output in Nigeria. The proxies used for Financial Consolidation Policy are; Prime Lending Rate (PLR), Deposit Money Bank (MCB), Deposit Money Bank Deposit as a Percentage of Gross Domestic Product (TBD), Claims on Private Sector as a Percentage to Gross Domestic Product (TLA). Hence the objective six is presented in table 26 based on the following hypothesis.

Demand-Following hypothesis

H0: P = 0, i.e, AOG does not granger cause PLR, DR, MCB, TBD, TLA

H1: P = 1, i.e, AOG does granger cause PLR, DR, MCB, TBD, TLA

Supply-Leading hypothesis

H0: $P = 0$, i.e, PLR, DR, MCB, TBD, TLA do not granger cause AOG

H1: $P = 1$, i.e, PLR, DR, MCB, TBD TLA do granger cause AOG

To accept the alternative hypothesis the P-value needed to be within the critical value of 0.05 significant level.

The result of the equation one and two of the Pairwise Granger Causality Test of this objective six is the same with the objective one. Thus they have the same dependent and independent variables.

The results of the equation three show no evidence of causal relationship between MCB and AOG. This indicates that Minimum Paid up Capital of Deposit Money Banks (MCB) and Agricultural Sector Output are not depending on each other.

The F-statistics and P-value of the equation four shows that there is existence of unidirectional causality from AOG to TBD. Hence, there is existence of demand following hypothesis. This implies that Agricultural Sector Output (AOG) leads Deposit Money Bank Total Deposit (TBD).

The result of the equation five also reveals the existence of unidirectional causality from AOG to TLA. This is also proving demand following hypothesis. This indicates that Agricultural Sector Output (AOG) predicts Total Loans and Advances to Private Sector (TLA).

The results of the Granger Causality Test are in accordance with the results of ECM of Ordinary Least Square which revealed that PLR, DR, TLA, MCB and TBD with P-values of 0.2336, 0.5350, 0.6555, 0.2707 and 0.9881 respectively do not have any significant effect on agricultural output in Nigeria. Thus, the Prob. (F-statistic) value of 0.498925 shows that all the variables of financial intermediation put together have no significant relationship with the dependent variable and this gives a strong support to the model estimation of the Causality Test of the objective six.

4.2 Discussion of Results

The results of this study were discussed in line with the results of ECM and Pairwise Granger Causality Analysis for each of the financial consolidation indicators. This discussion was done to establish the nature of relationship existing between Financial consolidation policies and Agricultural Sector Output in Nigeria based on the stated objectives of the study.

The result of Unit Root Test revealed that Prime Lending Rate (PLR), TBD, AOG, DR, TLA and MCB are stationary in their first differencing. The Co-integration analysis result indicated existence of long-run relationship between the Consolidation Policy Variables and Agricultural Sector Output.

The Error Correction Model (ECM) analysis result showed that Financial Consolidation Variables DR and TBD have adverse contributions to Agricultural Sector Output in Nigeria, while PLR, TLA, and MCB have positive contributions to the agricultural sector output in Nigeria. The value of adequate R-square 0.172391 of the estimated model showed the co-efficient of multiple determinants. It indicates that 17% of the changes that occur in the dependent variables (AOG) are influenced by the changes in the independent variables. Hence it is a very poor financial policy for boosting of Agricultural Sector Output in Nigeria, the results of the P-values showed that the independent variables are not statistically significant at 5% critical value.

The results of Granger Causality Test revealed neutral hypothesis between DR, MCB, and AOG, thus, there is no evidence of causal relationship found. This indicates that the independent variables and the dependent variables are independent of each other.

Hence, the causality between Financial Consolidation Policy variables and Agricultural Sector Output in Nigeria between 1986 and 2017 provided more support for the demand following hypothesis. Thus, there is existence of evidence of unidirectional causal relationship running from AOG to PLR, TBD and TLA. This indicates that Agricultural Sector Output granger causes Financial Development.

This result is not in accordance with the apriori expectation, though, in agreement with the results of the Error Correction Model (ECM) analysis which indicated that PLR, DR, TLA, MCB and TBD with P-value of 0.2336, 0.5350, 0.6555, 0.2707 and 0.9881 respectively do not have any statistical significant effect on the Agricultural Sector Output in Nigeria. The ECM adjusted R-squared of 0.172391 implies that it is on 17% of the changes of dependent variables (AOG) is being influenced by the independent variables, hence, this is not a good financial policy to boost Agricultural Sector Output in Nigeria. The Prob. (F-statistics) value of 0.498925 showed that all the variables of Financial Consolidation put together have no statistical significant effect on Agricultural Sector Output in Nigeria. The model estimation of the Causality Test gives strong support to the

conclusion of Lucas (1988), Odhiambo (2008), Omotor (2007), Kar and Pentecost (2000), Muhammed and Muhammed (2010) and Iwedi and Igbani (2015), who posit that economic growth predicts financial development. In the work of Robinson (1952), in opposing the supply leading hypothesis arguments, he concluded that economic development promotes Financial System and services. For instance, in a developing economy, the private sector may demand new financial instruments and an improved access to external finance. The financial activities then will simply be enhanced in step with general economic growth. Also, in the developing nations, the financial system has not been developed to a reasonable extent, while the agricultural sector output in Nigeria in particular is naturally endowed with resources. These resources, if tapped and developed will enhance the agricultural sector that will lead to development of Financial System in Nigeria.

V. SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Findings

The study has investigated the Relationship between Financial Consolidation and Agricultural Sector Output in Nigeria. The results from Error Correction Model and Pairwise Granger Causality Test can be summarized according to the objectives of the study as follows:-

- The Co-integration test result indicated that Financial Consolidation Policy and Agricultural Sector Output have long-run significant effect on one another.
- The adjusted R-squared co-efficient of determination indicated that Financial Consolidation Policy Variables explains 17% of changes in Agricultural Sector Output in Nigeria and hence is a veritable tool to boosting AOG.
- The P-value of ECM revealed that DR, PLR, TLA, MCB and TBD are not having statistical significant effect in explaining the changes in AOG.
- Prob. (F-statistics) co-efficient of 0.498925 showed that all the indicators of the explanatory variables put together have no significant effect on the dependent variable.
- The Granger Causality Test indicated that there is no evidence to support the existence of causal relationship between AOG and DR, MCB in the study, thus, there is existence of independent hypothesis.
- The result of Granger Causality also showed more support for the existence of unidirectional causal relationship running from AOG to Financial consolidation, hence, AOG, granger PLR, TBD. And TLA. This is indicating evidence of demand following hypothesis (AOG leads financial consolidation).

VI. CONCLUSION

The study asserts that the consolidation policy indicators have both positive and negative contributions on the dependent variable while all the indicators do not have significant effect in influencing the agricultural sector output in Nigeria. The Pairwise Granger Causality test indicated more evidence of the existence of demand following hypothesis, thus, the study posits that Agricultural Sector Output (AOG) leads Financial Consolidation in Nigeria.

VII. RECOMMENDATIONS

The findings of this study informed the following recommendations:

The policy makers should initiate policies that will promote the development of Agricultural Sector Output, establishment of functional and practical agricultural institutions in Nigeria, establishment of functional agro-firms and encouragement of private owned cottage and micro firms that will be employing the skilled labour and also make use of the agricultural sector output as their raw materials. Encouragement of farmers through; soft credit facility, tax free at their early stage of establishment, reduce the total cost incurred by cottage farmers and firms by reducing the number of levies on them, like; lending rate, power bills, bill board levy, minor industry levy, state development levy, sanitation levy, advertisement levy, business premises etc.. When levies are eventually paid, the government should also ensure that the services paid for are rendered. Government should also ensure the provision of social amenities to farmers like; road, power supply, security, water. Policy makers should ensure monitoring of the policies and schemes meant for the agricultural sector to avoid diversion or politicizing by the leaders and officials.

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