THE ROLE OF FINANCIAL INTERMEDIATION ON AGRICULTURAL OUTPUT IN NIGERIA (1980 – 2016)

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ABSTRACT

This research intends to examine the impact of financial intermediation on agricultural productivity in Nigeria, the econometric analysis that used the ordinary least square technique was adopted in the analysis of our chosen variables. The dependent variable was agricultural output (AQ) while deposit money bank credit to the private sector (DMBC), deposit money bank lending rate (DMBLR), agricultural credit guarantee scheme fund (ACGSF) and government expenditure to the agricultural sector (GEXa) were all used as explanatory variables. The unit root test was conducted using the Durbin Watson and Augmented Dickey Fuller techniques. The following findings were made, that all chosen explanatory variable were positively related to agricultural output expect data indicates that lending rate over the years have been flat. Following this result. Deposit money banks should increase the volume of credit facilities granted to the agricultural sector to increase and sustain food production which will also create jobs for the teeming unemployed population in Nigeria, deposit money banks credit facilities should be subsidized or reduced to a single digit lending rate for agricultural businesses and should have a longer moratorium to ensure effective performance of both agricultural output and the credit facilities amongst others.

Keywords: Agricultural Variable, Credit, Dickey Fuller techniques, Lending

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INTRODUCTION

The significance of the agricultural sector to human existence generally cannot be over emphasized in an emerging economy such as Nigeria. This is in consonance with the fact that Nigeria as a country, is highly endowed with abundant natural resources including land and labor with its large percentage of the populace been rural based depends to a large extent on agriculture for a living (Uzomba, et al., 2014; Nzotta, 2009). This underscores the contribution of agriculture to overall development of economy especially in emerging economies which is apparent in the provision of increased food supplies, provision of gainful employment, provision of capital and capital formation, increasing foreign exchange and increase in the welfare of the citizens through wealth creation among others (Tasie and Offor, 2013). It is pertinent to state however that, the Nigeria agricultural sector has been seemingly if not totally neglected with the discovery of oil. This is evident in the sharp decline in the contribution of agricultural sector to the Gross Domestic Product (GDP) from 64% in 1960 to 35% in 1988 and presently, the agricultural sector in Nigeria contributes less than 30% to GDP, with crop production accounting for an estimated 85% of this total, livestock 10% with forestry and fisheries contributing the remaining 5% (Iganiga, 2011; Awotide and Akere, 2010).

The sources for funding the agricultural sector have been micro and macro sources of finance. The micro source relates the use of the commercial bank financing as capital for agricultural activities while agricultural funding through capital mobilization and allocation by government through such agencies as rural banking development programmers, Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB) and the Central Bank of Nigeria (CBN) (Olowa and Olowa 2011).

Statistics has shown that the Nigeria agricultural sector received increased credit from the commercial banks up to about 7 million-naira in 1970 representing 1.99% of the 37.4 million-naira credits in 1975 representing 2.6% of the total credit by the commercial banks. In 1980, the amount of credit offered by the commercial banks to the agricultural sector rose to 462.2 million naira, representing 7.28% of the entire credit and in 1985, total commercial bank credit to agriculture rose further to 1310.2 million naira and constituted 10.77% of the overall credit by the commercial banks. By 1990, total credit to agriculture rose to 4221.4 million naira and represented 16.24% of the overall credit in the economy and rose further to 25,278.7 million naira in 1995, which also accounted for about 17.49% of the entire credit budgeted to the economy (CBN, 2005).

By 2000, total credit to agriculture was 41,028.9 million naira in 2005, constituting 2.46% of the total and in 2010, total commercial banks credit to agriculture has risen to 128,406.0 million naira, thereby accounting for only 1.67% of the total commercial banks credit to the economy (CBN, 2011). By 2012, total credit to agricultural sector has risen to 316,364 million naira, representing 3.9% of commercial bank total credit. Agricultural credit rose again from 343,696.80 million naira in 2013 to 478,911.78 million naira in 2014, representing 3.7% of commercial banks total credit Central Bank of Nigeria (CBN, 2005). Credit to the Agriculture
sector by commercial banks rose to 1,870.6 billion naira in 2015. Within the period, however, loans guaranteed under the Agriculture Credit Guarantee Scheme Fund (ACGSF) rose by a paltry 16% from 9.37 billion naira in 2005 to 10.86 billion naira in 2015.

Further analysis of the report showed that as of the end of the fourth quarter of 2016, the total credit received by the agriculture sector was 3.26% of the entire banking sector credit to the economy.

The preceding analysis, it can be observed that though total credit to agriculture has been increasing in absolute terms but when measured in term of percentage share in total credit to the economy, it is found that the credit to agriculture constitutes an insignificant proportion of the total credit.

In view of the above, (Iganiga, 2011) posit that the role of deposit money banks’ in financial intermediation which facilitates the linkage between mobilization and use of resources should be effectively and efficiently utilized as this will lead to an enhanced agricultural output. Thus, there should be resolute efforts to harness the enormous resource from surplus sector for increased agricultural output.

Having recognized the potential of the agricultural sector which is aptly described in theoretical literature as a sector with enormous prospect that could solve the problem of unemployment, poverty and poor revenue generation for the various tiers of government, intensive efforts have so far been made by various stakeholders including the government, the private sector and individuals to pull resources to the agricultural sector for a more robust productivity (Ogbanje, et al., 2012). This has been a top priority for the Federal Government of Nigeria; thus, commercial banks have been directed to earmark a major part of their funding to finance this sector.

Despite the sustained increase in the provision of loans and grants by specialized banks, commercial banks and government agencies to small, medium and large-scale farmers for enhancing their income and also maximizing output, such efforts have, however, seems not to have transmitted into the real growth in agriculture output. This is evident in the fact that since the late 1970s, the growth of the agricultural sector has been low. In the wake of these realities, the critical analysis of the role of financial intermediation on agricultural output in Nigeria becomes imperative given the fact that its impact should have implication for overall macro-economic variables of poverty reduction, job and wealth creation.

**METHODOLOGY**
Research is the scientific ways of producing answers to questions through methodical process with the intension of making contribution to existing knowledge by the discovering of nontrivial facts and insight. On the other hand, research methodology is a way of solving the research questions systematically. In it we state the various steps that are basically adopted by the researcher in studying his research problem along with the logic behind them.
This study adopted a linear specification, it set to establish evidence of a correlation between financial intermediation and agricultural output in Nigeria. This research would use regression model (OLS) for the analysis of data collected. Furthermore, the Augmented Dicky-Fuller (ADF) unit root test would be used to examine the stationarity of the data since they are time series in nature.

Base on Harrod-Domar Growth Model (HDGM) which states that; investment is pivotal in the process of economic growth.

\[
AQ = f \left( DMBC, DMBLR, GEXa, ACGSF \right) \]

Stochastically the model is expressed as thus

\[
AQ = \beta_0 + \beta_1 DMBC + \beta_2 DMBLR + \beta_3 GEXa + \beta_4 ACGSF + \mu
\]

Where

- DMBC = Deposit Money Banks Credit to the Private Sector
- DMBLR = Deposit Money Banks’ Lending Rate
- GEXa = Government Expenditure to Agricultural Sector
- ACGSF = Agricultural Credit Guarantee Scheme Fun
- \( \mu \) = error term
- \( \beta_0 \) = Intercept
- \( \beta_1, \beta_2, \beta_3, \beta_4 \) = Estimated coefficient

The model was estimated using ordinary least square technique (OLS). It was subjected to a dynamic estimation using the lag structure of the variables.

Secondary data was used for this research, the secondary data source that was used was information that has been in existence before this study. The data was gathered from magazines, journals, newspaper, government publications, CBN statistical bulletin and the National Bureau of Statistics publications.

**PRESENTATION OF DATA AND ANALYSIS**

Various empirical test results on the relationship between money supply and economic growth in Nigeria are presented and discussed. Empirical test results are the unit root test result, which Augmented Dickey-Fuller was used to check the stationary level of individual variables in the estimated model and ordinary least square (OLS).
Table 1. Unit Root Test

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF level Statistic</th>
<th>1% critical level</th>
<th>5% critical level</th>
<th>10% critical level</th>
<th>Order of integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ</td>
<td>-3.390876</td>
<td>-3.632900</td>
<td>-2.948404</td>
<td>-2.612874</td>
<td>I (I)</td>
</tr>
<tr>
<td>DMBC</td>
<td>3.208389</td>
<td>-3.699871</td>
<td>-2.976263</td>
<td>-2.627420</td>
<td>I (0)</td>
</tr>
<tr>
<td>DMBLR</td>
<td>-2.730568</td>
<td>-3.626784</td>
<td>-2.945842</td>
<td>-2.611531</td>
<td>I (0)</td>
</tr>
<tr>
<td>GEXa</td>
<td>-13.17504</td>
<td>-3.920350</td>
<td>-3.065585</td>
<td>-2.673459</td>
<td>I (0)</td>
</tr>
<tr>
<td>ACGSF</td>
<td>0.746654</td>
<td>-3.639407</td>
<td>-2.951125</td>
<td>-2.614300</td>
<td>I (I)</td>
</tr>
</tbody>
</table>

Table 1, shows that of all the five variables in the estimated model, most of them are integrated at level expect agricultural output (AQ) and agricultural loan (ACGSF) which are integrated at order one. Gross fixed capital formation (GFCF) is stationary at I (0) using Augmented Dickey-Fuller (ADF), while lending rate (DMBLR) is integrated at 10%.

Table 2. Result of Estimated model

<table>
<thead>
<tr>
<th>Dependent variable: Log (AQ)</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3.423575</td>
<td>0.202039</td>
<td>16.94510</td>
<td>0.0000</td>
</tr>
<tr>
<td>Log (DMBC)</td>
<td>0.0081756</td>
<td>0.039058</td>
<td>2.093186</td>
<td>0.0449</td>
</tr>
<tr>
<td>DMBLR</td>
<td>-0.017614</td>
<td>0.003327</td>
<td>-5.294296</td>
<td>0.0000</td>
</tr>
<tr>
<td>Log (GEXa)</td>
<td>0.048202</td>
<td>0.022903</td>
<td>2.104603</td>
<td>0.0438</td>
</tr>
<tr>
<td>Log (ACGSF)</td>
<td>0.015591</td>
<td>0.025944</td>
<td>0.600298</td>
<td>0.5524</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.957195</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistics</td>
<td>167.7133</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.957195</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson Statistics</td>
<td>1227007</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2, present the result of the estimated model in their logarithm form. The result indicates that the constant term is positively related to the dependent variable and is statistically significant in the model. The log of domestic bank credit to private sector (DMBC) has a positive sign, showing a positive impact on the dependent variable and is significant in the estimated model. In the case of Domestic Money Bank Lending Rate (DMBLR), this variable has a negative impact on the dependent variable with high statistical significance in the estimated model. However, Agricultural loan (ACGSF) in the estimated model is not statistically significant. This variable shows a positive impact on agricultural output in the estimated model. The coefficient of multiple determinations (adjusted R-squared) shows a strong explanatory power of the model. The F-statistics indicates that the entire model is
statistically significant, given its high value of 167.7 which is definitely higher than the tabulated F-ratio at different levels of significance.

From Table 2, the model estimated to test the relationship between Deposit Money Bank Credit to private sector has a positive relationship with Agricultural productivity in Nigeria. This implies that bank credit to private sector increases agricultural productivity by 0.081756. This result conforms to the a priori expectation that an increase in bank credit to the private sector has a positive relationship with productivity. For lending rate, it impedes productivity by -0.017614 but also statistically not significant. This result shows a negative impact of lending rate to agricultural productivity. This implies that a unit increase in the cost of borrowing would impede agricultural productivity by 0.017614. This indicates that when there is an increase in interest rate, a smaller number of people borrow money from the financial institutions. This could be attributed to lack of commensurate development in the sector. Also, government expenditure to agricultural sector has a positive effect on productivity in Nigeria, showing that when there is growth in government expenditure to the sector there will be growth in productivity. Also, agricultural credit scheme guarantee fund shows a positive relationship with agricultural productivity in Nigeria. Again, this result is in support of our established economics theories as credit scheme is expected to have a positive relationship with productivity. Credit scheme that is targeted toward investment would certainly boost productivity and create liquidity via employment in an economy.

The coefficient of multiple determination (adjusted R-squared) show a strong explanatory power of the model. The F-statistics indicates that the entire model is statistically significant, given its high value of 167.7 which is definitely higher than the tabulated F-ratio at different levels of significance.
CONCLUSION
Based on our findings, we conclude that agricultural credits are believed to be a very important ingredient in farming activities as adequate provision of funds to farmers makes all activities in the farm possible and leads to increase in output. The study was basically to ascertain the role of financial intermediation on output of agricultural sector in Nigeria. From the results obtained, there exist a significant relationship between agricultural credit guarantee scheme fund and agricultural production in Nigeria. The result also showed that commercial banks credit to agricultural sector relate significantly and is positive with the agricultural production in Nigeria. Further investigation revealed that, government expenditure on agriculture has a significant and positive effect on agricultural production in Nigeria. Also, our result shows a negative effect exist between interest rate and agricultural production in Nigeria.

REFERENCE


