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HOW DOES BANK CREDIT AFFECT AGRICULTURAL EXPORT IN NIGERIA?

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ABSTRACT
The study focused on bank credit as one of the oft cited determinants of agricultural export. Nigeria's post oil experience in agricultural export has remained lackluster. In an auto regressive distributed lag specification, incorporating variables often missed out in most other studies (relative price, world GDP growth, etc), bank credit proved to be significantly and positively related to agricultural export. It was also economically non-trivial. The conclusion was that Nigeria's poor performance in agricultural export was due partly to the inadequacy of credit. To remedy the situation, it was recommended that the tenure of funds available for agricultural activity should be differently structured, and its quantum scaled up. The opportunity to do so can arise from the creation of an agriculture trust fund.

Key Words: agricultural export, Bank credit, Financial sector credit

INTRODUCTION
In recognition of the natural role of agriculture, and the prospects for the welfare of their home country, the Colonial Administration established marketing boards for agricultural commodities in Nigeria. In many respects, that move helped to orient the domestic economy towards modern agricultural export practise; for example, in the area of product standardisation and also in credit provision to both farmers and licensed buyers. The boards were thus instrumental to the high incomes from agricultural exports that the regions were known for, and which drove growth and development. As is well known, however, the era ended with the displacement of agricultural sector as the leading income earner by the oil sector, and the eventual neglect of agriculture, which led to serious economic challenges.

Although the agricultural sector remains the highest employer of labour in Nigeria and a major contributor to gross domestic product (GDP), efforts by governments at all levels to restore its lost export-glory have fallen short of that hope. In particular, the much celebrated and truly successful consolidation of the financial sector, as well as the on-going and much welcomed reformation of the financial landscape, which raised much hope of a 'big push' via capital provision, have yet to translate into improved agricultural performance, especially agricultural export; not even with the direct participation of Central Bank of Nigeria and their Anchor borrower programme. The expectation was for more of substantial capital investment, large scale operation, mechanisation, development of agric infrastructure including post harvest needs, and export targeted, plantation-type production. These expectations, if realised, were likely to meaningfully impact agricultural export. They also happen to be part of the core functions of the financial system. The financial system thus remained the only feasible channel for accessing sizeable and timely funds, more so as the

magnitude of funds entailed in the great expectation could only be midwifed by them. This reality establishes the need to constantly re-examine what effect financial sector credit achieves in the effort to grow agricultural exports, hence this paper. The rest of the paper is structured as follows: section 2 reviews extant literature, section 3 outlines the research method, and evaluates the result, while section 4 concludes with policy implications.

2. LITERATURE REVIEW

The problem of the sector has been mostly attributed to lack of fund from both the government and the financial sector. Between 2010 and 2016, the federal government expenditure increased from 4.2 trillion Naira to 5.2 trillion Naira (24%) as agricultural expenditure decreased from 106 billion Naira in 2010 to 77 billion Naira (-27%) (Omolola and Nwafor, 2018). The government, in an effort to make adequate fund available to the agricultural sector, launched the Agricultural Transformation Action Plan (ATAP, 2011-2015), with the major objectives of diversifying the economy and generate foreign exchange earnings (CBN, 2011). The government also launched the Nigerian Incentive-based Risk Sharing System for Agricultural Lending (NIRSAL). The NIRSAL was to stimulate innovations in agricultural lending and encourage bank lending to the agricultural sector (CBN, 2011). The federal government had previously established the Agricultural Credit Guarantee Scheme (ACGS), the Nigerian Agricultural Bank, Agricultural Credit Support Scheme, the Nigerian Agricultural Insurance Corporation, etc, aimed at making adequate fund available to the agricultural sector. The federal government had equally adopted sectoral allocation of credit, concessionary interest rate, rural banking, etc.

According to Yakubu and Affoi (2014) Bank Credit is the borrowing capacity provided to an individual, government, or organization by the banking system in the form of loans. Businesses, micro, small, medium and large firms depend on credits for their survival and growth. The banking sub sector improved their agricultural loans from 1.7 percent in 2010 to 3.3 percent in 2016 (Omolola and Nwafor, 2018). Agricultural credit is necessary to enable the farmers take advantage of new technologies in the forms of machinery, pay for items as improved varieties of seeds and live stocks, fertilizers, pesticides, labour and other running costs (Ogbonna and Osondu, 2015). Inadequate finance prevents farmers from investing in agricultural technologies that help them to achieve higher agricultural productivity; it limits their participation in markets (AGRA, 2013).

Marafa (2021) observed that in the long run, bank private sector credit to agriculture and agricultural credit guarantee scheme fund are the only variables that influence agriculture production. Bakari, Khalfallah and Zidi (2020) found that bank loans to the agricultural sector have a positive effect on agricultural exports in the long run. Oyelade (2019) in his study of bank credit to the agricultural output in Nigeria from 1980 to 2015 found that commercial banks' credit to agriculture are statistically significant in determining agricultural output in Nigeria within the period considered. Omekwe, Bosco, and Obayori (2018) examined the determinants of agricultural output in Nigeria from 1985 to 2016. The findings revealed that credit has a significant and positive impact on agricultural output in Nigeria. However, Olorunsola et al (2017) found that in the short-run, credit unevenness (positive and negative) has no significant impact on agricultural output growth. Udeorah and Vincent (2018) investigated the relative effect of government and deposit money banks financing on agriculture sector performance from 1981 to 2015 in Nigeria. The result reveals that bank financing proved insignificant in predicting output from the aggregate agricultural sector. Oluwafemi and Ode-Omenka (2018) studied the impact of agricultural credit on agricultural output in Nigeria between 1978 and 2018 and concluded that deposit money bank credit to the agriculture sector in Nigeria had a positive and significant impact on agriculture sector output. Mathew and Mordecai (2016) investigated the impact of public agricultural expenditure on agricultural output in Nigeria from 1981-2014 with Johansen co-integration test. The result of the analysis revealed that commercial bank loans had positive and significant impact on agricultural output in Nigeria. Udoka, Mbat, and Duke (2016) examined the effect of commercial bank credit on agricultural output in Nigeria from 1970 – 2014 using the ordinary least squares method. The result signified that an increase in commercial bank credit to the agricultural sector increased agricultural production.

In summary, in the search for new insights which might shed light on why, notwithstanding the near consensus of findings and opinion, such lackluster performance in agricultural export seems to persist, this study incorporated relative price and world GDP growth in an auto regressive distributed lag framework, which was not done in earlier studies.

3. RESEARCH METHOD, ANALYSIS AND RESULTS

To estimate the effect on agricultural export produced by financial sector credit to agriculture, a linear model as is commonly used in the literature was adopted. Bank credit to agriculture was selected as a proxy for financial sector credit on account of the dominance of the financial sector in Nigeria by banks; also on account of data availability. Included explanatory variables are world GDP growth, trade openness, relative price, agric output, exchange rate and government expenditure. The model is as follows:

AEXP = F (AO, WGDPGR, EXR, GEXP, TOP, BC, RP)....(1)

where:

AEXP = value of agricultural export
AO = agricultural output
WGDPGR = world GDP growth rate
EXR = exchange rate of exporting country
GEXP = government expenditure on the agriculture sector
TOP = trade openness
BC = bank credit to the agricultural sector
RP = relative price of agricultural export

In a functional form, and taking the natural logarithm of indicated variables, the model can be stated as:

$$lnAEXP = \delta_0 + \delta_1 lnAO + \delta_2 EXR + \delta_3 WGDPGR + \delta_4 lnGEXP + \delta_5 lnTOP + \delta_6 lnBC + \delta_7 RP + \mu \ldots (2)$$

Where δ_s are the parameters and μ the stochastic error term

Analysis commenced with an investigation of the time series properties of the data. This entailed conducting Stationarity tests using Augmented Dickey Fuller (ADF) and Philip Perron (PP) procedures. Only bank credit to agriculture proved stationary at level while the rest were stationary at first difference (Appendix 1). On account of this mixed level of stationarity, recourse was made to Auto Regressive Distributed Lag (ARDL) approach

Using the ARDL approach, the bounds co-integration test was first carried out. This revealed that the combined series were co-integrated (Appendix 2). On the basis of the established co-integration of the series, the short term dynamics were investigated using the error correction mechanism (Appendix 3). The error correction term was found to be significant, less than one and negative. The long run estimates were then obtained and are presented in levels equation (Table 1). Bank credit turned out to be positively signed. This was in line with expectation. It was also significant at 5% level and non-trivial. Clearly, funding is once again shown to be a determinant of agricultural export. When it is not available, it is a great constraint as studies have repeatedly uncovered.

Stability tests were carried out. Appendices 4&5 demonstrate visually the stability of the system via CUSUM and CUSUMSQ tests.

4. POLICY IMPLICATION, CONCLUSION

The study reexamined bank credit's role in agricultural export development in Nigeria, incorporating variables such as relative price and world GDP growth not commonly used in earlier studies, and adopting an auto regressive distributed lag specification. It re-established that bank credit positively impacts agricultural export. This finding indicates the inadequacy of bank credit in the agricultural export development process, since a steady rise in the magnitude of bank credit to agriculture has been the experience without a commensurate upward movement in agricultural export. Additionally, bank credit proved significant in its effect on agricultural export as was already uncovered by earlier studies. It was

further found to be non-trivial, economically. On account of these findings, it is recommended that the structure of funds available to agriculture should be improved upon, while up scaling of the quantum of funds should be undertaken. In the case of fund structure, a chunk of such funds should transit from loans to grants and equity. Furthermore, the agricultural common wealth, the jointly owned agricultural environment, should be drastically upgraded, freeing farmers' capacities and protecting the nation against climate change challenges. Specifically, the funding panacea that appears to have borne fruit in Nigeria, the provision of funds by successful businesses for educational and industrial activities, should also be extended to agriculture. An agriculture trust fund can give teeth to the recommendation that government should take over and keep in good state, all roads in agric producing communities. This is also the first step towards intervention in post harvest losses, and up scaling of funds available for agricultural activities.

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TABLE

TABLE 1: Levels Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNAO	-0.726096	0.755103	-0.961585	0.3448
LNBC	0.162882	0.078553	2.073524	0.0478
LNTOP	-0.034324	0.214221	-0.160227	0.8739
GEXP	-0.000509	0.009508	-0.053521	0.9577
EXR	0.000926	0.002389	0.387504	0.7014
RP	0.218312	0.104946	2.080229	0.0471
WGDPGR	-0.104355	0.102138	-1.021703	0.3160
C	14.50699	2.886473	5.025855	0.0000

Source: Research output 2020

APPENDIX

APPENDIX 1: STATIONARITY TEST

Variable	Order of Integration	ADJ Test Statistics	Philips-Perron Critical Value			Bandwidth	Decision
			1%	**5%**	**10%**		
LNAEXP	I ~ (1)	-7.512124	-3.577723	-2.925169	-2.600658	3	Reject H_0
EXR	I~ (1)	-4.672600	-3.577723	-2.925169	-2.600658	2	Reject H_0
LNWGDPGR	I ~ (1)	-4.728322	-3.646342	-2.954021	-2.615817	2	Reject H_0
LNAO	I ~ (1)	-7.181628	-3.577723	-2.925169	-2.600658	2	Reject H_0
LNTOP	I ~ (1)	-7.454782	-3.577723	-2.925169	-2.600658	2	Reject H_0
LNGEXP	I ~ (1)	-9.225167	-3.577723	-2.925169	-2.600658	2	Reject H_0
LNBC	I ~ (0)	-5.535913	-3.574446	-2.923780	-2.599925	13	Reject Ho
RLRP	1~ (1)	-6.685146	-3.577723	-2.925169	-2.600658	1	Reject H_0

Source: Research output 2020

APPENDIX 2: BOUNDS TEST

Model	**F-Statistics**	**K**	**Significance level**	**Critical Bound Value**	
				1(0) (Lower Bound)	**1(1) (Upper Bound)**
1	5.980678	7	5%	2.17	3.21
			1%	2.73	3.9

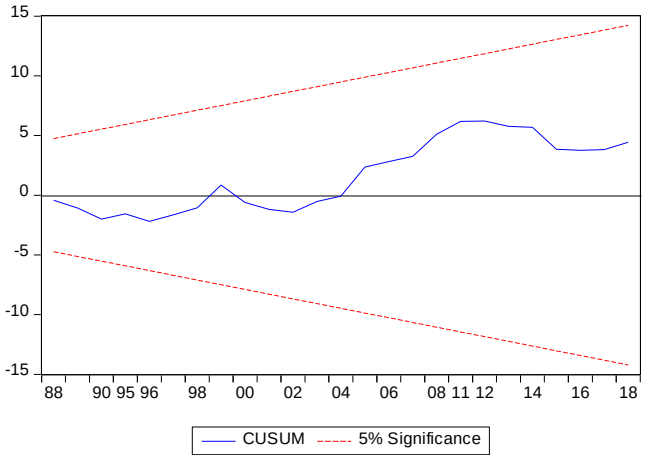
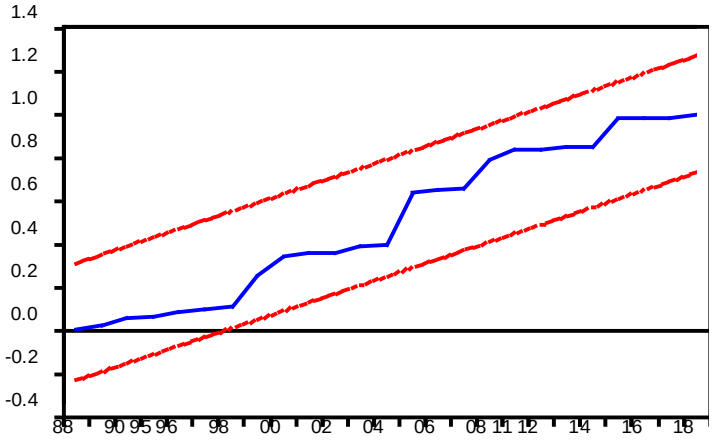
Source: Research output 2020

APPENDIX 3: ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNAO)	-2.217945	1.162207	-1.908391	0.0670
D(LNAO(-1))	3.089851	1.056796	2.923791	0.0069
D(LNBC)	-0.512076	0.208423	-2.456912	0.0207
D(LNBC(-1))	1.066414	0.214421	4.973455	0.0000
D(LNTOP)	0.191436	0.190566	1.004567	0.3240
D(LNTOP(-1))	0.570391	0.190350	2.996541	0.0058
D(GEXP)	-0.009700	0.004837	-2.005365	0.0550
D(EXR)	0.017200	0.004157	4.137134	0.0003
D(EXR(-1))	-0.015209	0.004379	-3.473190	0.0017
D(WGDPGR)	0.036461	0.037153	0.981365	0.3351
D(WGDPGR(-1))	0.165018	0.033679	4.899802	0.0000
CointEq(-1)*	-0.987928	0.118271	-8.353118	0.0000

APPENDIX 4



APPENDIX 5