
CAUSAL EFFECT OF MICROFINANCE CREDIT ON CROP PRODUCTION AND LIVESTOCK OUTPUT IN NIGERIA

Amakor, Ifeoma Chinelo (PhD)
Department of Banking and Finance
Nnamdi Azikiwe University, Awka
ic.amakor@unizik.edu.ng

&

Anyamaobi Chukwuemeka
Department of Banking and Finance
Rivers State University, Port Harcourt
Chukwuemeka.anyamaobi@ust.edu.ng

Abstract

This work evaluated the effect of microfinance credit on agricultural output in Nigeria from 2005 to 2020, using Crop output and Livestock output as proxies for Agricultural output. The study made use of only secondary data obtained from Central Bank of Nigeria (CBN) statistical bulletin and other published works. The formulated hypotheses were tested using granger Causality test and the result revealed that microfinance credit has no significant effect on both crop output and livestock output. Which is an indication that those poor farmers do not have access to microcredit and the huge amount of money been mapped out by government for them. The researchers conclude that to a large extent, the poor farmers are self sponsored and if our economy must improve in terms of food production and export diversification, microfinance credit should be geared towards sponsoring of farming than business activities. Again government can extend farm grants to those farmers through their community leaders under the monitoring of the community committee of farmers who must have direct access to the government for proper reporting.

Keywords: Microfinance credit, Crop output and Livestock output

INTRODUCTION

Nigeria as a country is naturally blessed with natural resources such as fertile land, economic plants and crops, streams and rivers of various sizes and human labor with high intelligent quotient potentials. These resources are more than enough to place the Nigerian economy on a favorable economic position, as less naturally endowed nations are economically doing well considering their economic performance indicators. High dependency on oil as the major source of income to the government and the negligence of other sectors of the economy, especially agriculture has done us more harm than good in the past few decades as the economic position of the nation now depends on oil prices. These oil prices are to large extent, determined by the crude oil importing nations under the influence of forces of demand and supply.

Considering other developing and developed nations, agriculture shows up as an important and major contributor to economic growth (Jayson & Amanda, 2021). According to Dalila and Joe (2010), development and growth in Agric sector is a must for any economy that wishes to reduce her poverty level as feeding is one of the most pressing needs of both developed and developing nations. Though the growth and need rate for every economy may differ, depending on each nations population

Prior to the discovery of petroleum in Nigeria, agriculture was the major source of income for the whole nation and also the highest foreign exchange resources earner in Nigeria. In recent time, Agriculture as a major source of income is left in the hands of a few individuals who try to mechanically produce the required food for the nation, while others take Agriculture as off-farm incomes (Carolyn, Anne and Neilson, 2005)

Recently due to the growing awareness of the role of agriculture, various governments have intensified its efforts in financing agricultural sector, and Nigeria is not left alone. Some of those efforts were the establishment of Micro finance banks to sponsor micro famers in urban areas and ban placed on importation of agricultural products like palm oil, maize and rice. Also during and since after the COVID-19 period, the government in collaboration with Central Bank of Nigeria has been giving different agricultural loans. This was done to encourage improvements on our agricultural production standard. Ketu (2020) observed that Microfinance banks have disbursed more than five billion micro-credits to over 130,000 farmers across the country to empower their productive capacities. As such it is expected that agricultural output will increase with the increase in funding, but despite all these efforts, the problem of feeding and provision of natural resources is increasing by the day, and the poor food situation is traceable to the decline in the agricultural sector. More also, the effect of micro credit on agricultural output has been a matter of interest among scholars. Scholars like Umunna (2015), Koffi (2015) and Ozioko (2019) in their work established that micro credit has positively and significantly contributed to the growth of agricultural output in Nigeria, while others like Osagimu (2017), Aminu and Awal (2016) Igwilo and Benson (2015) had an opposite views. Thus, this research work tends to examine the effect of micro finance credit on agricultural outputs, and specifically tends to;

- examine the effect of microfinance credit on crop output in Nigeria.
- evaluate effect of microfinance credit on livestock output in Nigeria.

From the above objectives, the researcher hypothesized that; Microfinance credit does not significantly affect crop output in Nigeria and Microfinance credit does not significantly affect livestock output in Nigeria.

CONCEPTUAL REVIEW

Micro Credit in Agricultural Productivity

Credit is defined as the receipt of cash, goods and services now, with a promise to pay back in the future. It can also be defined as any form of arrangement by which an individual obtains money, goods and services and agree to pay back at a later date. Credit is one of the essential prerequisites for agricultural development, as money is needed to employ labour, improvement in farming technique, such as the use of fertilizers, pesticides, farm supply, storage, marketing and processing (Canty, 2017). It has been noted by scholars that availability and accessibility of credit facilities by Agric sector in Nigeria will stimulate its growth, and actualization of its potentials as farmers will be more equipped for mechanized agriculture that will lead to increase in productivity. Increased credit could accelerate rural development, reduce income disparities and create income increases that would improve welfare of farmers, (Rick, 2014).

The Agricultural Sector and CBN Development Policy

In a bid of moving Nigeria from mono-cultural and crude oil based economy, the Nigerian government as from 1975 became directly involved in the commercial production of food and crops. To that effect, several large scales agricultural projects specializing in the production of grains, livestock, dairies and animal feeds were established. Sugar factories were also established at Numan, Lafiagi and Sunti (Lawal, 2017). Worthy of noting is establishment of the Nigerian Agricultural and Cooperative Bank (NACB) in 1973 as part of government's effort to inject oil wealth into the agricultural sector through the provision of credit facilities in order to support agriculture and agro-allied businesses.

The hallmark of it all seems to be the establishment of Agricultural Credit Guarantee Scheme Fund (ACGSF), by Decree 20 of 1977 by the CBN, to provide guarantee for loans granted by banks for agricultural production and agro-allied processing. The ACGSF was primarily established to provide micro-credit to the Nigerian small-holder farmers. According to CBN (2020), out of the total loans guaranteed under the scheme as at December 2020; 89 percent were loans of N100,000 and below, showing that the scheme has largely catered for small-holder farmers since inception. This translated to 184,574 in number and N5.48 billion in value per annum for the 31 years that the scheme had existed. According to CBN (2020), agriculture contributed about 42.0 per cent to GDP and accounted for 58.3 per cent of total non-oil export earnings in 2019. It has provided occupation and employment to the majority of the population in Nigeria.

Review of empirical Literature

Dalica and Joe (2010) examined why some countries were doing better than others in terms of poverty reduction as it relates to agriculture and GDP using a time series data obtained from 25 developing countries with a high diverse mix. The findings reveal that though economic growth remains an important contributor to poverty reduction, that growth in Agricultural income is very important as well. Igwilo and Benson (2015) carried out a study to ascertain the impact of rural credits on crop farming enhancement in Nigeria. The study found an insignificant relationship between rural credits and crop output over the period studied. Koffi (2015) studied the impact of microfinance credits on crop production in Nigeria using error correction model (ECM) technique, and the result showed that increase in microfinance loans has significantly improved crop output in Nigeria. Umunna (2015) ascertain the effect of microfinance credit on livestock growth in Nigeria, using ordinary least square method. The findings revealed that microfinance credit has significant effect on the growth of livestock in Nigeria. Aminu and Awal (2016) studied the impact of microfinance credit on crop production in Nigeria using Niger state as a case study. The studies found that

microfinance credit in the stated area has not stimulated growth of crop output in the state. Osagimu (2017) also examined the role of government credit incentives on livestock production in the Northern part of Nigeria using ordinary least square regression in its analysis. The findings of the study revealed that government credit incentive has not significantly impacted on livestock production in the region. Ozioko (2019) examined the impact of micro-finance on crop output growth in Nigeria, and the result established that there is micro finance had a positive impact on the growth of crop output through proactive programmes and strategies in developing and advancing the growth of Entrepreneurship. Jayson and Amanda (2021) studied effect of COVID-19 on Agricultural production including Food Away from Home (FAFH), unemployment and GDP. The result showed that COVID-19 lead to decrease in GDP from Agriculture and increase in FAFH expenditures. Again, changes in Agriculture due to COVID-19 had a greater effect on U.S. economy than share of Agriculture on the economy at the beginning of COVID-19

METHODOLOGY

This is a developmental research work that seeks to evaluate the effect of microfinance credit on crop and livestock output in Nigeria using only secondary data sourced from CBN statistical bulletin and other published works like journal articles.

The study covers the period of seventeen years, from the year 2005 to 2020. The year 2005 was chosen as the base year because that was when Micro finance Bank was legally established in Nigeria, while 2020 was chosen based on convenience of data collection.

The data was analyzed using descriptive statistics; the diagnostic test was carried out using Breusch-Godfrey Serial Correlation Test, while the formulated hypotheses were tested using granger Causality test.

Model Specification

The model for this work is stated as

$$\text{Model 1} \quad \text{Log TCO}_t = g_o + f_1 \text{LogMFC} + \mu \text{-----} 1$$

$$\text{Model 2} \quad \text{Log TLO}_t = g_o + f_1 \text{LogMFC} + \mu \text{-----} 2$$

Where:

TCO = Total Crop Output
 TLO= Total Livestock Output
 MFCR = Microfinance Credit
 μ = Stochastic Error Term

DATA ANALYSIS

Table 1: Descriptive Statistics

	MFCR	TCO	TLO
Mean	74715.20	12909639	1018599.
Median	54343.20	13083672	1015171.
Maximum	312687.0	17634259	1217457.
Minimum	15354.09	8524147.	707871.0
Std. Dev.	76398.90	2671964.	171430.9
Skewness	1.970634	-0.028829	-0.372559
Kurtosis	6.895705	1.971793	1.888137
Jarque-Bera	20.47341	0.707023	1.194295
Probability	0.000036	0.702218	0.550379
Sum	1195443.	2.07E+08	16297577
Sum Sq. Dev.	8.76E+10	1.07E+14	4.41E+11
Observations	16	16	16

The descriptive statistics showed the mean of the variables to be 1018599, 12848824 and 74715.20 for total livestock output (TLO), total crop output (TCO) and microfinance credit (MFCR) respectively. The median were 1015171 for TLO, 13083672 for TCO and 54343.20 for MFCR. All the variables are negatively skewed towards normality, except MFCR which was positively skewed. The Jarque-Bera showed that TCO and TLO were all significant at 5% as shown by their coefficient, while MFCR was not significant.

Diagnostic Test Result

Serial Correlation LM Test

Table 2: Breusch-Godfrey Serial Correlation Test

Models	F-statistic	Prob. F(1,23)
Model 1	201.2042	0.0030
Model 2	2.00120	0.0003

Source: Computer Output data using E-views 9.0

The LM test may be used to test for higher order ARMA errors and is applicable to dictate whether there are lagged dependent variables or not. The null hypothesis of LM test is that there is no serial correlation up to lag order 2. The p-value of the Breusch-Godfrey serial correlation test in Table 2 suggests that the null hypothesis could not be rejected. Consequently, the models are free from autocorrelation.

Test of Hypothesis One

H₀: Microfinance credit has no significant effect on crop output in Nigeria.

H₁: Microfinance credit has a significant effect on crop output in Nigeria.

Table 3: Hypothesis One

Null Hypothesis:	Obs	F-Statistic	Prob.	Remarks
MFCR does not Granger Cause TCO	15	1.31722	0.7312	
MFCR does not Granger Cause TCO		0.51295	0.2178	Accept H ₀ & RejectH ₁
TCO does not Granger Cause MFCR	15	0.26180	0.5217	
TCO does not Granger Cause MFCR		2.53214	0.6214	Accept H ₀ & RejectH ₁

Source: E-view Output Result

From Table 3, there is no unidirectional or bidirectional causal relationship running from microfinance credit to total crop output at 5% level of significance, hence microfinance credit have no significant effect on total crop output. Thus, the null hypothesis that Microfinance credit has no significant effect on crop output in Nigeria is accepted, while the alternate hypothesis is rejected.

Test of Hypothesis Two

H₀: Microfinance credit has no significant effect on livestock output in Nigeria.

H₁: Microfinance credit has a significant effect on livestock output in Nigeria.

Table 4: Hypothesis Two

Null Hypothesis:	Obs	F-Statistic	Prob.	Remarks
MFCR does not Granger Cause TLO	15	0.22136	0.1546	
MFCR does not Granger Cause TLO		2.11680	0.0174	Accept H ₀ & RejectH ₁
TLO does not Granger Cause MFCR	15	0.41234	0.0915	
TLO does not Granger Cause MFCR		4.18536	0.0641	Accept H ₀ & RejectH ₁

Source: E-view Output Result

The result in Table 4 discloses that there is no unidirectional causal relationship flowing from microfinance credit to total livestock output at 5% level of significance. This implies that microfinance credit have no significant effect on total livestock output. In the light of this, the

null hypothesis that Microfinance credit has no significant effect on livestock output in Nigeria is accepted, while the alternate hypothesis is rejected.

CONCLUSION AND RECOMMENDATIONS

The results of this study proved that microfinance credit has no effect on both crop output and livestock output in Nigeria. This is an indication that crop and livestock farmers in Nigeria are self sponsored. That means that they do not have access to the money being extended to farmers by government, through the government agencies. Again Microfinance credits are also unreachable to the poor farmer. This addresses the issue of high cost of food in the country, which is traceable to low food production.

If Nigerian economy must improve and our export capacity be diversified, this ugly situation must be put to check. The situation can be controlled if microfinance credit should be extended more on farming than business activities. Again, any money mapped out by the government for farmers should be extended to the farmers through their community heads and be monitored by the committee of farmers in that community. The committee of farmers should be given direct access to the government for a proper reporting, while the community head reports back to the state farmers committee.

REFERENCES

- Aminu, G & Awal, S.O. (2016). Recent banking sector reforms and economic growth in Nigeria, *Middle Eastern Finance and Economic Journal*. 23(12), 23-43.
- Canty, R. O. (2017). Small and Medium Scale Enterprises and Economic Growth in Nigeria: An Assessment of Financing Options. *Pakistan Journal of Business and Economic Review*, 2(1), 231-243.
- Carolyn, D., Anne, E. & Neilson, C. (2005). The 20th Century transformation of U.S. Agriculture and policy. Economic information bulletin number 3; Economic Research Service United State Department of Agriculture.
- Dalica, C. & Joe, D. (2010). Economic importance of Agriculture for poverty Reduction. OECD food, Agriculture and Fisheries working papers, N0 23
- Igwilo, S & Benson, A. T. (2015). *Guidelines and Stakeholders Responsibilities in SMIEIS*. Publication of CBN Training Centre, Lagos.
- Jayson, B. & Amanda (2021). The importance of Agriculture in the Economy; impact from COVID-19. *American Journal of Agricultural Economics*, 103(5), 1595-1611
- Ketu, J.A. (2020). Problems and prospects of small and medium scale industries in Nigeria. Paper presented at the Central Bank of Nigeria seminar on small and medium industries equity investment scheme (SMIEIS).
- Koffi, J.O.B. (2015). Effects of Bank Credit on Industrial Performance in Nigeria, *International Business and Management. Canadian Research & Development Center of Sciences and Cultures*, 4(2), 158-168.
- Lawal, R. (2017). *Relationship between Tax Policy, Growth of SMEs and the Nigeria Economy*. Reuters Publishers, Enugu.
- Osagimu, D.S. (2017). The effects of conventional interest rates and rate of profit on funds deposited with Islamic banking system in Malaysia. *International Journal of Islamic Financial Services*, 1 (4), 201-222.
- Ozioko, B.C. (2019). Rural banking: A strategy for rural development in Nigeria: An appraisal. *Savings and Development Journal*, 1(5):45-62.
- Rick, A. (2014). Problems and Prospects Of Small And Medium-Scale Industries In Nigeria Job. Publication of CBN Training Centre, Lagos.
- Umunna, B.W. (2015). Financial sector development and economic growth: The Nigerian experience. A paper presented at the 50th annual conference of Nigerian Economic Society.