EFFECTS OF THE OPERATIONS OF THE AGRICULTURAL CREDIT GUARANTEE SCHEME FUND ON CASH CROPS

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Abstract

As part contribution to an on-going evaluation of the Agricultural Credit Guarantee Scheme Fund (ACGSF) especially in view of the non-oil export drive policy of the Federal Government of Nigeria, this paper reviewed the operations of the ACGSF. The objective was to assess the trend in the number and value of loans guaranteed by the Scheme and determine any significant relationship between the activities of the Scheme and the output of cash crops in Nigeria from 1981 to 2005. Five hypotheses were tested by the use of simple linear regression and auto-regression. Part of the findings were that: cash crop output had a significant upward trend; there were significant increases in the value of loans guaranteed to cash crop farmers but the number of loans showed no significant increase, suggesting that the number of cash crop farmers who have access to guaranteed loans may not be on the increase. There was a general weak relationship between the value of ACGSF guaranteed loans and the output of cash crops. In the light of the above we recommend that the Scheme should, through the deposit money banks (DMBs), foster a closer link with this category of farmers to facilitate their access to required technical services which may not have been embodied in the loan.

Introduction

Agriculture in Nigeria constituted about 61.2% of GDP at 1962–1963 constant prices in the pre 1970s. By 1981, this percentage had fallen to 33.63%. The descent of the sector from glory in the Nigeria's economy was gradual. There were cracks in the framework of the sector that suggested that the sector never actually enjoyed any stability of tenure during its days of "glory".

The pre 1970 national plans were separate regional plans fused into one unwholesome plan. The only binding string was the general agreement on objectives and general direction of the priorities accorded the different sectors. Cash crops production was emphasized after national political independence, as was the case in colonial times. This distorted the agricultural base of the nation. Any support for food crop production was devoid of organized market facilities. The Marketing Board which was expected to stabilize farmers' income and therefore facilitate capital formation within the sector became a machinery for exploiting farmers (Nwankwo, 1992). The story remained so even after the reformation of the marketing boards in 1977.

The framework for the supply and distribution of agricultural inputs had its own problems. The National Seed Service (NSS), established in 1972 to produce and multiply improved seeds to farmers, was, apart from the problem of inadequacy of qualified staff, constrained by poor funding. Policy on major agricultural inputs availability and subsidies kept changing in an attempt to finding a lasting solution to the problems of availability, leakage and arbitrage (Nagy and Edun, 2002). The National Fertilizer Company (NAFCOM) set up in 1988 to minimize the problem of fertilizer availability discontinued production in 1999.

These policies were supposed to influence farmers' behaviour in desired directions. However, they became super structures on the weak foundation of smallholder farmers. Even though smallholder farmers constitute about 80% of all farm holdings (Okolo, 2004) and produce about 90% of

the nation's agricultural output, they suffer from low levels of education and ignorance of available facilities and modern farm practices. The poor agricultural resource base of these farmers coupled with the problems of inadequate and poorly motivated extension service providers compounded the situation.

The foregoing was the background to the establishment of the Agricultural Credit Guarantee Scheme Fund (ACGSF) by Act 20 of 1977 which started operation in 1978. The principal objective of the Scheme was to facilitate the provision of credit to farmers by providing guarantees to participating banks known as deposit money banks (DMBs) for loans granted to farmers in accordance with the scheme enabling act. The Scheme has been in operation for about thirty years. Periodic studies are of necessity part of any project/programme to keep implementation on course. In trying to assess the performance of the ACGSF this paper asked these questions: has the Scheme made any significant impact on farmers' accessibility to farm credit? Do ACGSF guaranteed loans have any significant impact on cash crop output?

Credit is a pre-requisite for any forward-looking economic activity. Accessibility to credit facilitates the acquisition and application of state of the art technology and enables such enterprise to be in the driving seat in technology application. This facility is, however, in short supply to smallholder farmers in Nigeria, as it is indeed for most developing countries (Adams and Ladman, 1979; Abraham, 1985; World Bank, 2000).

Agricultural credit sources remained grossly imbalanced in favour of informal/traditional sources until 1972. These traditional sources of farm credit, though considered effective in loan disbursement (Aryeetey, 1997), were judged to be charging interest rates that stifled the smallholder farmer. The realization of this may have informed the setting up of the Nigeria Agricultural and Cooperative Bank (NACB) in 1972 to increase institutional credit flow to farmers. NACB was in 2003 transformed into the Nigeria Agricultural, Cooperative and Rural Development Bank (NAC&RDB) with the merger of the People's bank and the Family Economic Advancement Programme (FEAP) with NACB. The formation of NACB was followed in quick succession by other schemes designed to enhance rural banking habits and to encourage commercial banks to increase lending to the agricultural sector. One such scheme was the Agricultural Credit Guarantee Scheme Fund (ACGSF), set up in 1977 and operational in 1978.

The setting up of the ACGSF was predicated on the unwillingness of commercial banks to give loans to smallholder farmers for reasons of high default rate on loan repayment and therefore high risk of repayment. This was compounded by lack of collateral for banks to fall back on in case of default and the high cost of administering low unit value loans to farmers who remained widely scattered.

The ACGSF had an initial authorized capital of =N= 100.00 million. This was reviewed upward to ₦1.00 billion in 1999 and then ₦3.00 billion in 2000 (CBN, 2004). This fund was meant to provide cover to commercial banks to the tune of 75% of any net default, which might arise from loans given to farmers. The financial risk of default in loan repayment was to be borne by the ACGSF. The scheme required commercial banks to give 10% of their profit before tax to farmers as loans. Any defaulting banks were to be penalized by the Central Bank. In addition, commercial banks were required to have a certain percentage of their branches in rural areas. The aims of the Scheme were:

- To increase institutionalization of credit
- To decentralize institutional credit agencies
- To reduce conditions of borrowing
- To give incentives to banks to give loans to farmers

By 2004, out of 25 universal banks in Nigeria, 11 were participating in the Fund. In addition, five out of the 669 eligible community banks, now micro credit finance houses, have joined the scheme. By the end of this year too, although the paid up share capital of the Fund remained at ₦2.25 billion, the total resources available to it stood at ₦4.40 billion (CBN, 2004)

Thus the objectives of this paper were to:

- Assess the trend in the number and value of loans guaranteed by ACGSF to cash crop farmers for the period 1981 to 2005.
- Determine the relationship between ACGSF guaranteed loans and the output of cash crops.
- Assess the trend in the output of cash crops

The study, which covered the period 1981 to 2005, covered only cash crops - oil palm, rubber, cocoa, cotton and groundnut - with a view to establishing whether there was any significant

- relationship between loans guaranteed by ACGSF and the output of individual cash crops;
- upward trend in the output of cash crops over the period;
- increase in the volume of loans guaranteed to cash crop farmers over the period;
- upward trend in the unit average value of loan guaranteed by the Scheme to cash crop farmers over the period under review; and
- change in the probability structure of the output of the selected crops over the period under review.

2. Material and Methods

Materials used in this paper were the number and value of ACGSF guaranteed loans to cash crops. The cash crops were oil palm, rubber, cocoa, cotton and groundnut. Data used were for the period 1981 to 2005, all of which were obtained from the CBN (2005) Statistical Bulletin.

The data were analyzed using auto-regression and simple linear regression. Auto-regression was used to determine the trend in the number and value of loans guaranteed and the trend in the output of the individual crops.

The simple linear regression model was:

$$Q_t = b_0 + b_1 Z_1 + e_t$$

where Q_t = volume of output; b_0 = intercept coefficient; b_1= loan slope coefficient; Z_t = value of loan and e_t = error term. Hypothesis 1 was tested using this model.

The auto-regression model was:

$$Y_t = Y_{t-1} + e_t$$

where Y_t = current value of the variable, Y_{t-1} = one period lag value of the variable and e_t is the error term.

The auto-regression model was used to test hypotheses 2, 3 and 4. Trends identified in the auto-regression of number of and unit average value of guaranteed loan was used as proxy to loan accessibility to farmers.

Hypothesis 5 was tested by the use of the Chow breakpoint with 2001 as the breakpoint. The authors were of the opinion that by this year, any policy change effects on volume and value of loans to be guaranteed in the operations of the ACGS introduced by the government that came into power in 1999 would have started to have effect.

The Eviews statistical package was used for analysing the data.

3. Results and Discussions

The simple regression results of crops output on the value of loans guaranteed to the respective crops is presented in Table 1. By these results the test of the

hypothesis of any significant relationship between the value of ACGSF guaranteed loans and the output of cash crops was carried out. The table revealed that guaranteed loans were significant in explaining the changes only in groundnut output**.** The result for groundnut satisfied the *a priori* expectation that there is a positive relation between crop out and value of loan, all things being equal. Palm produce, that is, palm oil (PO) and palm kernel (Pkk) output showed an inverse relationship with value of loans guaranteed. This result was significant for PO (prob. = 0.01) but not for Pkk (prob. = 0.06).

Strictly speaking, loan *per se* is not an input in production as it only facilitates the acquisition of needed resources for production. A certain amount of it, depending on the peculiar circumstances of the enterprise, is needed to ensure the availability of necessary input. The effective technical combination of inputs and the management of production are, to a large extent, beyond the influence of credit. The low R^2s in Table 1 indicate the limited extent to which loan alone can explain the changes in the output of cash crops. This was particularly true for perennial crops like cocoa and rubber. The R^2 for cocoa and rubber was 0.00 and 0.04 respectively and 0.08 for cotton. Furthermore, their respective t-statistic was not significant. The tentative conclusion is, therefore, that ACGSF guaranteed loans have little relevance to cash crops production. The form in which loans are given may therefore matter. Loans given in forms that are not capable of being diversified may make a difference.

Table 1 Regression results of output on value of loans guaranteed

Variable	Coefficient	Std Error	t-Statistic	Prob.	R^2
Palm oil	-0.02	0.01	-3.04	0.01	0.29
Palm kernel	-0.02	0.01	-1.98	0.06	0.15
Rubber	0.05	0.07	0.77	0.45	0.04
Cocoa	0.00	0.00	0.27	0.79	0.00
Cotton	0.02	0.01	1.45	0.16	0.08
Groundnut	0.40	0.08	4.92	0.00	0.51
Groundnut oil	0.07	0.02	2.99	0.01	0.28

Source: Generated from data

The auto regression results (Table 2) show a significant upward trend in output for all the crops in the period under review. Groundnut with a slope coefficient of 1.07 (t-statistic = 20.56 and a probability of 0.00) and cotton with a slope coefficient 1.00 (t-statistic = 11.19 and a probability of 0.00) showed higher rates of increase over the period.

In order to test hypothesis 4, (whether the coefficient of output was the same before and after 2001) the Chow Breakpoint = test was carried out on crops output using 2001 as the breakpoint. The results of both the F-statistic and the log likelihood showed that there was no change in the probability structure of output for cocoa, groundnut and palm oil. Rubber had a different result. It had an F-statistic of 7.60 with a probability of 0.00 (log likelihood of 13.56, prob. =0.00) indicating that there was a significant change in the output coefficient for this crop. The two-test statistics gave somewhat different results for palm kernel (Pkk). The F-statistic result was 3.31 with probability of 0.06 and that of the log likelihood was 6.87 with a probability of 0.03.

Table 2. Auto-regression results of output of selected crops

Variable	Coefficient	Std Error	t-Statistic	Prob.	R^2
Palm oil	0.66	0.20	3.28	0.00	0.35
Palm kernel	0.61	0.19	3.26	0.00	0.33
Rubber	0.56	0.19	2.89	0.01	0.28
Cocoa	0.61	0.17	3.69	0.00	0.38
Cotton	1.00	0.09	11.19	0.00	0.85
Groundnut	1.07	0.05	20.56	0.00	0.95
Groundnut oil	0.78	0.13	5.77	0.00	0.60

Source: Generated from data

Table 3. Auto-regression results of value of loans guaranteed by purpose

Variable	Coefficient	Std Error	t-Statistic	Prob.
Oil Palm	2.23	0.43	5.15	0.00
Rubber	0.28	0.42	0.66	0.53
Cocoa	2.22	0.66	3.35	0.00
Cotton	0.31	0.20	1.53	0.14
Groundnut	0.61	0.18	3.38	0.00

Source: Generated from data

Table 3 shows that there were significant upward trends in the value of loans guaranteed to oil palm, cocoa and groundnut with significant t-statistic (prob. ≤ 0.05). The story was different for rubber and cotton the t-statistics of which were not significant at 5% critical level.

Table 4, which shows the unit average value of loan guaranteed to cash crop farmers, reveals that there was no significant upward trend in the unit average value of loan guaranteed to oil palm (t-statistic of 0.98, prob. = 0.34) and rubber (t-statistic of 0.52 , prob.=0.62). Cocoa, cotton and groundnut show significant increases in the unit average value of loan guaranteed to farmers.

The auto-regression of number of loans guaranteed for the period is presented in Table 5. The table reveals that only cotton had an increase in the number of loans guaranteed to its farmers. The number of loans guaranteed to rubber farmers had a negative trend though not significantly so at 5% significant level (prob. 0.62). The mean number of loans guaranteed to rubber farmers was 2.50 with a standard deviation of 3.90. When Tables 2 and 3 are looked

at jointly, one finding is that whereas loans guaranteed to rubber do not show a significant increase, the output showed significant increase with a structural break.

Table 4. Auto-regression results of unit average value of loans guaranteed

Variable	Coefficient	Std Error	t-Statistic	Prob.
Oil Palm	0.22	0.23	0.98	0.34
Rubber	0.19	0.37	0.52	0.62
Cocoa	0.79	0.14	5.69	0.00
Cotton	0.62	0.17	3.67	0.00
Groundnut	0.94	0.13	7.45	0.00

Source: Generated from data

Table 5. Auto-regression results of number of loans guaranteed 1981-2005

Variable	Coefficient	Std Error	t-Statistic	Prob.
Oil Palm	0.15	0.22	0.67	0.51
Rubber	-0.15	0.29	-0.51	0.62
Cocoa	0.38	0.20	1.94	0.07
Cotton	0.46	0.19	2.41	0.02
Groundnut	0.18	0.21	0.85	0.40

Source: Generated from data

Table 6 Summary effects of guaranteed loans on crops

Crop	Crop output	Value of loan	Number of loan	Unit average value of loan
Oil palm	increase significant	increase significant	increase NS	increase NS
Cocoa	increase significant	increase significant	increase NS	increase significant
G/nut	increase significant	increase significant	increase NS	increase significant
Rubber	increase significant	decline NS	increase NS	increase NS
Cotton	increase significant	increase NS	increase significant	increase significant

Source: Generated from data

(NS Not significant)

Table 6 shows the summary effects of ACGSF operations on cash crops. There were significant increases in the output of all cash crops albeit guaranteed loans, though also generally on the increase, could hardly explain the increases in crop output. Column 4 suggests that apart from loan to groundnut, there were no significant increases in the number of loans guaranteed. This could imply that the number of farmers that have access to ACGSF loan facilities remained virtually unchanged. This may have accounted for the general significant increases in the unit average value of loan in the face of increases in the value of loans guaranteed. That loans value are on the increase whereas relationships with crop output were weak may indicate the need for a review of the content and method of loan disbursement to minimize possibilities for diversion and to make timely application by the farmers.

The mean number of loans showed that groundnut had the highest with a mean of 300.20 and a standard deviation of 366.90. The high coefficient of variation (122.22%) was the result of the outlier occurrence in 2000 when 1664 units of loan were guaranteed. If this figure is excluded the mean number of loans guaranteed to groundnut falls to 243.38 with a standard deviation of 237.13 (CV =97.43). On average, the number of loans guaranteed for cotton farmers was 186.72 units with a standard deviation of 211.33. Rubber and oil palm had the lowest. The number of loans guaranteed to rubber farmers ranged from 1 to 15 with a mean of 2.50. Information on number of loans guaranteed was not available for 1982, 1983, 1990, 1994 and 1995. In addition, no loan was guaranteed to rubber farmers in 1997, 1999, 2000 and 2004. Oil palm had a mean loan number of 44.52 with a standard deviation of 102.63. Again, the presence of an outlier in 2000 of a total number of loans of 504 distorted the picture.

5. Conclusion

ACGSF guaranteed loans showed significant increases in value but not in number of loans guaranteed. This may indicate a non-increasing coverage of cash crop farmers. There were significant increases in the output of all the cash crops but an apparent weak relationship between values of ACGSF guaranteed loans and crop output, suggesting a need for a review of the form of loan disbursement/management.

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