Full Length Research Paper

Analysis of loan default among agricultural credit guarantee scheme (ACGS) loan beneficiaries in Akwa Ibom State, Nigeria

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This study analyzed factors influencing defaults in loan repayments among agricultural credit guarantee scheme (ACGS) loan beneficiaries in Akwa Ibom State using Tobit model. A total of 109 ACGS loan beneficiaries were randomly sampled from the study area. Analysis of data using the model revealed that 12 explanatory variables namely: age of the beneficiaries, family dependency level, total farm cost, farm income, time interval between loan application and disbursement, other loan schemes, visits by credit officers, loan duration, government policies, years of experience, loan size and average interest rate charged were significant variables influencing default in loan repayment among the beneficiaries in the study area. The study recommended that efforts should be directed towards promoting a good credit culture and discipline through client education and moral persuasion.

Key words: Loan, default, credit scheme, bank credit, loan repayment.

INTRODUCTION

Among the major factors of agricultural production, credit has been regarded as one of the essential factors. This is because the adoption of most farm technologies involves the purchase of improved inputs by the farmers. Few farmers have the financing resources to make such huge purchases and lack of credit becomes a major constraint on agricultural development. Insufficient provision of credit has always constituted a causal factor of low domestic and foreign investment in agriculture sector of the country (Central Bank of Nigeria, 2000). The importance of agricultural credit to national development makes it an evergreen topic in agriculture especially as previous credit programmes have not made desired impact in the agricultural sector. Agricultural credit has often been penciled as the panacea for increased agricultural production and productivity. Credit is important in agricultural production Igben and Eyo (2002) and it also helps to alleviate the problems of the rural dwellers particularly in the presence time-lag between planting and harvesting. Credit to farmers helps in break ing

the vicious cycle of poverty characterized by low productivity, low income, low savings, and investments (Adegeye and Dittoh, 1985). More so, credit enables farmers to adopt the substitution of more profitable farm enterprises for the less profitable ones as well as expansion of farm sizes to benefit from the economics of sizes (Central Bank of Nigeria, 2000). There has been an increase in the demand for farm credits in Nigeria.

The Federal Government of Nigeria in the past had initiated various agricultural credit related policies and programmes in attempt to improve the agricultural production through provision of cheap financial resources to farmers at a concessionary interest rate. Agricultural Credit Guarantee Scheme Fund (ACGSF) is one of such schemes enunciated by the federal government of Nigeria. Through Decree 20, the Federal Government of Nigeria legally established the Agricultural Credit Guarantee Scheme Fund (ACGSF) in March 1977 with the Central Bank of Nigeria as its managing agent. According to the provisions of the ACGSF Act, the Fund was to start off with an authorized capital of 100 million naira, shared between the Federal Government and the Central Bank of Nigeria (CBN) in ratio of 60 to 40 percent. This authorized share capital subscription continued to increase over the years from an initial contribution of 85.50 million

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naira as at December, 1977 to 357.70 million naira as at 1998 and 4 billion naira as at early 2006. The purpose of the scheme has been to encourage money deposit banks to lend to those engaged in agriculture by providing guarantee for loans granted by such banks for crops and livestock as well as fish production and processing as stipulated in the ACGSF Act of 1977. The scheme which commenced its operation in 1978 has attained over 37 years of financial service delivery to the agriculture sector of the economy.

In Nigeria, successive governments have attempted to utilize both institutionalized and non-institutionalized conduits to encourage credit purveyance to farmers. These various strategies adopted by the governments were intended to channel credit to the agriculture sector of the economy. According to the Nigeria Agricultural policy document of 1987, the Federal government had between 1956 and 1980 adopted four major strategies aimed at intervening in agricultural credits. These include fiscal, monetary, infrastructural and institutional policies. The important role of credit in agricultural enterprise development and sustainability has prompted the Federal Government of Nigeria (FGN) to establish credit schemes such as the Agricultural Credit Guarantee Scheme (ACGS) and Agricultural Credit Support Scheme (ACSS) to ensure farmers' access to agricultural credit.

In Akwa Ibom State in particular and Nigeria as a whole, various sources of credit available to farmers are informal and formal. The latter source usually involves large credits from banks, credit schemes, and cooperatives. Informal credit source despite its major constraint of small size of credit facilities are usually short term. This source is financed by friends, relatives, and self help group and money clubs. Abbot (1979) gave the typology of credit as short, medium and long term. He used the numbers of years of credit utilization as the bases for the typology. In Akwa Ibom State, all the loans under ACGS are seasonal and short term. Despite the good intention behind establishing Agricultural Credit Guarantee Scheme in Akwa Ibom State, it has faced some repayment problems which have called for prompt and pragmatic remedies.

The major focus of the study is on analysis of ACGS loan defaults. The specific objective is to determine the factors influencing defaults among ACGS loan beneficiaries in Akwa Ibom State.

Problem Statement

In Nigeria, the financial system experienced grave problems in the mid 1990s. These culminated into widespread financial distress and bank failures. The sequel of all these were associated with increasing number of delinquent borrowers and unprecedented increase in non-performing loans and loan losses, as well as drastic decreases in average profitability. Degbunam (2001) reported that many banks failed during the period

due to financial distress attributed to loan losses. The grave problem identified by many development economists which has plagued ACGS in Akwa Ibom State and other states in Nigeria is high rate of agricultural loan default arising largely from various factors in the agricultural production environment. This problem is further accentuated by the colossal difficulties facing farmers themselves. The review of agricultural history of Nigerian credit schemes/institutions has depicted that the failure of credit schemes were caused by loan default by their beneficiaries. There is greater need to reduce or provide solutions to default in agricultural credit under ACGS in Akwa Ibom State. With the post consolidation and reforms of banks in the country, the willingness to grant credit facilities to farmers exist but the fear of loan default by farmers seem too great for bank managers. Therefore there are needs to identify policy variables that are needed to form workable credit framework in the state and the nation at large.

Literature Review

Agricultural credit encompasses all loans and advances granted to borrowers whether beneficiaries of agricultural reform or some others to finance and service production activities relating to agriculture, fisheries, forestry and also for the processing, marketing, storage and distribution of products resulting from these activities (Igben and Eyo, 2002). In Nigeria, many researchers have related several factors to agricultural loan default among small scale farmers. For instance, Okorie (1986) examined the major determinants of agricultural smallholder loan repayment in Ondo State, Nigeria. Results identified the nature and timeliness of loan disbursement, the number of supervisory visits by credit officers, profitability of the enterprise on which the loan funds were invested as significant factors that stimulate loan repayment. Also, Balogun and Alimi (1988) identified the major causes of loan default as loan shortages, delay in time of loan delivery, poor supervision, non profitability of farm enterprises and undue government intervention with the operations of government sponsored programmes. In a study on stimulating growth in agricultural lending in Nigeria through ACGS, Okuneye (1995) pointed out that the performance of credit institution should be evaluated based on the role of loan recovery. This is very essential since low loan recovery rate decrease lenders' net return. This minimizes the institutional propensity to generate resources internally for growth.

He maintains that interest rate charged by the lenders may affect loan recovery during the loan tenor.
Oni et al. (2005) analyzed factors influencing formal and informal loan default among poultry farmers in Ogun State, Nigeria. The Probit model result revealed that, factors such as age of the farmers, educational and income level of the beneficiaries significantly influenced

default in loan repayment among poultry farmers in the study area. The study also showed that the flock size of farmers influenced default rate. Eze and Ibekwe (2007) examined the determinants of loan repayment under the indigenous financial system in the Southeast Nigeria. Empirical results based on the multiple regression analysis revealed that amount of loan received, age of beneficiaries, household size, and years of formal education as well as the main occupation of beneficiaries as important predictors of loan repayment under the system. Oladeebo and Oladeebo (2008) examined determinants of loan repayment among smallholder farmers in Ogbomoso Agricultural Zone of Oyo State, Nigeria. Results of the multiple regression analysis showed that, the amount of loan obtained by farmers; years of farming and credit experience and level of formal education were the major factors that positively and significantly influenced loan repayment. In the South-South region of Nigeria, Ugbomeh (2008) investigated determinants of loan repayment performance among women self-help groups in Bayelsa State. The estimated regression model indicated that women as household heads, interest rate, household size, price stability of farm proceeds, and commitment to self help groups significantly affected loan repayment of women farmers in the group. Udoh (2008) examined the extent of default among beneficiaries of government sponsored loan scheme in Akwa Ibom State, Nigeria. The loan performance indices estimated revealed that over 75% of the loans disbursed by Akwa Ibom State Agricultural Loan Board (AKSALB) in the period under review were still held by 59 percent of the loan beneficiaries. This situation is an indication of high level of loan default among the benefiting farmers. Certain personal and facility factors were estimated to determine the probability of default among the beneficiaries. Notable among these included sex, household size, farm size, loan from other sources, primary occupation of the beneficiary, time lapse between loan application and disbursement, total farm expenditure and duration of the granted loans.

Elsewhere, Chirwa (1997) analyzed the determinants of credit repayment among smallholder farmers in Malawi using a probit model. Results revealed sales of crops, size of group, degree of diversification, income transfer and the quality of information as significant determinants of agricultural credit repayment. Mashatola and Darroch (2003) analyzed the factors affecting the loan status and repayment scheme of sugarcane farmers who received graduated mortgage loan in Kwazulu-Natal, South Africa. Results identified farm size (proxied by annual gross turnover), access to off-farm income, and average annual gross turnover relative to loan size as criteria in selecting potential farmers for such scheme as they provided additional liquidity to fund future operations and debt repayment. Kohansal and Mansoori (2009) investigated the factors affecting loan repayment performance of farmers in Khorasan- Razavi Province of Iran. Results

from a logistic model showed that loan interest rate was the most important factor affecting repayment of agricultural loans. Farming experience, and total application cost were the next factors respectively. Awunyo-Vito (2012), investigated the determinants of loan default among farmers in Brong Ahafo region of Ghana. The study employed probit model and the results showed that farm size, and engagement in of farm income generating activities reduces the likelihood of loan repayment default significantly. Also, larger loan amount and longer repayment period as well as access to training are more likely to reduce loan repayment default.

METHODOLOGY

Study Area

The study was conducted in Akwa Ibom State, located in the coastal South-South region of Nigeria. The region is popularly called the Niger Delta region or the oil rich region of Nigeria. The state is located between latitudes $4°32^1$ and $5°33^1$ north and longitudes $7°5^1$ and $8°25^1$ east. It has a total land area of areas of $7,246km^2$. It is bordered on the east by Cross River State, on the west by Rivers State and Abia State, and on the South by the Atlantic Ocean. Akwa Ibom State has a population of about 3,902,051 (NPC, 2006). The state is basically an agrarian society where crops like maize, okra, cassava, yam and rice are cultivated in large quantities.

Data collection and Sampling Technique

Data used in the study consisted of both primary and secondary data. The primary data were obtained with the aid of well structured questionnaires which were administered to selected ACGS loan beneficiaries in the Akwa Ibom State. The secondary data were collected from Development Finance Office of the Central Bank of Nigeria, Uyo, all branches of First Bank of Nigeria Plc, Union Bank of Nigeria Plc, Unity Bank of Nigeria Plc Uyo, and former Bank PHB Plc, Uyo in Akwa Ibom State. The study is limited to ACGS loan beneficiaries in Akwa Ibom State who obtained loans from the listed Banks from 1991 to 2005. Multistage sampling procedure was adopted in selecting the loan beneficiaries. The first stage involved purposive selection of the three zones of the ACGS operation in the State. This was to ensure that all the operative areas of the ACGS activities were covered in the State. The study restricted itself to banks that actively participated in ACGS lending to farmers in the study area. The second stage consisted of random selection of 3 Local Government Areas (LGAs) from each of the three zones. The final stage involved random selection of 16 beneficiaries from each of the nine LGAs

using the list of loan default register given by the Development Finance Office of the CBN, Uyo. A total of 109 ACGSF loan beneficiaries from 1991 to 2008 were obtained using the above sampling procedures. They were administered with well structured questionnaires which were pre-tested before administering to the loan defaulters. Also, structured questions were adopted in personal interview of the Agricultural credit officers of the lending banks which actively participated in financing agricultural production under ACGS in the State. This was to verify the validity of data on loan default by the respondents in the study area.

Data Analysis

The study employed Tobit model to determine factors that influence default in loan repayment among the beneficiaries.

Tobit Model

The study used tobit model which is an econometric model proposed by James Tobin (1958) to describe the relationship between a dependent variable of which cannot take any values smaller than zero and an independent variables (or vectors) X_i. This model supposes that there is a latent unobservable variable. This variable linearly depends on X_i through parameter (vector) "ß" which determines the relationship between the independent variables or (vectors) X_i and the latent variable (first as in a linear model). In addition, there exists a normally distributed error term e_i to capture the random effect on the relationship. Observable variable is defined to be equal to the latent variable whenever the latent variable is beyond zero and zero else.

The Tobit regression, a hybrid of the discrete and continuous dependent variable was used to determine the impact of the explanatory variables on the probability of being a loan defaulter. The model is expressed based on [24].

$$\begin{cases} Y_i = X'_{2i}\beta_2 + V_i, & if 1 < Y_i^* > 0 \; where \; V_i \sim N(0,\delta^2) \\ 0 = X'_{2i}\beta_2 + V_i, & if \; Y_i^* = 1 \; where \; V_i \sim N(0,\delta^2) \\ i = 1,2,3,4,\dots,109 \end{cases} \dots (1)$$

Y_i is the dependent variable and is discrete when the beneficiary is a defaulter and Continuous when otherwise. Y_i^* is the defaulting index expressed as the official amount borrowed per total amount repaid by the beneficiary. Y_i^* value lies between zero and one, but cannot be zero. When $Y_i^* > 0$, it implies that, Y_i is observed whereas the reverse is the case when $Y_i^* = 1$. On the other hand, X_i is a vector of explanatory variables, β is a vector of unknown coefficient or parameter and V_i is an independently and normally distributed error term. Explicitly the Tobit model used in this study is expressed as thus;

$$\begin{aligned} DIN = {} & \beta_0 + \beta_1 Age + \beta_2 Sex + \beta_3 Fad + \beta_4 Hed + \beta_5 Edu \\ & + \beta_6 Loa + \beta_7 Vcr + \beta_8 Poc + \beta_9 Tfc \\ & + \beta_{10} Tlo + \beta_{11} Lod + \beta_{12} Gop + +\beta_{13} Inc \\ & + \beta_{14} Fex + +\beta_{15} Los + \beta_{16} Dis + \beta_{17} Avi \\ & + U \dots \dots \dots \dots \dots \dots \dots \dots \dots . \dots . (2) \end{aligned}$$

Where DIN is the estimated probability of default

Age = Age of the loan beneficiaries is measured in years
Sex = Sex of the loan beneficiaries (1 for female and 0 for male respondent)
Fad = Family dependency level of loan beneficiaries is measured as total number of people in the same house feeding from the common family pot.
Hed = Health of loan beneficiaries is qualitatively measured as healthily or sick
Edu = Education level of beneficiaries is measured as total number of years which the loan beneficiaries spent in school to learn and acquire knowledge
Loa = Other loans is measured qualitatively as yes or no .This indicates beneficiaries' ability to obtain loan from other sources (dummy; yes = 1 No = 0)
Vcr = Visit by credit officers; measures banks' officers' ability to monitor beneficiaries' performances. It is qualitatively measured as dummy; yes= 1 or no = 0)
Poc = Primary occupation of loan beneficiaries measured qualitatively as farming as a major occupation or not
Tfc = Total farm cost of loan beneficiaries is measured in naira as total expenditures incurred in the farming activities by the beneficiaries using the loans
Tlo = Time between loan application and approval is measured in months as the period between the date the loan applicants submitted loan forms to banks and the date the beneficiaries obtained the loans from the banks
Lod = Loan duration of beneficiaries is measured in months as the period between the date of loan disbursement and the agreed final date of repayment
Gop = Government policy is qualitatively measured as change or not change (dummy; change=1; no change=0)
Inc = Income of loan Beneficiaries is measured in naira as total sales of total farm output
Fex = Years of farming experience is measured in years as number of years which the beneficiaries spent in farming activities
Los = Loan size is measured in naira as the total amount of money which the beneficiaries obtained from banks for farming
Dis = Distance between beneficiaries and banks is measured in kilometer as the space between the beneficiaries' residents and the bank offices.
Avi = Average interest rate paid by beneficiaries is measured in percentage. This is the total interest rates paid by the beneficiaries divided by the total number of time the interest rate changes during the course of the loan.

Table 1. The Variance Inflation factors (VIF) and Tolerance factor test results for the collinearity of explanatory variables used in the model specified in equation 2.

Variable	Variance Inflating Factor	Tolerance factor
Age	1.120	0.893
Sex	1.076	0.929
Dependency level	1.328	0.753
Health	1.248	0.801
Educational status	1.966	0.509
Other loan	1.179	0.848
Visit by officers	1.376	0.727
Primary occupation	1.414	0.707
Total farm cost	3.787	0.128
Time lapse	1.346	0.743
Loan duration	2.997	0.334
Government policy	1.367	0.732
Farm income	1.143	0.875
Years of experience	1.383	0.723
Loan size	1.291	0.775
Distance from bank	1.237	0.808
Av.interest rate paid	1.065	0.939

Source: Computed by authors. Note: for the variance inflating factor (VIF), the minimum possible value is 1.0; while value greater than 10 indicates a probably collinearity problem. Low tolerance factor implies high probability of collinearity.

Test for multicollinearity among explanatory Variables Used in the Model

Multi-collinearity problem is peculiar to cross sectional data analysis. This property of econometric was tested among explanatory variables to ensure the econometric stability or minimal variance of the Tobit model estimates. The variance inflating factor (VIF) and the tolerance factor (TOL) were estimated and used to test for the presence of the multicollinearity among the explanatory variables. For VIF, the minimum possible value is 1.0; while value greater than 10 indicates a probably collinearity between the explanatory variable in question and the rest of the predictors in the model. VIF was estimated using the formula stated below:

$$VIF_j = \{1/1 - R_j^2\} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

Where R_j^2 is the multiple correlation coefficient between variable X_j (one of the independent variable) and the other specified explanatory variables X_i^s as shown in equation 3.

$$X_j = \varphi_0 + \varphi_1 X_1 + \varphi_2 X_2 + \dots, +\varphi_n X_n + \varepsilon_n \dots\dots\dots (4)$$

On the other hand, tolerance (TOL) is an inverse of VIF (i.e. $TOL_j = 1/VIF_j$). A small tolerance value indicates that the variable under consideration is almost a perfect linear combination of other independent variables in the equation and that it should not be added to the specified

regression equation. In other words; when $R_j^2 = 1$ (i.e. perfect collinearity), TOLj = 0 and when $R_j^2 = 0$, (i.e. no collinearity), TOLj will be equal to 1. Hence, both VIF_j and TOLj can be used interchangeably (Gujarati and Dawn, 2009).

RESULTS AND DISCUSSION

Test Result for Multicollinearity among Specified Variables in the Model

Table 1 presents the Variance Inflating Factors (VIF) and Tolerance (TOL) test results for the multi-collinearity status of the explanatory variables used in the Tobit's model. The result revealed that the problem of multi-collinearity in the data set could be tolerated and would not pose a serious problem since it has not exceeded the threshold point. This means that the VIF has not reached the 10th point mark; on the other hand, the tolerance factor is above 0.1 point mark for all the explanatory variables in the model. The result implies that the estimates of the Tobit model were non-biased and were consistent with minimal variance.

Summary Statistics

The summary statistics of variables used in the analysis is presented in Table 2. The result revealed that, the ave-

Table 2. Summary statistics of variables used in the analysis.

Variable	Nature of variable	Minimum	Maximum	Mean	Standard deviation	Coefficient of Variation
Age	Continuous	30.00	70.00	42.982	7.599	0.177
Sex	Dummy	0.00	1.00	0.633	0.484	0.765
Fad	Continuous	1.00	11.00	6.422	1.652	0.257
Hed	Dummy	0.00	1.00	0.743	0.439	0.591
Edu	Continuous	6.00	15.00	10.459	3.523	0.337
Loa	Dummy	0.00	1.00	0.037	0.189	5.147
Vcr	Dummy	0.00	1.00	0.771	0.422	0.548
Poc	Dummy	0.00	1.00	0.303	0.462	1.524
Tfc	Continuous	12000	1.200e+06	89073.4	153853	1.727
Tlo	Continuous	2.00	24.00	7.404	3.408	0.460
Lod	Continuous	12.00	24.00	12.275	1.502	0.122
Gop	Dummy	0.00	1.00	0.889	0.314	0.353
Inc	Continuous	8000	1.00e+06	65078.4	117660	1.808
Fex	Continuous	4.00	30.00	12.982	4.163	0.321
Los	Continuous	9250	500000	61939.9	90226.4	1.457
Dis	Continuous	1.00	60.00	11.165	10.524	0.943
Avi	Continuous	22.00	32.00	26.650	3.142	0.118

Source: Computed by authors, 2014. Note, unit of variables are as defined in equations 1. Total number of sample is 109.

rage age of beneficiaries was about 30 years with a standard deviation of 7.599 years. This implies that, most of the beneficiaries were youthful in age. Also an average formal education attainment of ten years was discovered among the beneficiaries. This means that, majority of respondents were literate. The mean total farm cost of loan beneficiaries stood at ₦1.20000e+006 with a corresponding standard deviation of ₦1.7272. The result indicates that, the cost of farm production in the study area was high, and this could constitute a serious hindrance to loan repayment plan among the beneficiaries. The average farming experience was approximately 13 years with a standard deviation of 4.163 years and coefficient of variability of 0.321. This implies that the farming experience varied moderately among respondents.

The minimum and average farm incomes recorded among beneficiaries were about ₦8000 and ₦65078.40 respectively. Given the distribution of farm income among the respondents, it seemed that farm income was highly skewed among beneficiaries of ACGS in Akwa Ibom State. The average loan acquired by beneficiaries in the study area was about ₦61939.9 and maximum of ₦5000, 000 with 146% of coefficient of variability. This means that, loan distribution among respondents was highly skewed with few farmers obtaining up to ₦500, 000.

Tobit Regression Result

Table 3 presents the estimates of the Tobit regression.

The result of the Tobit model shows that 12 explanatory variables are significant at various levels of probability. These significant variables includes: age of ACGS loan beneficiaries, family dependency level, total farm cost, farm income, other loan scheme, visits by officers, time interval between loan application and drawdown, loan duration, government policies, years of experience, loan size as well as average interest rate paid.

These significant explanatory variables were the identified factors that influence default in loan repayment among ACGS beneficiaries in the study area. The sign of coefficient of the age of ACGS beneficiaries did not conform to our *priori* expectation but it was statistically significant at 1%. This positive relationship showed that there existed a direct relationship between probability of default in loan repayment and the age of the beneficiaries. Oni *et al.* (2005) and Eze and Ibekwe (2007) reported similar result in Nigeria. The slope coefficient of sex of the ACGS loan beneficiaries had inverse relationship with default in loan repayment among ACGS loan beneficiaries. This showed that, female beneficiaries were more prone to default in government's loan scheme repayment than female. This might be associated with the inability of female beneficiaries to provide adequate title to landed property. Also, increase in family responsibility could result in diversion of the loan to augment family expenditures in areas such as: school fees, consumption expenditure, health issues among others. These non- collateral loans which female beneficiaries were exposed to tended to increase among

Table 3. Tobit Estimates of Factors Affecting ACGS Loan Default in Akwa Ibom State.

Variables	Coefficient	Standard Error	Weighted Gradient/slope	t –value
Age	0.06388	0.01266	1.93E-18	5.04***
Sex	-0.55055	1.11813	-2.46E-16	-0.49
Dependency level	0.48950	0.22812	7.87E-18	2.14**
Health	0.67946	1.32906	4.34E-17	0.51
Educational status	0.06174	0.20789	3.12E-17	0.30
Other loan	-0.69123	0.21354	-9.52E-15	-3.23***
Visit by officers	-1.97153	1.13493	-3.36E-16	-1.74*
Primary occupation	0.99870	1.35224	6.90E-16	0.74
Total farm cost	0.42877	0.11466	1.16E-23	3.74***
Time lapse	0.73882	0.17767	1.17E-19	4.15***
Loan duration	-0.86470	0.40207	-2.33E-18	-2.15**
Government policy	-3.15182	1.64205	-3.30E-17	-1.92*
Farm income	-3.52488	1.73571	-2.47E-24	-2.03**
Years of experience	-0.21174	0.11806	-6.19E-20	-1.79*
Loan size	-0.13167	0.05746	-6.12E-25	-2.37**
Distance from bank	0.00326	0.05514	6.66E-21	0.06
Av.interest rate paid	0.31012	0.17158	2.38E-21	1.81*
Constant	-9.15926	9.49136	-	-0.97
Mean dependent var	1.578221	S.D. dependent var	6.001275	
S.E. of regression	6.024249	Akaike info criterion	6.540141	
Sum squared resid	3302.533	Schwarz criterion	7.009275	
Log likelihood	-337.4377	Hannan-Quinn criter.	6.730392	
Avg. log likelihood	-3.095759			

Note: Asterisks *, ** and *** represent 10%, 5% and 1% significance levels respectively. Variables are as defined in equation (1).

them, the probability of default in loan repayment. This finding was in tandem with the research report of (Udoh, 2008) in Nigeria.

Family dependency level had a positive coefficient and was significant at 5% probability level. It had a positive sign. This indicated that respondent with high family's dependency level had more probability of default in government loan repayment. This variable tended to enhance credit risk among beneficiaries, especially in developing countries. This was usually associated with high domestic expenditures in maintaining large family sizes. Children and relations or house helpers must be fed, clothed and accommodated. These involved huge variable cost especially during high inflation period. Given the limited incomes of the loan beneficiaries in the study area, increased family budgets would imply greater probability of default in loan repayment. The finding was in consonance with the report of (Eze and Ibekwe, 2007; Ugbomeh, 2008 and Udoh, 2008) in Nigeria.

The estimate for total farm cost of the beneficiaries was significant and carried a positive sign at 1% probability level. It could be deduced that increased total farm cost would increase the beneficiaries' probability to default in their loan repayments. The positive relationship between the probability of default in loan repayment and total farm cost showed that given the fluctuating farm input prices in the economy beneficiaries operated under high cost of production. With concomitant low total revenue generated from these farms, these beneficiaries might face serious financial dilemma. Without good returns from farms, entrepreneurs could not realize enough income to repay the principal loans and their accrued interests. But ACGS loans obtained by the beneficiaries must be repaid with compounded interests. These increased the financial commitments of the beneficiaries. Farm productivity among these beneficiaries was low. In this perspective, the marginal value product of what they produce was lower than the marginal input cost of production. Udoh (2008) had reported similar result in Nigeria.

However, the estimate in respect of beneficiaries' farm income showed a negative coefficient and was significant at 5% probability level. With improved farm productivity due to adoption of improved technologies, farm output would increase giving rise to higher farm income leading to increase in net farm profits. This would reduce the probability of default in loan repayment by the beneficiaries.

The estimates for other loan schemes and visits by credit officers for monitoring and evaluation purposes showed a negative signs and were significant at 5% signi-

ficant level. These coincided with our *a priori* expectations. This inverse relationship as regards other loan schemes showed that the more credit schemes/outlets enjoyed by the beneficiaries the lower the probability of default in loan repayment. It might be that beneficiaries with more access to multiple credit schemes/outlets could use funds from one scheme and repay debts in other schemes or could accumulatively increase farm income and profit simultaneously. More so, with the good repayment capacity in other loan schemes, the probability of default in loan repayment would be low. Project monitoring and evaluation in credit administration was effective in loan recovery strategies. For our study, the probability of default would decrease because of the visit by credit officers. ACGS loans disbursed without monitoring visits by the officers might be as good as investing in an unproductive venture. Loan beneficiaries must be visited to ensure that loans were judiciously utilized for the intended purposes. Monitoring of projects ensured that activities were closely watched and reported upon to identify problems at the implementation stage and offer remedial actions to avert loan default. Close follow-up visits could contribute to reduce ACGS loan default risk; though the high cost of agricultural lending persisted due to high cost of transportation associated with disperse beneficiaries' locations in the study area. This result agreed with the findings of Okorie, (1986) and (Udoh, 2008) in Nigeria.

The estimate for loan duration was negative and significant at 5% probability level. The estimate showed that the probability of default on loan repayment would decrease given longer loan duration. Udoh (2008) also obtained this result in Nigeria.

The study estimate also showed that the coefficient on government policies was negative and significant at 5% significant level. This implied that changes in government policies namely input-based incentives would reduce the probability of default in loan repayment due to lower average cost of farm production.

The estimate on loan size and years of farming experience were negative and significant at 5% probability level. The indirect relationship showed that the probability of default in loan repayment would reduce with the increase in loan size and years in farming experience. Oladeebo and Oladeebo (2008) in Nigeria; Kohansal and Mansoori (2009) in Iran; and Awunyo-Vito (2012) in Ghana have reported similar findings.

The average interest rate paid by the loan beneficiary influenced level of default in repayment. The estimate showed a positive relationship and it is significant at 5% significant level. This finding seemed to contradict earlier finding by Oni et al (2005). In their analysis of factors influencing default among poultry farmers in Ogun State using probit model, interest rate paid by the farmers was found to have a negative coefficient but was not statistically significant. However, Okuneye *et al* (1995) pointed out that low interest rate would have dual effects on lending. Low interest rate may create disincentive among providers of funds; while high interest or uneconomic rate might be disincentive to borrowers of funds. Low interest rates paid by ACGS beneficiaries boosted farmers' willingness to participate in the Scheme. On the other hand high interest rate could lead to high project cost and marginal project would go under. This adversely might affect the viability of the projects. But high interest rate charged by the banks were reflections of the high cost of funds, high cost of business and general inflationary rate in the economy. This collectively affected farm profits.

The estimate for the time between loan application and draw down was positive and statistically significant at 5% significant level. This implied that default in loan repayment by the ACGS beneficiaries is directly related to the time between loan application and draw down. The more time lapse between loan application and drawdown, the greater the probability of default in loan repayment. Conversely, the result implied that the less time lapse between the interval in the processed loan application and drawdown, the lower the probability of default in repayment. This finding supported earlier study by Oni *et al.* (2005), in their study, time lapse between loan applications and disbursement was found to be positive and statistically significant factor influencing default in loan repayment. This study deduced that there might be high probability of default whenever loans would be disbursed later than necessary. Timely processing of loan applications by bank credit officers for approval and drawdown by beneficiaries would facilitate efficient loan recovery and encourage more injection of funds for investment in agricultural projects. Udoh (2008) in Nigeria and Awunyo-Vito (2012) in Ghana shared similar view.

SUMMARY AND CONCLUSION

This study analyzed the incidence and magnitude of default in loan repayment among ACGS loan beneficiaries in Akwa Ibom State from 1991-2005. Factors influencing the probability of loan default in ACGS loan repayment were identified. Empirical evidence based on the tobit regression estimates showed that some factors namely; age of beneficiaries, family dependency level, total farm cost, total farm income of beneficiaries, time interval between loan application and drawdown, loan duration, government policies, years of farming experience, loan size, other loan schemes, visits by credit officers and the average interest rate paid by the beneficiaries were identified as major factors that influenced default in loan repayment among ACGS beneficiaries in the study area. Based on the above findings, the following recommendations were made. Appropriate policies should be directed towards farmers' re-orientation with regards bank loans. Efforts should be directed towards promoting a good credit culture and dis-

cipline through client education and moral persuasion. More awareness on the usefulness of interest drawback scheme should be carried out intensively in the study area. Government policies that would favor farm cost reduction should be encouraged. More professional agricultural specialists with diverse skills in financing farm businesses should be employed and trained by banks. These would ensure efficient loan appraisal, monitoring of projects/customers and debt recoveries thereby militating against banks credit risks.

REFERENCES

Abbot JC, Makeham JP (1979). Agricultural Economics and Marketing in the Tropics; Longman, London pp. 148-151.

Adegeye AJ, Dittoh JS (1985). Essentials of Agricultural Economics. Impact Ibadan, Nigeria; pp. 150-164.

Awunyo-Vitor D (2012). Determinants of loan repayment default among farmers in Ghana. J. Dev. Agric. Econs. 4(13): 339-345.

Balogun ED, Alimi A (1988). Loan Delinquency among small farmers in Developing Countries: A Case Study of the Small-farmers Credit Programme in Lagos State, Nigeria. Econ. Financ. Rev., 26(3): 36-44.

Central Bank of Nigeria (2000). The Changing Structure of the Nigerian Economy and the Implications for Development in Nigeria. CBN Abuja: pp. 31 – 60.

Chirwa EA (1997). An econometric analysis of determinants of agricultural credit payment in Malawi. Afri. Rev. Finan. Banking, 1997, 1(2): 107-122.

Eze CC, Ibekwe UC (2007). Determinants of Loan Repayment under the Indigenous Financial System in Southeast, Nigeria. J. Soc. Sci. 2(2): 116-120.

Gujarat ND, Dawn CP (2009). Basic Econometric. McGraw-Hill international edition. Singapore.

Igben MS, Eyo EO (2002). Agricultural Economics: An Introduction to Basic Concepts And Principles. Bestprints Business Press, Uyo, Akwaibom State, Nigeria. pp. 186-193.

Kohansal MR, Mansoori H (2009). Factors Affecting Loan Repayment Performance of Farmers in Kharasan-Razavi Province of Iran. A Paper Presented in a Conference on International Research on Food Security. Natural Resource Management and Rural Development, University of Hamburg, October 6-8, 2009.

Mashatola MC, Darroch MA (2003). Factors Affecting the Loan status of Sugarcane Farmers Using a Graduated Mortgage Loan Repayment Scheme in KwaZulu-Natal. Agrekon, 42(4): 353-365.

Okorie A (1986). "Major Determinants of Agricultural Smallholder's Repayments in a Developing Economy: Empirical Evidence from Ondo State" Agricultural Administration 21: 37–45.

Okuneye PA, Afolami CA, Momoh S (1995). Stimulating Growth in Agricultural Lending through the Agricultural Credit Guarantee Scheme fund (ACGSF). Proceedings of CBN Annual Conference of the Agricultural Credit Officers, held at Abeokuta.

Oladeebo JO, Oladeebo OE (2008). Determinants of Loan Repayment among Smallholder Farmers in Ogbomoso Agricultural Zone of Oyo State, Nigeria. J. Soc. Sci.17(1): 59-62.

Oni OA, Oladele OI, Oyowole Ik (2005). "Analysis of Factors Influencing Loan Defaults among Poultry Farmers in Ogun State." Journal of Central European Agriculture 6(4): 619-624.

Udegbunam RI (2001). Examining the Internal Factors Determining the Disparity in Loan Performance across the Commercial Banks in Nigeria. CBN Econ. Finan. Rev. 39(2): 92-116.

Udoh EJ (2008). Estimation of loan default among beneficiaries of a state Government owned agricultural loan scheme, Nigeria. Journal of Central European Agriculture; 9(2): 343-352.

Ugbomeh GM, Achoja M, Ideh FO, Ofuoku AU (2008). Determinants of loan repayment performance among women self help groups in Bayelsa State, Nigeria. Agriculturae Conspectus Scientificus; 73(3): 189-195.