Default Risk Analysis of a Small-Scale Agricultural Loan Scheme in Nigeria

J.O. Ajetomobi and S.O. Binuomote
Department of Agricultural Economics and Extension,
Ladoke Akintola University of Technology, P.M.B. 4000, Ogbomoso, Nigeria

Abstract: In this study, the rationale behind and determinants of default risk premium in First Bank Of Nigeria Plc's agricultural loan scheme were investigated for three enterprises-arable farming, poultry and fisheries. The results showed that delay in loan disbursement, prolonged drought and unexpected family expenses were principal reasons for loan default. The regression results indicated that inverse relationship exists between default risk premium and amount of loan disbursed for arable and poultry farmers. As expected a priori, a high interest rate was found to be associated with high default risk in arable farming but insignificant in the case of poultry and fishery enterprises.

Key words: Default risk, small-scale loan, first bank, Nigeria

INTRODUCTION

Risk faced by banks can be categorized into three, namely: Default risk, which arises when borrowers cannot repay their loans and accrued interest, liquidity risk, which is from uncertainty about bank's ability to maintain funds to meet customer's loan demands and interest rate risk, which refers to the hazards of refinancing loans at interest rate above the rate received (Armah and Park, 1998). Of the three categories, the most limiting in commercial agricultural loan scheme is the default risk. Two primary consideration of commercial banks in making farm loans are:

- Service to borrowers
- Default risk involved in making loans (Nelson and Murray 1967, Oluwasanmi and Alao, 1964 and Ajetomobi and Ajobo, 2001).

Hence farmers need to become more judicious users of borrowed funds while banks should be keener in analyzing credit worthiness of potential clients.

Research evidence on the contrasting views has led to the conclusion that commercial banks are not keenly interested in financing agriculture (Lee and Baker, 1984; Okorie, 1988). The commercial banks on the other hand argue that the farmers and governments have not provided a default risk-reducing environment to enhance lending (Kohl, 1989). There is the need therefore for a thorough insight into the different dimension of default risk as a means of suggesting

some ways by which it could be reduced. It is for this reason that this research addressed the following questions:

- What are the rationales behind the default risk among farmers?
- Is default risk independent of the nature of enterprise financed?
- Do interest rate and amount of loan disbursed influence default rate?

First Bank of Nigeria Plc was selected as the case study because it has constituted a new way in Nigeria small-scale agricultural loan programme since 1984. It is one of the most consistent banks financing small-scale agriculture in the country and has a quite comprehensive approach to default risk management.

Default risk management strategies: Under the First Bank of Nigeria prudential guideline (First Bank,1998), the following strategies were recommended to guide against loan default:

i. The first default risk management method follows satisfaction of the bank with reasonableness of a borrowing proposal. The banker conducts an in-depth analysis of the risk he will be exposed to. The default risk in this sense refers to the possibility of loan loss; such a loan loss may take the form of a decrease in income, increase in expenses or reduction in assets.

Corresponding Author: J.O. Ajetomobi, Department of Agricultural Economics and Extension,
Ladoke Akintola University of Technology, P.M.B. 4000, Ogbomoso, Nigeria

ii. The bank maintains close contact with the borrower through regular visit to keep the obligation constantly before him. This would enable the banker to make on the spot assessment of the condition of the farmer and elicit the borrower's response.

iii. The bank makes provisions on its total asset portfolio. The general provision involves a 1% obligation while the specific provision involves 10, 5 or 100% depending on the status or debt classification.

iv. It maintains proper security for documentation that was done initially. This is an area where the bank calls for sound technical and legal knowledge.

v. It appoints a receiver to monitor the borrower for repayment.

vi. The last step usually taken by the bank is litigation. This is usually preceded by the dispatch of a solicitor's letter of demand. The borrower's means and realizable assets are identified. This could be subject to an attachment order by the court if a judgment is obtained.

vii. For facilities that come under Agricultural Credit Guarantee Scheme Fund, (ACGSF) the recovery strategies would also include:

a. Serving a notice of default on the apex bank, the Central Bank of Nigeria (C.B.N.)

b. Filing a default claim on C.B.N. The notice of default could come anywhere between steps (i) and (iv) while the default claims follow completion of steps (iv) to (vi). The ACGSF pays 75% of the amount in default after all security help have been realized.

MATERIALS AND METHODS

This empirical study utilized both secondary and primary data on the First Bank Small Scale Agricultural Loan Scheme and on individual loan recipient, respectively. The survey was undertaken in Ibadan covering three randomly selected branches of First Bank Nigeria Plc. Seventy farmers that obtained loan from the branches were randomly selected as the focal group for the study.

The secondary data, which covered loan size, proportion of loan repaid, loan administrative and transaction costs and interest rate spanned 10 years from 1991 to 2000. The primary data contained information on the farmers' socio-economic characteristics such as age, level of education, farm size, type of enterprise, amount of loan obtained, amount of loan repaid and so on.

The data collected were analyzed using conventional descriptive statistics and Ordinary Least Squares (OLS) regression technique. The descriptive was used to describe the socio-economic characteristics of the farmers and the rationales behind default risk among the farmers. The OLS regression method was used to estimate the relationship between default risk premium as the dependent variable and amount of loan disbursed and interest rate as the independent variables (Lee and Baker, 1984). The regression model utilized the secondary data. Symbolically,

$$r = f(X_1, X_2, \mu)$$

Where,
r is the default risk premium
X_1 is the amount of loan disbursed
X_2 is the interest rate on loan
μ is the error term.

The default risk premium(r) was obtained from the expression

$$r = \{(d/1-d)(1 + f + k)\} \text{ (Lee and Baker, 1984)}$$

Where,
d is the default rate (expressed in terms of principal loan)
f is the transaction cost
k is the administrative cost.

A priori, the independent variables were expected to have positive relationship with default risk premium.

RESULTS AND DISCUSSION

Socio-economic characteristics of the farmers: A summary of the socio-economic characteristics of the farmer is provided in Table 1. There were varieties of farmers from widely varying socio-economic background collecting loan from the selected branches of First Bank. The age of the farmers ranged between 20 and above 60 years with a mean of 41.6 years. Most of them were married and had been farming for an average of about 13 years. Just 2.9% of the farmers had no education while 51.4% had completed secondary school and 20% had completed a course or attended higher institution. More than 60% of he farmer had a family size that is greater than 5. About 40% of the farmers were poultry farmers, 28.6% were arable crop farmers while 15.7% were involved in fishery.

The demand for agricultural credit also cuts across social and economic boundaries. This is obvious from the size of loans and incomes of the borrowers. The income of the farmers ranged between N50000 and N300000 with an average of N185000. They borrowed between N5000 and N250000 with an average of N97750 annually.

Table 1: Socio-economic characteristics of the farmers

Variable	Value/%
Average age	41.6years
Proportion of farmers with primary education	25.7%
Proportion of farmers with secondary education	51.4%
Proportion of farmers with tertiary education	20.0%
Proportion of farmers that are full-time	65.7%
Proportion of farmers that are part-time	34.3%
Proportion of farmers that are married	85.7%
Proportion of farmers with <5 family size	35.7%
Proportion of farmers with >5 family size	64.3%
Average farm size	3.3 ha
Average year of family experience	13.1 years
Proportion of farmers that are involved in poultry production	40.0%
Proportion of farmers that are involved in arable farming	28.6%
Proportion of farmers that are involved in fishery	18.7%
Average income	N185, 000
Average loan size	N97, 750

Source: Field survey, 2005

Table 2: Rationales for loan default

Reason	Respondents (%)
Banker's habit	
High interest rate	36
Delay in loan disbursement	70
Communication gap between the bank and the farmers	54
Risk and uncertainty in agriculture	
Disease outbreak	36
Prolonged drought	21
Insufficiency supply of inputs	66
Theft of farm produce	50
Unforeseen exigencies	
School	61
Sickness	60
Litigation from other borrowing agencies	7
Miscellaneous	56

Source: Field survey, 2005

Table 3: Regression results

Variable	Arable	Poultry	Fishery
Linear equation			
Constant	-0.81	1.3	1.25
X_1	-0.28	-2.56	-2.32
	(-0.78)	(-1.63)	(-2.32)
X_2	2.31	0.11	0.94
	(1.44)	(0.56)	(0.93)
R^2	0.42	0.38	0.31
SE	1.16	5.89	2.98
F	2.52*	2.10*	0.88
Exponential equation			
Constant	0.01	0.29	0.22
X_1	-0.69*	-2.06	-0.19
	(-2.36)	(-1.63)	(-1.11)
X_2	2.77*	8.50	0.78
	(2.48)	(1.54)	(1.09)
R^2	0.47	0.37	0.31
SE	1.16	5.89	2.98
F	3.15*	2.02*	0.89
Power equation			
Constant	9.37	1.06	0.49
X_1	-5.68	-0.51	-2.10
	(-1.88)	(-1.84)	(-1.05)
X_2	4.87	0.47	0.20
	(1.98)	(1.65)	(1.01)
R^2	0.37	0.56	0.24

Source: Data analysis

Rationales behind loan default: In establishing rationale for the continuing existence of loan default, the farmers advanced several points summarized in Table 2. The reasons can be categorized into three, namely: bankers' habit, risk and uncertainties in Agriculture and unforeseen contingencies. In agreement with Adeyemo (1983); delay in loan disbursement was the most critical bankers' habit. Others include high interest rate and poor communication network between the farmers and the bankers. The most critical source of risk in Agriculture was prolonged drought. About two thirds of the respondents attributed their default to this reason. The unforeseen exigencies include sudden increase in farmers' children's school fees, sickness, litigation from other lending agencies and miscellaneous reasons such as flood, armed robbery attack and demands from other lending agencies such as cooperatives, friends and relatives etc. The most critical was payment of school fees by 60% of the respondents. The results contradict the general belief in Nigeria that loan default is mainly caused by nonchalant attitude of farmers who regards bank's loan as national cake (Ajetomobi, 1989).

Regression results: The regression analysis results of factors influencing default risk in First Bank of Nigeria Plc Small Scale Agriculture Loan Scheme are presented in Table 3. Based on econometric criteria, exponential function form was chosen as the lead equation for arable crop enterprise while power function was chosen for fishery and poultry. For the arable crop enterprise, 47% of the variability in default risk premium was explained by amount of loan disbursed and interest rate. The estimated coefficient of the amount of loan disbursed was negative and significant at 5% level. This implies that the larger the loan size, the smaller the default risk premium. The result corroborates the earlier findings of Armah and Park (1998) that as farming becomes more capital intensive, good financial management becomes more crucial in the context of overall farm management. As the amount of loan disbursed increases, farmers become more sophisticated users of borrowed funds. On the contrary, the estimated coefficient of interest was positive and significant. Thus the higher the interest rate, the higher the risk of losing the money loaned as expected a priori.

In the case of poultry, the explanatory power of the power functional form was about 56%. The estimated coefficient of the amount disbursed was negative and significant at 5% level. This further underscores the importance of large credit size in increasing farmers' liquidity position as well as the farmers' strong reliance on liquidity management as loan size increases. The estimated coefficient of the interest rate was not significant.

In respect of fishery, the coefficient of determination was too low and insignificant for all functional forms specified. The explanatory variables bear no significant relationship with the default risk premium. This calls for the use of more methods that are sophisticated or a search for other explanatory variables.

CONCLUSION

This study examined the rationale behind default risk as well as its relationship with the amount of loan disbursed and interest rate for three major agricultural products financed through First Bank of Nigeria Plc Small-scale Agricultural Loan Scheme.

The results indicated that the principal reasons for default were delay in loan disbursement, prolonged drought and unexpected family problems. The regression results showed that the amount of loan disbursed to arable crop was inversely related to default risk while the interest rate had a direct relationship. For poultry, a similar result was obtained in respect of the relationship between default risk premium and amount of loan disbursed but interest rate was insignificant. The results in the case of fishery call for either the use of more sophisticated techniques or a search for other variables.

Based on the results, the following recommendations are suggested:

- The credit made available by the bank to arable crop and poultry farmers should be increased to a level that could enable them to purchase most of their productivity increasing inputs. The installment disbursements should however be tailored towards their farming operations and organization.
- Procedural difficulties causing delay in release of loan to farmers should be reviewed. This may necessitate the use of qualified and experienced staff for quick on-the-spot diagnostic survey of the farm plan and mode of loan payment.

REFERENCES

Adeyemo, R., 1983. Agricultural credit for small scale farmers in Nigeria. Trop. Agric., 60: 162-167.

Ajetomobi, J.O., 1989. Credit procurement and utilization by smallholder farmers under Agricultural Guarantee Scheme Funds (ACGSF) in two local governmnt areas of Lagos State, Nigeria. Undergraduate thesis. Obafemi Awolowo University, Ile Ife Nigeria.

Ajetomobi, O. and O. Ajobo, 2001. Risk and credit management in small scale agriculture in Nigeria: A case study. J. Rural Dev., 34: 79-86.

Armah, B. and T.A. Park, 1998. Agricultural bank efficiency and managerial risk preferences. Paper presented at American Economics Association Meeting. August 2-5: Salt Lake city Utah.

First Bank, 1998. Annual report and statement of accounts. First Bank Of Nigeria Plc Lagos Nigeria.

Kohl, D., 1989. The future of Agricultural Lending. Agricultural Finance, 31: 26-27.

Lee, W.F. and C.B. Baker, 1984. Agricultural risks and lender behaviour. In Risk management in Agriculture, (Ed.) Barry, P.J. Iowa State Unversty Press, Ames, Iowa.

Nelson, A.G. and W.G. Murray, 1967. Agricultural finance. Iowa State University Press, Ames Iowa.

Okorie, A., 1988. Management of Risks and Defaults in Agricultural Lending in Readings in Agricultural Finance, (Eds.) Ijere, M.O. and A. Okorie. Longman Nigeria Plc. Lagos.

Oluwasanmi, H.A. and J.A. Alao, 1964. Roles of credit in transformation of traditional agriculture: The Western Nigeria experience. J. Econ. Social Studies, 7:10-17.