Do Farm Lenders' Attitudes and Risk Assessment Models Encourage Organic Farms' Debt Aversion?

Ghangela L. Jones
Department of Agricultural and Applied Economics
University of Georgia, Athens, GA 30602-7509.
Email: gjone106@uga.edu

Hofner D. Rusiana
Department of Agricultural and Applied Economics
University of Georgia, Athens, GA 30602-7509.
Email: hrusiana@uga.edu

Cesar L. Escalante
Department of Agricultural and Applied Economics
University of Georgia, Athens, GA 30602-7509.
Email: cescalan@uga.edu

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Ghangela L. Jones, Hofner D. Rusiana, and Cesar L. Escalante
Department of Agricultural and Applied Economics, The University of Georgia

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BACKGROUND

The booming organic farming sector registered an accelerated pace of growth in recent years (Dimitri and Greene; Greene and Kremen). The rapid growth of organic markets, however, has overwhelmed organic farmers who were unable to match the pace of market expansion with increases in their farm production (Dimitri and Oberholtzer, 2009). The expansion and growth of the industry hinge on the availability of borrowed capital, among other options, to supplement existing funds to finance larger operating infrastructure and working capital requirements.

For small businesses like most organic farms, especially those in the early stages of operation, liquidity issues limit the availability of internal funds and hence the ability to be self-sufficient in financing capital and operating requirements. As a result, debt becomes the more practical option for raising capital. The problem, however, is that organic farm operators seem to be "highly debt averse."

- **The 2004 survey conducted by the nonprofit Center for Community Self-Help revealed that 56% of organic farmer respondents considered debt as not compatible with their sustainability principle while 45% suspected that lenders do not really understand their farms (The Carrot Project, 2008).**
- **Findings of a study conducted by the C.S. Mott Group for Sustainable Food Systems at Michigan State University indicate that the majority of organic farms rely on internally generated and personal funds to finance their operations. Moreover, certain farms, especially those in the start-up phase, have indicated that they have maximized their credit card debt to finance their business operating needs.**

RESEARCH OBJECTIVES

- **To validate the issues raised by organic farmers on their experiences in accessing regular farm credit. The lenders' actual lending patterns and experiences, in addition to their perceptions of organic farms, will be analyzed and compared with the farmers' perspectives.**
- **To identify issues that can be emphasized in efforts to bridge the gap between organic farmers and farm lenders with the ultimate goal of improving farmers' access to credit to realize the potentials of business expansion opportunities in such a dynamic, growing farm sector.**

RESEARCH METHODOLOGY

I. Data Source

This analysis used the results of a regional farm lenders' survey conducted by the University of Georgia in 2012 among lending officers of commercial banks, the Farm Credit System, and the Farm Service Agency in Georgia, Florida, Alabama, South Carolina, North Carolina, Mississippi, Louisiana, Kentucky, Arkansas, and Tennessee).

The survey instrument contained questions on issues raised in two focus group discussions with organic farmers from different parts of Georgia held at Fort Valley State University and University of Georgia in 2012.

- Majority of study's sample lending institutions are commercial banks (56.9%). The rest of the respondents consist of Farm Service Agency lending offices (35.4%) and lending associations under the Farm Credit System (7.7%).
- 32.2% of the survey participants had $100 million to $200 million in total assets during the fiscal year covered. On the other hand, 25.4% of the respondents had less than $100 million estimated asset.
- Majority of the participating institutions in the survey (87.7%) have been in the lending business for more than 20 years.

II. Analytical Model

This study employed two separate regression model to identify the significant determinants of farm lenders' attitudes towards their organic farming clients and the extent of their loan exposure to organic farm borrowers:

1. Probit model

$$z_i = \gamma_0 + \gamma_1 ST + \gamma_2 ATT + \mu_i$$

In this model, the dependent variable (z_i) takes a value of 1 for farm lenders that express interest in lending to organic farms and 0, if otherwise. Characteristics of lending institutions and their perception towards organic farms were used as independent variables in the model.

2. Backward Weighted Least Squares Regression

The lenders' extent of loan exposure has been analyzed using backward stepwise regression that initially considered all probable independent variables. Using a 20% variable significance retention rate, the model has been reduced to a version that involves only the important (relatively more significant) regressors. The general form of the original model is:

$$y_i = \beta_0 + \beta_1 ST + \beta_2 ATT + \beta_3 POL + \mu_i$$

In this model, the dependent variable (y_i) is the total amount of real estate and non-real estate loans granted by lenders to organic farm borrowers. The original list of independent variables include: ST which is a set of lenders' structural characteristics (such as measures of size of operations, years of lending experience, type of institution); ATT are dummy variables accounting for lenders' qualitative perceptions of organic farmers collected in the survey; and POL variables which capture lending policies such as the differentiation of credit scoring models for different types of borrowers, property appraisal approaches that affect valuation of organic farmland, and other specific credit risk assessment benchmarks.

Weighted least squares regression was adopted to remedy heteroskedasticity issues.

III. Econometric Results

	Probit Results	Backward Stepwise Regression Results
	Orglending 1	Orglnamt
Intercept	-1.212 (0.988)	77.312 (43.307)
CBLender	-2.801** (1.215)	
Assets	-0.117 (0.423)	-33.195** (13.387)
Yearsexp	0.022 (0.042)	
Farmloanspct	0.028 (0.018)	
Hobby	-0.0365 (0.232)	-13.599 (15.154)
Small_op	1.465** (0.644)	
Envhlthrnk	0.547** (0.255)	17.382 (14.040)
Findisadrnk	-0.0004 (0.164)	37.379*** (11.871)
Sustainable	-0.320* (0.179)	-36.608*** (13.282)
Divereffctdum	2.850*** (1.037)	237.519** (89.142)
Soileffctdum	-2.966** (1.178)	-222.256*** (81.584)
Creditscore	-4.007** (1.800)	-243.764* (130.107)
Orgcondum	2.153** (0.976)	
Orglngrwth		11.345** (4.810)
Orgsolvwght		9.275* (4.978)
Orgprofwght		-7.669* (4.157)
Orgfinefwght		-2.768 (2.741)
N	68	68
Log-likelihood	-15.263	
R^2		0.343

Numbers in parenthesis are standard errors.
*, **, *** denote significance at 10%, 5%, and 1% levels, respectively.

DISCUSSIONS AND CONCLUSIONS

LENDERS' INCLINATION TO LEND TO ORGANIC FARMS

- The results show that, relative to FSA and FCS lenders, commercial banks are less inclined to lend to organic farms.
- In terms of credit risk assessment practices, lending institutions that do not consider assigning some premium to farmers' soil enhancement investments are more likely to accommodate organic farmers' loan applications. In contrast, lenders that put a premium on the risk-reducing effects of enterprise diversification are more inclined to lend to organic farms. Moreover, institutions that employ a homogeneous credit scoring (or credit risk assessment) models for different types of borrowers are more likely to lend to organic farmers.
- Lenders that do not necessarily perceive organic farms as small as well as environmentally and health-conscious operations are likely to lend to organic farms. On the other hand, lenders that perceive organic farms as sustainable, self-reliant business operations are more inclined to lend to organic farms. In addition, lenders that recognize the significant differences of economic and production structures of organic and conventional farms have expressed interest in accommodating organic farms' loan applications.

EXTENT OF LENDERS' LOAN EXPOSURE TO ORGANIC FARMS

- Larger lenders (in terms of total assets) tend to lend less to organic farm borrowers.
- Lenders that do not assign a special premium on farmers' soil enhancement investments of farmers tend to extend larger loans to organic farmers The same result applies to those that do not implement separate credit scoring models for organic and conventional farms.
- Lenders that recognize organic farms as sustainable, self-reliant business operations tend to provide higher loan amounts to organic farm borrowers. Lenders who consider product/enterprise diversification as risk-mitigating (credit risk-reducing effect), which is a primary characteristic of organic farms, provide higher loans to organic farmers.
- Interestingly, lenders that assign higher weights for solvency and profitability ratios in their credit scoring models tend to grant higher loans to organic farm borrowers. Furthermore, the regression results show positive correlation between perception of organic farms as financially disadvantaged operations and the amount of loans granted by lenders to organic farm borrowers.

This study has produced important evidence on the determinants of lenders' differential treatments of organic and conventional farm borrowers. Results show that differences in qualitative perceptions of organic farmers and disparity in credit scoring models for different types of borrowers, property appraisal approaches that affect valuation of organic farmland, and other specific credit risk assessment benchmarks have effects on the chances of organic farm borrowers for both having their loan applications accommodated and subsequently approved by lenders. This study's results have underscored the need for lenders' better understanding of the organic farmers' operating structures and business potentials and consider the adoption of more appropriate credit risk assessment models that should more accurately capture the organic farms' credit risk conditions.

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