



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

In short

■ by Steven C. Blank and Brian H. Schmiesing

Farm credit: The new focus on risk

Despite a recent decline in interest rates, many farmers and ranchers are having difficulty obtaining business loans because a "credit crunch" is running its course in agriculture. This is a symptom of a new credit environment in which agricultural lenders do not view borrowers as just "farmers" anymore, but as producers of specific commodities which vary in profitability and riskiness. Farmers may use a new measure of risk relative to income—the probability of a loss in net income—to help decide which commodities to produce. The probability of a net income loss may also be used to support loan applications. Examples from California and Minnesota illustrate the importance of this measure of risk in farm and lending decisions.

The new credit environment

Banks are changing their credit evaluation process and tightening their credit standards. The farm financial crisis of the mid 1980s and the savings and loan crisis have both shown the risks to lenders of holding predominantly real estate loan portfolios. The result has been a shift from the common practice of lending on *equity* to the new emphasis on lending on *income*. Lenders no longer want to foreclose on a property and chance selling on a down market.

In spite of these concerns, money is still available to the agricultural sector. "There is no credit gap for creditworthy borrowers," Michael Grove, chairman of the Agricultural Bankers Division of the American Bankers Association, testified before the House Subcommittee on Conservation, Credit, and Rural Development. A creditworthy borrower, Grove said, is one "who has the ability to service debt, based on past performance and projected future profitability." The "ability to service debt" means that a borrower can pay all debts in a timely manner from the gross income generated by the business. The focus of credit analysis has shifted from a borrower's balance sheet to the income and cash flow statements.

In California, this shift in lender focus has led to increased emphasis on risk analysis. More specifically,

lenders want to use both the expected income and the volatility in incomes of individual crops in their credit scoring processes.

Assessing absolute risk

Net income data are summarized in the table for a cross section of crops from California and southwest Minnesota to illustrate the absolute risk in production. For California, data from two counties are presented to demonstrate income variability across locations.

The values shown are the probabilities of suffering a loss for each specific crop (the method used to compute the probabilities is shown in the article by Blank). For example, alfalfa hay producers in California's Fresno County have a 33.4 percent (one out of three) chance of losing money in any particular year, according to the historical data used in the analysis. Minnesota hay growers have only a 1.9 percent chance of losing money, even though they averaged about the same income per acre as did Fresno County growers. Minnesota hay incomes have been more stable around the mean, thus there is less chance of a loss. Unusual circumstances, like a drought, may raise the level of income risk (the probability of loss), but the absolute amount of increase is not predictable.

Normally, a grower should not produce any crop with a probability of loss of 50 percent or greater unless the grower expects better-than-average results. A probability of loss value of 50 percent indicates that, on average, growers made no money over the period. For example, oats in southwest Minnesota usually lose money (Southwest Technical College) with a probability of loss of 75.8 percent.

Assessing relative risk

Lenders are diversified across commodities and locations, so they are concerned with relative risks as well as absolute risks in making a loan to a particular grower. The probability of loss measure can also be used to assign a relative risk rating to each product market. In general, the method is to rank a product in two ways.

Steven C. Blank is a professor in the Department of Agricultural Economics, University of California, Davis; and Brian H. Schmiesing is a professor in the department of Hospitality, Marketing, and Agribusiness at Southwest State University, Marshall, Minnesota.

Crop/County	Net Income Mean	Prob of Loss	Crop/County	Net Income Mean	Prob of Loss
	(\$/acre)	(%)		(\$/acre)	(%)
California crops			California crops con't		
Alfalfa hay			Oranges		
Fresno	61	33.4	Fresno	911	6.9
Imperial	88	24.8	Imperial	566	21.2
Carrots			Peaches		
Monterey	1675	0.5	Fresno	1681	0.4
Riverside	233	44.8	Stanislaus	247	37.1
Cauliflower			Walnuts		
Santa Barbara	794	28.4	San Luis Obispo	262	42.1
San Luis Obispo	221	42.9	Stanislaus	297	32.3
Corn, Field			Watermelons		
Fresno	51	30.2	Kern	802	15.6
Yolo	147	13.8	Riverside	509	35.9
Grapes, Raisin			Southwest Minnesota Crops		
Fresno	209	35.2	Alfalfa hay	64	1.9
Stanislaus	230	40.1	Corn, Field	14	28.4
Lettuce			Oats	-10	75.8
Fresno	860	14.5	Soybeans	41	8.2
Monterey	545	18.4	Wheat, spring	-2	52.4
Onions, Processing					
Fresno	1935	4.3			
Imperial	470	30.2			

First, a product's risk is ranked according to its probability of loss relative to the entire list of crops grown in the local market. Second, all production regions for a single commodity are ranked according to probability of loss.

Ranking enterprises within a county or local market by probability of loss is a means of rating the riskiness of the grower's chosen enterprise versus alternatives available. For a lender this is a way to identify the lowest risk borrowers in a region. For example, the table lists a number of crops grown in Fresno County with peaches being ranked best in terms of probability of loss. This means that lenders concerned only with the risk of default will favor peach producers over other potential borrowers in the county. Producers of other crops may have more difficulty gaining loans or they may pay a higher interest rate than peach producers to compensate lenders for accepting the higher risk level.

Peach producers in other counties may not fare so well. The peach growers in Stanislaus County face a much riskier situation than that faced by Fresno County

peach growers. It is most likely that a lender deciding between potential borrowers in the two counties will choose to lend to Fresno growers first, based on probability of loss (0.4 percent versus 37.1 percent). These probability of loss differences also help explain differences in credit availability and interest rates across locations.

Implications of the credit crunch

The credit crunch is having a significant effect on many agricultural producers. Some people have not been able to borrow the amounts they had wanted, and interest rates are higher for some growers than others. Even though interest rates have generally trended down for two years, rates have not fallen equally and credit is not available to all producers. Differences in the probability of loss account for part of the credit crunch.

Although few lenders have completely withdrawn from the agricultural sector, large diversified lenders

continued on page 41

Farm credit: The new focus on risk, continued from page 29

have tightened loan requirements causing some borrowers to be dropped as customers. Some lenders are reevaluating their minimum levels of risk/return tradeoff for loans. This means that some agricultural producers must look elsewhere for operating capital.

To deal with tighter credit, individual growers may need to adjust their cropping plans. In Fresno County, for example, crops that are usually considered safe (because there is always a market for them or because the absolute size of potential dollar losses is small), such as alfalfa hay and field corn, are shown in our analysis to be less safe than some crops commonly considered "risky", lettuce for one. The probability of loss for

lettuce is 14.5 percent compared to 33.4 percent for hay and 30.2 percent for corn. Thus, Fresno growers with land suitable for lettuce could increase their profits and lower their risk by shifting from hay and corn into lettuce. Yet for the same reasons, lettuce growers in Monterey County may be better off shifting out of lettuce and into carrots.

The traditional midwest crops also vary in riskiness. These differences are particularly important because government programs now provide less income stability than in the past. To counter this loss, individual producers need to incorporate risk analysis into their crop selection process and loan applications. ■

■ For more information

Blank, Steven C. "Income Risk Varies With What You Grow, Where You Grow It." *California Agriculture* 46,5(1992): 14-16.

Southwest Technical College. *Farm Business Management Annual Report for Southwest Minnesota*, Marshall MN, various issues.