

Use the new Margin Protection Program to Manage your Financial Risk Exposure

Cameron Thraen and Christopher Wolf

The Ohio State University and Michigan State University

“There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.” [Donald Rumsfeld](#)

The objective of this paper is to help you think about the financial risk exposure for your dairy farm and the new 2014 Farm Bill Margin Protection Program **MPP** as a tool to help protect your business from the “unknown unknowns.” The new MPP provides an important new safety net for dairy farms that can help manage financial risk when the actual income over feed cost margin is below benchmark levels. This program is not free however and participation carries a financial cost. In this article we will help you think about your farm’s risk exposure and how, if at all, the MPP may be of use. We illustrate our key points by focusing on the important financial indicators for liquidity and solvency. We do so by drawing upon the farm financial records for two example dairy farms, using these to (1) illustrate the co-movement between the farm’s IOFC margin and MPP, and (2) highlight the financial risk implications for these farms.

Table 1 contains some key financial numbers used in this article. The summary data in Table 1 are drawn from reporting dairy farms in the Michigan Dairy Farm Business program for the years 2006 through 2013. Average values for two farm sizes are shown in Table 1.

Table 1. Example Dairy Farm Statistics

	Milk cows (Production cwt.)	Average 2006-2013 Milk Revenues Over Feed Cost (\$)	Average IOFC (\$/cwt)	Current Ratio	Debt-to-Asset Ratio
Leaders Dairy	161 (37,004)	\$239,647	\$6.47	1.04	0.31
Legends Dairy	324 (82,766)	\$560,326	\$6.77	2.10	.55

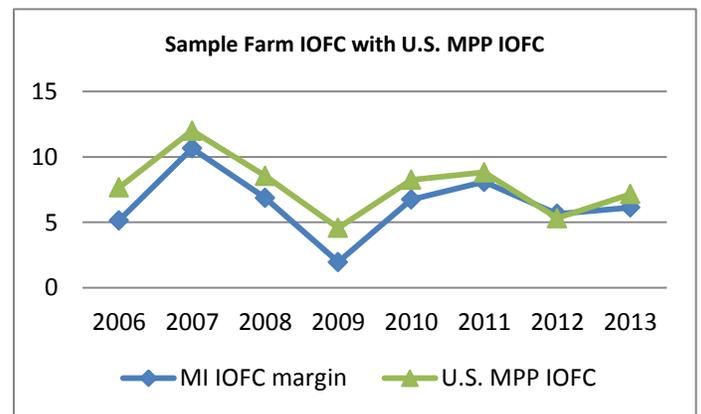
Constructed from Michigan Dairy Farm Business Summary annual data, 2006 - 2013

How does the MPP IOFC relate to my operation?

Let’s consider the relationship between your farm’s margin and the U.S. MPP margin. The U.S. MPP tracks

the average U.S. All Milk price and the U.S. average cash prices received for corn and alfalfa hay as reported by NASS, and AMS Central Illinois rail soybean meal price. Your farm’s margin and the U.S. MPP will not be the same but they will show a high degree of positive correlation. Figure 1 shows the longer term relationship between the U.S. MPP IOFC and IOFC calculated from sample dairy farms drawn from the Michigan Dairy Farm Business Analysis Summary database over the period 2006 to 2012. Note that over time the sample farms margin is below the U.S. MPP margin. The year 2012 appears to be an exception. This co-movement relationship can differ across regions and over time as well as across operations.

Your farm’s financial and feed records can assist you in examining your operation’s income over feed margin relationship to MPP margin. Recommended reading is the DG 14-10 in this series.



How do I determine my financial risk exposure to unanticipated ‘low’ IOFC margins?

If market prices, milk, feed or both, are such that your farm does not generate the anticipated IOFC margin, then the potential shortfall will have to come from selling assets or from increased liabilities or some

combination. Using 2009 as an example of a catastrophic year in which both milk price fell and feed prices increased, the U.S. MPP margin declined by 46%. The sample farms margin fell by 71%. The Leaders dairy experienced a \$167,628 reduction in IOFC while the Legends dairy a \$542,945 shortfall in IOFC. The year 2012 serves as an example where the milk price held steady but feed prices increased due to widespread drought, causing the U.S. MPP margin to decline by 39%. The sample farms margin fell by 30%. The Leaders dairy experienced a \$79,559 reduction in IOFC while the Legends dairy a \$337,685 shortfall in IOFC. Clearly unprotected financial outcomes like this will put severe stress on both farm liquidity and financial solvency.

How inadequate of a margin can your dairy farm business withstand?

Farm Liquidity

The starting point for assessing financial risk exposure to unanticipated reductions in IOFC is the liquidity position. Liquidity is reflected in the **Current Ratio (CR)** defined as current farm assets divided by current farm liabilities. Liquidity represents the ability to pay debts as they come due. The rule of thumb for the CR is to achieve a value of 2.0 or greater. Table 1 reveals that Leaders dairy had a tenuous liquidity position with a current ratio of 1.04. If the Leaders farm has unexpected high feed costs, low milk prices, or both, they may need to examine liquidating assets or obtaining an operating loan to meet expenses in the coming year.

Farm Solvency

Balance sheets are also used to calculate the farm's solvency position. The **Debt-to-Asset Ratio (DA)** is the total farm liabilities divided by the total farm assets. A larger DA ratio means that more of the farm asset value is owed to creditors. A DA ratio equal to 1.0 or greater indicates that the farm has no equity as the liabilities are equal to or greater than the asset value. Lenders examine the debt-to-asset ratio as a measure of financial solvency. Values of the DA ratio above 0.6 (or 60%) indicate increased financial risk. In the dairy farm business, the preferred DA is +0.4 or less.

The Leaders dairy had a solid DA ratio at +0.31 which indicated a solid equity position. This is good news if the operation's liquidity issue necessitates a short-term operating loan. Legends dairy, meanwhile, had a DA ratio of +0.55 which is higher than many lenders would like to see. In fact, if they need to borrow money because of financial stress, another year like 2009 or more likely 2012 would push the operation into the

danger zone with respect to solvency.

MPP: A government lottery or a risk management tool?

While it may seem like the new MPP is just a lottery where you pay your money and take your chances, the savvy dairy farm manager will view the new program as a powerful financial risk tool. While knowing your key financial indicators of liquidity - the Current Ratio, and Solvency - the Debt-to-Asset Ratio, does not help you select a specific combination of coverage percent and coverage level for U.S. MPP, knowing these numbers for your dairy farm will help you determine your vulnerability to financial risk. Using the U.S. MPP is one tool, that when properly applied, can help keep the farm on a strong financial footing in uncertain times, in anticipation of the Unknown Unknowns.

You can get additional MPP information at the <http://www.dairymarkets.org> website. If you have additional questions on anything discussed in this article please contact the authors at thraen.1@osu.edu or wolfch@msu.edu.

The DMaP Team includes Marin Bozic, University of Minnesota, Brian Gould, University of Wisconsin, John Newton, University of Illinois, Charles Nicholson, The Pennsylvania State University, Andrew Novakovic, Cornell University, Mark Stephenson, University of Wisconsin, Cameron Thraen, The Ohio State University, and Christopher Wolf, Michigan State University