DMaP
Dairy Markets and Policy[1]

Information Letter Series

A Summary of 2016 MPP-Dairy Participation and Payments for Pennsylvania Dairy Producers

Information Letter 16-02
September 2016

Chuck Nicholson and Mark Stephenson
Smeal College of Business, Penn State University and University of Wisconsin, Madison

MPP-Dairy Program Participation in 2016 for Pennsylvania was lower than the U.S. average, but 30% of farms and 50% of milk production were covered under the program. 80% of Pennsylvania farms chose 'catastrophic' coverage.

The MPP-Dairy Program was designed to provide protection against low margins for participating producers. As of mid-2016, dairy margins had reached a value below $6.00/cwt and the MPP-Dairy program was making payments, so a summary of participation and payments is appropriate.

Descriptive Summary of Participation

More than 2,200 Pennsylvania dairy farms signed-up for MPP-Dairy coverage for the 2016 calendar year (Table 1). This is slightly over 30% of Pennsylvania's 7,370 licensed dairy operations reported by the National Agricultural Statistics Service (NASS) in 2014. The "production history" covered under MPP-Dairy in 2016 is more than 50% of the state's 2015 milk production suggesting larger than average farms are enrolled. Previous analysts have noted that MPP-Dairy participation in Pennsylvania is lower than national averages and the sign-up data for 2016 (Table 1), are consistent with this. The number of farms who have paid premiums in the second tier (for protection above 4 million lbs) is quite small. However, considerable proportions of Pennsylvania's dairy farms and milk production have coverage under MPP-Dairy.

[1] The DMaP Team includes Marin Bozic, University of Minnesota, Brian Gould, University of Wisconsin, Charles Nicholson, The Pennsylvania State University, Andrew Novakovic, Cornell University, Mark Stephenson, University of Wisconsin and Christopher Wolf, Michigan State University.

MPP-Dairy allows producers to make coverage decisions about the margin level to be protected and the proportion of the farm's production history to be covered. In 2016, nearly 80% of participating Pennsylvania farms chose what the Farm Service Agency of USDA describes as "catastrophic coverage", which protects a margin of $4.00/cwt for 90% of a farm's production history (Table 2). Another 15% of participating Pennsylvania farms selected margin levels of $6.00/cwt and $6.50/cwt. Nearly all farms (97.5%) chose to cover 90% of their production history. The coverage elections based on milk quantities represented by production history (rather than number of farms) provide a similar pattern: more than 80% of milk production history elected "catastrophic" coverage (90% of production history covered at a $4.00 margin), with another 16% at the $6.00/cwt and $6.50/cwt margin coverage levels (Table 3). The similarities between summary statistics based on farm numbers and milk production history suggest that MPP-Dairy coverage elections did not vary a good deal by farm size. The high proportion of farms and production history electing catastrophic coverage suggests that an overwhelming majority of participating farmers intended to use MPP-Dairy coverage during 2016 to protect only against extremely low margin outcomes.

Descriptive Summary of MPP-Dairy Indemnity Payments to Pennsylvania Producers

The MPP-Dairy program began making payments in 2016 when the Actual Dairy Production Margin (ADPM) fell below $8.00/cwt during the program period of March and April. (The ADPM for January and February was 0.1 cent above the trigger, despite the fact that the February margin was below $8.00/cwt, so no payments were triggered during that two-month program period). Given that the ADPM value was $7.15/cwt in the March-April period and $5.76/cwt in the May-June period, only farms electing coverage at margin levels above those values would be eligible for indemnity payments. Given that 80% of Pennsylvania farmers elected $4.00/cwt margin coverage, relatively few of the state's producers have been eligible to receive payments during 2016 to date. For the March-April program period, 25 of the state's dairy producers (those who had elected margin coverage at the $7.50 and $8.00/cwt margin levels) received payments under MPP-Dairy, with payments totaling about $32,000 and averaging about $1,400 per participating farm (Table 4). For the May-June period, FSA reports that 369 Pennsylvania farms (those electing margin coverage at $6.00/cwt and above) received payments totaling just over $585,000, with an average payment of about $1,600/farm. Our estimates of MPP margins through the rest of 2016 suggest that there will not be additional payments at any level of coverage.

Discussion: Is MPP-Dairy "Effective"?

The combination of low margins during 2016 (low relative to average historical margins and particularly relative to the record margins in of 2014) and rather limited payouts under MPP-Dairy had led to a great deal of discussion about the effectiveness of MPP-Dairy—with many

commentators suggesting that the program is not effective and needs a major overhaul. However, the small proportion of Pennsylvania producers receiving a payment under MPP during January to June 2016 should not really be interpreted as evidence that the program is not appropriate or helpful. Five points help provide some perspective on the effectiveness of MPP-Dairy in the current margin environment.

First, MPP-Dairy differs from previous dairy support programs in that it emphasizes risk management and individual farm flexibility rather than industry-wide support. The effectiveness of any risk management strategy is most appropriately evaluated relative to producer objectives for its use. Often, greater price or margin certainty (rather than enhancement) is an objective of risk management, and MPP-Dairy as currently structured does provide greater certainty regarding the lowest margin that producers will experience, at a level they deem appropriate for their farm. The large proportion of Pennsylvania producers who elected 'catastrophic' coverage (about 80% of farms and production history) suggests that many farms were interested in low-cost protection against historically low margin outcomes. Although the MPP-Dairy margin has not reached the catastrophic level, the program as structured is providing protection against catastrophic outcomes for more than 1,700 Pennsylvania dairies, which may be consistent with producer objectives for the use of the program.

Second, outcomes under MPP-Dairy can also be compared to those that would have occurred under previous dairy programs, the Dairy Product Price Support Program (DPPSP) and the Milk Income Loss Contract (MILC) programs, during this same time period. Product prices for nonfat dry milk, cheese or butter have not fallen to levels that would have triggered government purchases, so the DPPSP would not have provided support in a year with margins like those experienced in 2016. The MILC program would have made minimal payments in the current margin environment. For the best possible scenario of a farm with an annual production of 2.4 mil lbs production and the selection of June as the initial payment month, payments under MILC during 2016 would have been about $0.016/cwt, or less than $400 per farm.

Third, MPP-Dairy program design was limited by the budgetary constraints imposed by Congress. Under the applicable procedural rules, any new program for dairy producers to replace DPPSP and MILC needed to show budget costs less than or equal to the projected costs of existing programs. This limit therefore had a significant impact on program design, including premium levels and the calculation of the program's margin. It is easy to envision program design changes to make MPP-Dairy provide additional support in a year like 2016, but these would likely increase the program's cost above what Congress intended to spend on dairy producer support programs.

Fourth, although 2016 is certainly a low profitability year and many farms entered this year with far fewer cash reserves or prepaid expenses than they did in 2015, 2016 margins are more of a 'downturn' than a 'disaster' for most farms. In mid-2016, margins are nearly at the same level as they were at this point in the previous price cycle (Figure 1), but we have not experienced the large number of months with margins below $6.00/cwt as occurred in 2012. Agricultural lenders generally report that although this is certainly a low-margin year for the producers they are working with, their overall dairy portfolio values continue to increase and there is not a significant deterioration in loan performance metrics. The MPP-Dairy program might be regarded as more 'successful' if current margins were much lower (like those in the previous cycle) and a higher proportion of farms were receiving (larger) payments, but producers would not really be better off financially because they would be receiving lower margins on at least 10% of their milk.

Finally, the net cost of MPP-Dairy program participation was generally low for Pennsylvania dairy farms in 2016. The net cost includes the $100 fee and premium payments less indemnity payments, and these include only payments made through June 2016, so future payments, although we don't expect any, would further lower the net cost. The average cost of risk management under MPP-Dairy for participating Pennsylvania farms was $0.01/cwt. Costs were less than $0.01/cwt for 62% of participating farms, and less than $0.05/cwt for 98% of participating farms (Figure 2). For over 160 participating farms (about 7% of the total) participation had a negative cost, that is, premiums paid were less than the value of indemnity payments received by producers. The average net cost varied by margin level covered (Figure 3), with increasing costs as margin coverage levels increased up to the $6.00/cwt margin for which indemnity payments were received. Median costs were negative for margins protected at the $6.00, $7.50 and $8.00/cwt levels, and all farms with coverage at the $8.00/cwt level received net benefits from the program. Although every penny per cwt matters in a low-margin year, the net costs of MPP-Dairy margin protection compare favorably with the costs of other risk management options.

Table 1. Summary of 2016 MPP-Dairy Participation, Pennsylvania and Total US

Participation Indicator	PA	US
Number of Operations Participating	2,225	25,966
Licensed Dairy Operations (NASS, 2014)	7,370	45,344
Percentage of 2014 Licensed Operations	30.2%	57.3%
Total Production History, bil lbs	5.6	180.0
Total Milk Production, 2015, bil lbs	10.8	208.6
Percentage of 2015 Milk Production	51.7%	86.3%
Farms paying second-tier premiums[a]	19	
Percentage of Licensed Operations paying second-tier premiums	2.7%	

[a] Based on analysis of sign-up data from 2,191 PA farms released under a Freedom of Information Act request, thus not official FSA data.

Table 2. Percentage of Pennsylvania Participating Farms by Margin Level and Proportion of Production History Covered, 2016[a]

Margin Level Covered	Proportion of Production History Covered												Row Total	PA Operations
	0.25	0.30	0.35	0.40	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90		
4.00													79.1	79.1	1,717
4.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	8
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	2.1	2.2	47
5.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.8	37
6.00	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.1	0.1	7.5	8.5	187
6.50	0.2	0.1	0.0	0.0	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.0	5.7	6.8	150
7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	7
7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5	0.7	16
8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	9
Column Total	0.3	0.1	0.0	0.0	0.3	0.2	0.4	0.1	0.1	0.4	0.3	0.2	97.5	100.0	2,178

[a] Values other than reported PA operations are based on analysis of sign-up data from 2,191 PA farms released under a Freedom of Information Act request, thus not official FSA data. Number of PA operations value are those reported by the Farm Service Agency (http://www.fsa.usda.gov/programs-and-services/Dairy-MPP/index)

Table 3. Percentage of Pennsylvania Production History by Margin Level and Proportion of Production History Covered, 2016[a]

Margin Level Covered	Proportion of Production History Covered												Row Total	PA PH, bil lbs
	0.25	0.30	0.35	0.40	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	
4.00													80.7	80.7	4.4
4.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0
5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.1	1.3	0.1
5.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.8	0.9	0.0
6.00	0.9	0.0	0.0	0.1	0.1	0.0	0.2	0.0	0.1	0.3	0.1	0.1	6.8	8.8	0.5
6.50	1.3	0.7	0.2	0.0	0.1	0.5	0.3	0.0	0.2	0.2	0.2	0.0	3.8	7.3	0.4
7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.5	0.0
8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.3	0.0
Column Total	2.2	0.7	0.2	0.1	0.2	0.5	0.6	0.2	0.3	0.7	0.3	0.2	93.9	100.0	5.5

[a] Values other than reported PA production history are based on analysis of sign-up data from 2,191 PA farms released under a Freedom of Information Act request, thus not official FSA data. Production history values are those reported by the Farm Service Agency (http://www.fsa.usda.gov/programs-and-services/Dairy-MPP/index)

Table 4. Summary of MPP-Dairy Payments to Pennsylvania Participating Farms through June 2016, by Margin Reporting Periods

Program Payment Characteristic	Reporting Period		
	January-February	March-April [a]	May-June
Total MPP-Dairy Payments, $000	0	32	586
Total Farms Receiving Payments	0	23	369
Average Payment per Farm, $	0	1,411	1,588

[a] Values for March and April are based on analysis of sign-up data from 2,191 PA farms released under a Freedom of Information Act request, thus not official FSA data. May-June values are those reported by the Farm Service Agency (http://www.fsa.usda.gov/programs-and-services/Dairy-MPP/index)

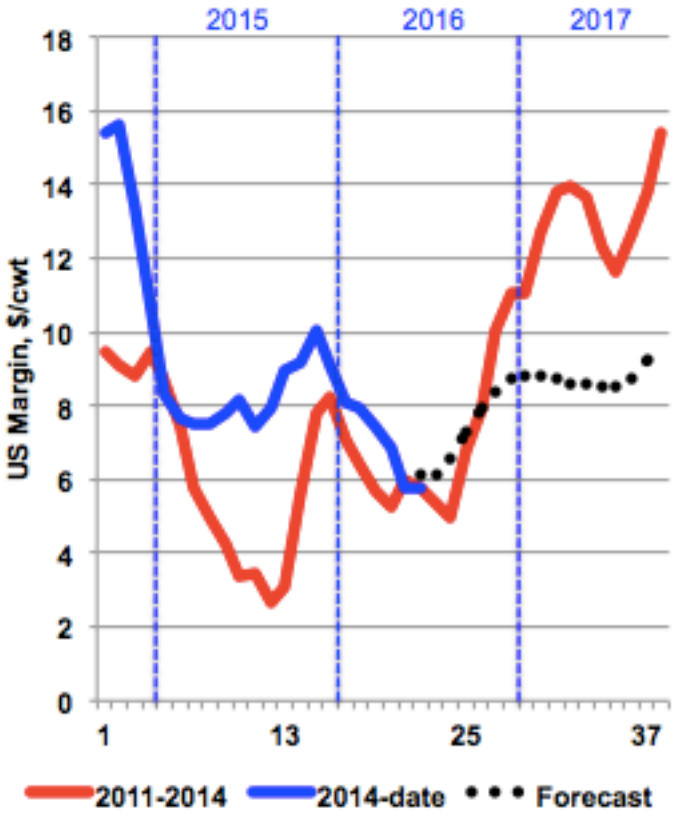

Figure 1. MPP-Dairy Margin for Previous Cycle (2011-2014; Red) and Current Cycle (2014-date; Blue), With Years Indicated for The Current Cycle

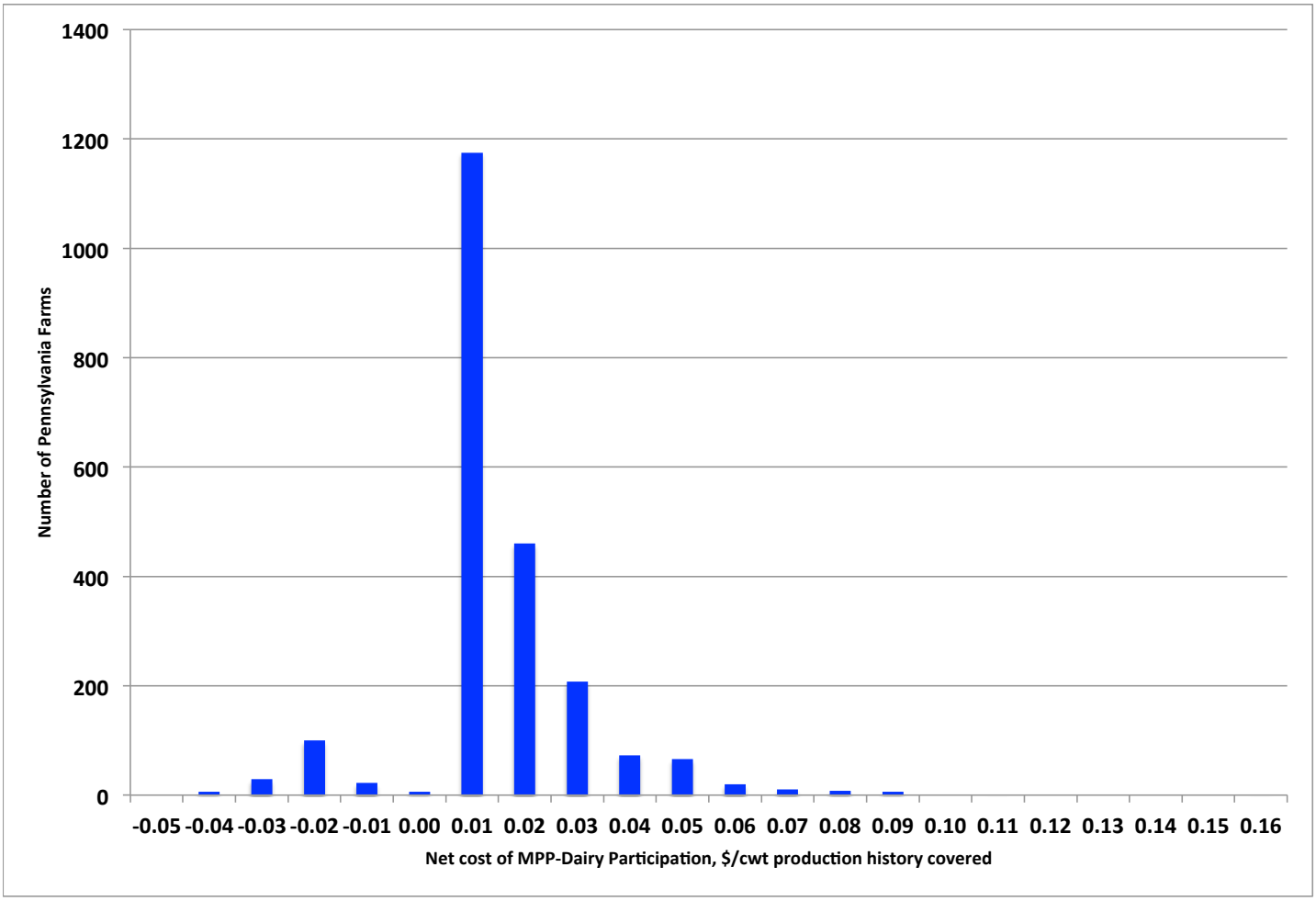

Figure 2. Distribution of Net Costs of MPP-Dairy Participation for Participating Pennsylvania Dairy Farms with Payments Through June 2016[a]

[a] Based on analysis of sign-up data from 2,191 PA farms released under a Freedom of Information Act request, thus not official FSA data.

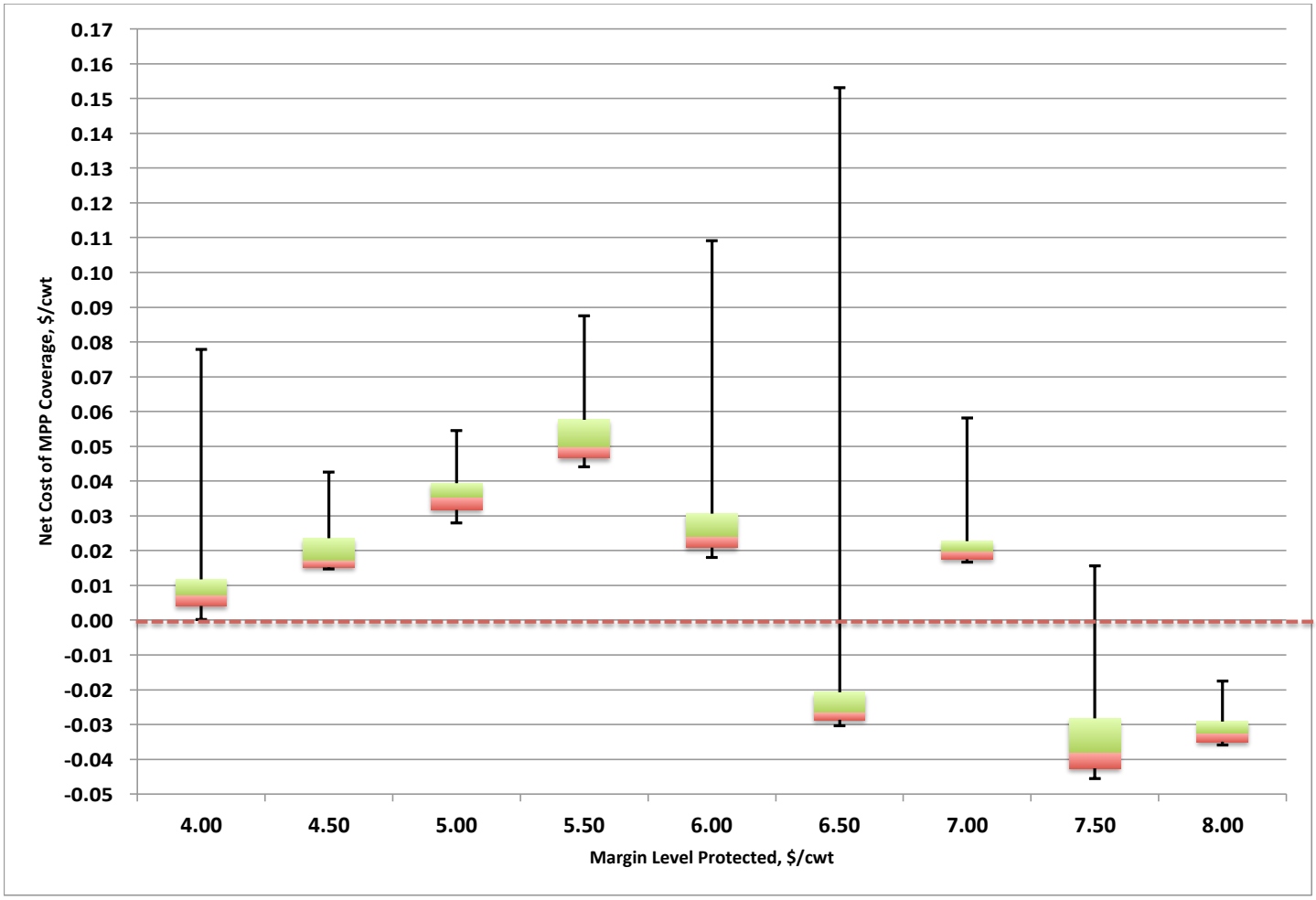

Figure 3. Distribution of Net Costs of MPP-Dairy Participation by Margin Level Elected Through June 2016, Indicating Minimum, Maximum, Middle 50% and Median Values [a]

[a] Based on analysis of sign-up data from 2,191 PA farms released under a Freedom of Information Act request, thus not official FSA data.