by Marin Bozic

# Could dairy margin insurance be as popular as crop insurance?

MORE than 85 percent of insurable U.S. farmland is protected under the federal crop insurance program. In contrast, this year less than one-third of the U.S. milk production was protected under any form of risk management program — that includes CME futures or options, LGM-Dairy or the MILC program. This situation coupled with high volatility in the dairy sector has prompted policymakers to consider substantial reforms and devise a new federal dairy safety net program popularly referred to as the Dairy Security Act (DSA).

The DSA creators hope the new programs will offer the kind of affordable protection to the dairy sector that crop producers have had for a long time under the federally subsidized crop insurance. That begs the question, should the DSA be passed in the farm bill, would we expect participation rates as high as crop insurance?

**Crop insurance compared to potential dairy coverage****

| Crop Revenue Protection | | Dairy Producer Margin Protection Program | | | | | |
|---|---|---|---|---|---|---|---|
| | | Coverage | | 2007-2013 average expected subsidies | | 2009 expected subsidies | |
| Coverage | Subsidy | ($) | As pct. of avg. margin* | 150 cows | 3,000 cows | 150 cows | 3,000 cows |
| 55% | 64% | $4.50 | 55% | 64% | 28% | 93% | 86% |
| 60% | 64% | $5.00 | 61% | 74% | 48% | 94% | 88% |
| 65% | 59% | $5.50 | 67% | 76% | 30% | 94% | 83% |
| 70% | 59% | $6.00 | 73% | 81% | 36% | 95% | 83% |
| 80% | 48% | $6.50 | 79% | 75% | 18% | 93% | 76% |
| 85% | 38% | $7.00 | 85% | 22% | -21% | 74% | 60% |
| N/A | N/A | $7.50 | 91% | 15% | -18% | 69% | 57% |
| N/A | N/A | $8.00 | 97% | -1% | -13% | 59% | 54% |

* Coverage as Percentage of Average Margin is calculated by dividing dollar margin coverage by the long-run average margin ($8.25), e.g. $7/$8.25 = 85%.
** The numbers presented are partially based on the doctoral dissertation by John Newton, under the supervision of Cameron Thraen at The Ohio State University. Calculations are based on Senate bill No. 954.

## Comparing dairy and crops

There are two main reasons why insurance programs are highly appealing to crop farmers. First, these insurance products cover production risk due to yield losses from droughts, hail or pests. Those risks would be hard to insure without the government programs. The other reason is that crop insurance premiums are heavily subsidized.

When comparing crops to dairy, the DSA does not protect your farm against animal health risks or other calamities that may reduce your milk production. It focuses instead on protecting your income over feed costs (IOFC) margin. We must therefore focus on comparing the DSA and the crop insurance subsidies.

For a direct comparison, let us focus on subsidies offered under the Revenue Protection (RP) crop insurance program and the proposed Dairy Producer Margin Protection Program (DPMPP). If you wish to protect your corn or soybean production under the RP, the premiums will be first calculated in such a way that they equal expected indemnity. Then a subsidy would be applied at a prespecified percentage rate.

For example, if you wish to protect 85 percent of your expected revenue, the subsidy will be 38 percent of whatever USDA Risk Management Agency deems to be a fair premium for your particular situation.

Under the DPMPP you can choose the supplemental margin insurance with the coverage level from $4.50 to $8 per hundredweight or cwt. Insurance premiums are specified in the bill and do not change over the life of the farm bill.

For example, $7 per cwt. coverage level is priced at 40 cents for the first 4 million pounds, and 62 cents for milk production above that threshold. To be able to compare the RP and the DPMPP, we can divide the dollar-valued milk margin coverage levels by the historical average margin of $8.25 per cwt. and express the result as a percentage. For example, we may think of $7 per cwt. coverage level as the DSA equivalent to 85 percent coverage level under the RP.

## Subsidies are countercyclical

The table compares subsidies between the dairy (DPMPP) and the crop (RP) programs. The average expected subsidies column looks at the average expected subsides over 2007 to 2013 assuming a producer chooses the same margin coverage level every year.

For a dairy producer with a 150-cow herd, the DPMPP premiums for 55 percent coverage ($4.50 per cwt.) carry the average expected subsidy of 64 percent, exactly the same as the RP programs. The premium for 85 percent coverage ($7 per cwt.) is subsidized at the average rate of 22 percent, which is less than the 38 percent for the RP. For very large farms (3,000 cows), average expected subsidies are considerably lower at 28 percent for $4.50 per cwt. and negative 21 percent for $7 per cwt.

At first pass, it seems that the DSA premiums for milk production in excess of 4 million pounds make for very modest subsidy levels for very large producers. That is a wrong conclusion. To understand why, let us compare 2007 and 2009 insurance years. Imagine that every year you have to inform the USDA by January 15 which margin coverage level you want to protect under the DPMPP. In a year as good as 2007, expected gross indemnity for $7 per cwt. may be as low as 10 cents. In a year as dire as 2009, expected gross indemnity for $7 per cwt. may be as high as $1.55. Same premium, but very different expected paybacks.

In 2009, you would have been able to buy for 62 cents the insurance that is expected to pay out $1.55. That is a subsidy of 60 percent. In 2007, not only is there no subsidy, but the 62 cents you would have to pay is 52 cents too expensive — the "subsidy" is negative.

We realize that the true DSA subsidies are induced not primarily by premium levels, but by enrollment timing . . . such as the ability to forecast what is coming. Seemingly low average subsidies are meaningless, as it might be optimal to buy high coverage when forecasted subsidies are high (the 2009-like scenario) and forfeit supplemental margin insurance when forecasted subsidies are low or negative (the 2007-like scenario).

Under the RP, actuarially fair premiums will differ from year to year, depending on the level of the risk in the market, but the subsidy will always be the same 38 percent. The DSA works just the other way around. Under the DSA the premiums always stay the same, but the expected subsidies go up in years with low margins. When needed the most, the newly proposed dairy margin insurance is much more generous than the crop revenue protection program.

## Bottom line

Rational dairy producers would likely find it beneficial to enroll and select supplemental margin coverage based on a combination of forecasted margins and their ability to sustain deep losses in case of unanticipated reduction in IOFC margins. If the U.S. dairy producers make their sign-up decisions using these criteria, we might see the DSA participation rates comparable to high crop insurance subscription rates.

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