Changes Are Coming to U.S. Dairy Policy

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Dairy farms have faced bouts of very low margins of milk prices over feed costs, and new subsidies propose to remedy that with insurance and, perhaps, supply management.

Towards the end of 2012, at the same time as the overall U.S. budget was set to drop over the "fiscal cliff," the dairy provisions of the 2008 farm law were set to expire. A nine-month extension of the 2008 law helped to avert the consequences of an impending "dairy cliff," that had focused U.S. lawmakers on what reversion to the 1949 farm law would mean for U.S. dairy markets.

After much legislative effort in the spring and early summer of 2013, Congress continues to debate new farm policy provisions and, as this article is being prepared in mid-August 2013, no one can really tell what dairy programs may emerge or when. Nonetheless, there seem to be significant areas of agreement and this article lays out the main dairy components of the House and Senate farm bills, with a focus on what policy changes might mean for California.

Elimination of Price Supports and MILC Payments

Both House and Senate versions of the new farm bill would eliminate long-standing elements of the current policy: the Dairy Price Support Program and the Milk Income Lost Contract (MILC).

Since 1949, Congress has directed USDA to purchase and store cheese, butter, and milk powder at government-set minimum prices in order to keep the farm price of milk from falling below what Congress considers acceptable. At times, the policy kept U.S. dairy product prices well above those that would clear the markets and USDA acquired significant quantities. In response to these taxpayer costs, Congress reduced USDA purchase prices in the early 1980s and support prices have continued to decline in inflation-adjusted terms.

Government purchase prices have typically been below market prices for more than two decades, but USDA has acquired dairy products periodically when market prices dipped. For example, program costs spiked to $2.5 billion in Fiscal Year 2003 and to $1.3 billion in Fiscal Year 2009, with a large percentage of purchases coming from California plants that produced non-fat dry milk and butter. Elimination of dairy price supports would allow lower U.S. prices of butter, powder, and cheese during the periods of large supply or weak demand.

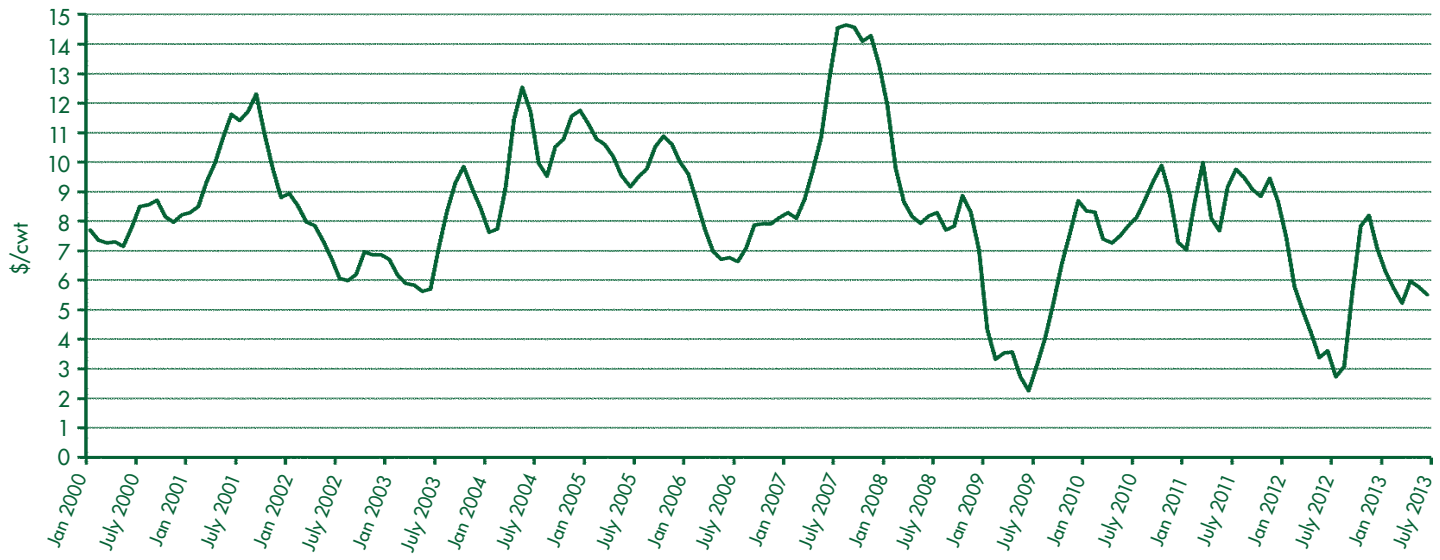
California's substantial manufacturing capacity in these commodities means that, if low prices were to recur, California producers and processors would be directly affected by the elimination of government purchases. Additionally, however, without government purchases, the California dairy industry would become a more reliable supplier in national and global markets. Most projections of dairy prices indicate that such low prices are likely to be extremely rare, so analysts expect only very small consequences from eliminating the dairy price support program.

The MILC subsidy was introduced in the 2000 farm bill, as a replacement for a milk price subsidy that had been active in the Northeast. MILC initially directed USDA payments to dairy farms whenever the price of milk fell below the government-set minimum price. Consistent with its roots in a region with small dairy farms, MILC limited the quantity of milk on which a farm could receive payments. The limit, of three million pounds per year (the annual output of approximately 140 average cows), tilted program benefits towards small farms that predominate in the East and Midwest.

In the early years, MILC outlays occasionally approached a billion dollars per year, but this program did not provide payments when the rise in feed costs squeezed dairy farmers. The 2008 farm bill adjusted the payment formula so that it was responsive to both low milk prices and high feed costs. MILC subsidy rates do not satisfy dairy farm lobbyists and the quantity limit means farms that produce most of milk in the United States receive limited benefit.

The consequences of permanently eliminating the MILC subsidy depend on the size of the farm. For small farms, eliminating MILC would reduce the effective price of milk (price plus per unit MILC payment), so milk production from these small farms would decline. A larger farm receives a MILC payment when margins dip, but unlike the small farm, the individual payment is not affected by adjustments in that farm's production because the farm already produces well above the limit, so the payment quantity is fixed. Removing MILC would eliminate payments but raise milk prices as aggregate supply declines. Many larger farms, including many farms in California, would be net winners from eliminating MILC, as the benefits of higher milk prices across a large quantity of milk outweighs the loss of the relatively small

Figure 1. Dairy Margin, January 2000–July 2013



*Sources: Calculated by the formula (Margin = National all-milk price – (1.0728*Price of corn per bushel+0.00735*Price of soybean meal per ton+0.0137*Price of alfalfa hay per ton)) from U.S. House of Representative, 2013, Federal Agriculture Reform and Risk Management Act of 2013 (H.R. 2642). National all-milk price, price of corn and price of alfalfa hay are from NASS, USDA and price of soybean meal is from AMS, USDA.*

MILC payment. Overall, California dairy would gain from permanent elimination of the MILC program.

New Proposed Dairy Programs

The proposals for changing dairy policy came from the dairy industry that found price supports of little benefit because recently, milk prices have remained high while dairy farm profits fell. The MILC program simply has not provided the magnitude of payments that many farms and producer organizations consider adequate.

Figure 1 shows the data that has been most influential in the dairy policy debates. Feed is the most important cost item for dairy farms and the relationship between milk prices and feed prices is crucial to determining profitability. While the farms differ in efficiency, debt and other factors, all dairy farms are challenged when the margin falls too low. In most months from 2000 through 2008, the margin was above $8.00. Even then, in periods such as March 2002 through July 2003, or March 2006 through November 2006, the margin was relatively low. Dairy farmers received high margins from early 2004 to early 2006, and even higher margins from May 2007 through December 2007. However, since mid-2008, due to the increase in feed costs, there have been several periods with the margin below $8.00.

In 2009 and again in 2012, the margins between milk prices and feed prices (shown as the cost of a typical ratio that would produce 100 pounds of milk) dipped well below what was generally considered adequate to cover costs of labor, maintenance, investment in cows, management, and a return on investment. The result was many dairy farms were unable to pay their debts and many farms had negative cash flows. So far, in 2013, milk prices have been up and feed prices lower so margins have been higher.

Both House and Senate versions of the farm bill would create a new subsidy similar to MILC that pays farms when margins (milk prices less feed costs) are low. In addition, the Senate farm bill would require dairy farms that sign up for the margin payment to also agree to government-run "supply management" limits on production.

Both proposals would offer subsidized margin insurance for dairy farms. Dairy farms would receive government payments whenever an index of milk revenue minus feed costs falls below the farmer-chosen coverage level for two consecutive months. Given this common structure, the specifics about administrative fees, the premium rates, and coverage payments differ between the Senate version and the House version.

Table 1 (on page 6) shows the premiums by coverage level from the House-passed farm bill (H.R. 2642) and the Senate-passed farm bill (S. 954) for small and large farms. The pattern of premiums differ between the two programs and, of course, full costs to farmers also reflect the administrative fee that is included in the Senate version.

The Senate version of margin insurance would allow farmers to receive zero-premium insurance for coverage levels below $4.00 per hundredweight. Dairy farms enrolled in the program would receive a monthly payment per hundredweight equal to the difference between $4.00 and the government-calculated margin. Farms would receive the payment on the lesser of 80% of historical production base or actual production. The historical base is either the farm's production in

Table 1. Margin Insurance Premium per Hundredweight of Milk for Each Coverage Level

	H.R. 2642		S. 954	
Coverage Level	Premium for First 4 million lbs.	Premium More than 4 million lbs.	Premium for First 4 million lbs.	Premium for more than 4 million lbs.
$4.00	$0.00	$0.030	$0.00	$0.00
$4.50	$0.01	$0.045	$0.01	$0.02
$5.00	$0.02	$0.066	$0.02	$0.04
$5.50	$0.035	$0.11	$0.035	$0.10
$6.00	$0.045	$0.185	$0.045	$0.15
$6.50	$0.09	$0.29	$0.09	$0.29
$7.00	$0.18	$0.38	$0.40	$0.62
$7.50	$0.60	$0.83	$0.60	$0.83
$8.00	$0.95	$1.06	$0.95	$1.06

Source: US House of Representatives: Federal Agriculture Reform and Risk Management Act of 2013 and US Senate: Agriculture Reform, Food and Jobs Act of 2013.

the same month of the previous year or average production in the previous three months of the current year.

To enroll, farms would pay annual administrative fees, with larger farms paying fees as high as $2,500 per farm. Farms could buy additional margin insurance in 50-cent increments, up to an $8.00 margin, and could choose a coverage percentage from 25% up to 90% of the production history.

The producer cost of the buy-up insurance is increasing in the chosen margin, and is higher for any milk marketing in excess of 4 million pounds per year per farm. So again, larger farms pay more, with the small farm limit equivalent to the production of about 160 cows.

The House version of the margin insurance program has no administrative fee per farm, but includes a premium for base coverage for larger farms. In the House version, coverage is limited to 80% of production. The premium rates also differ from the Senate version.

In the House version of margin insurance, premiums would be zero for coverage of margins below $4 per hundredweight, except for quantities below 4 million pounds. For the low quantities, premium rates would remain below $0.10 per hundredweight for coverage up to $6.50 per hundredweight. But premiums would rise rapidly, even for coverage of margins that have been common in the last few years. Premiums would exceed $1 per hundredweight for margins that dip below $8, which has been a regular occurrence over the past eight years. The pattern of premiums suggests a higher subsidy rate for very low margins and premiums that jump rapidly for higher margins, especially for larger milk quantities per farm.

The substantially higher premiums for milk marketed above 4 million hundredweight per year reduce the benefit of the program for California farms, which typically milk 1,000 cows or more. This bias is especially pronounced in the case of insurance for higher coverage levels. Farms that anticipated margins to remain relatively strong and only occasionally dip below seven or eight dollars per hundredweight would expect to receive relatively little benefit from this program. The net payoff would be even lower for farms producing substantially more than 4 million pounds.

It is useful to consider how the program might operate for a typical California dairy farm. Consider a farm producing 24 million pounds of milk per year (the milk from about 1,000 cows). If the price of milk is $15 per hundredweight, this farm would have annual gross revenue from milk sales of $3.6 million. If the farm decided to cover 80% of their base production (assumed, for convenience to be equal to actual production), for a margin of $7.00, the premium (in the House version) would be 0.8 X ($0.18(40,000) + $0.38(200,000)) = $66,560. Now consider the benefit when the margin falls to $6 per hundredweight for four months and remains above $7 per hundredweight for the other months. Assume that this farm has a base of 80,000 hundredweight and coverage of 0.8(80,000). The indemnity payment would be $64,000—not quite enough to cover their premium.

This simple example was just to illustrate the program and, for simplicity, assumed production history was the same as current production and did not incorporate supply response to the margins or the insurance. However, the example does illustrate that the insurance subsidy involves substantial potential gains and losses for a typical California farm. It also shows that even with significant subsidy, the program is not a sure winner.

Overall, those farms with greatest exposure to tight milk price-feed cost margins, for example, because they are less able to manage margin risk or are more reliant on purchased feed, would benefit most from the security provided by the insurance subsidy. Farms that have market prices and feed costs that closely track the national averages built into the USDA calculations also benefit more.

For farms, such as those in California, that have a somewhat different pattern of milk prices and quite different feed rations than eastern dairy farms, margin insurance is less useful because indemnities will track periods of low margins less precisely. Moreover, the economic consequences of a margin insurance program extend

beyond just payments to farms. Subsidized insurance affects taxpayers as well as affecting the production of milk and, therefore, market prices.

Paying farms in the case of tight margins would reduce incentives to reduce production in response to low milk prices or high feed costs, and thus would encourage greater milk production as farms became less responsive to market incentives. By inducing increased milk production, margin insurance subsidies would put downward pressure on milk prices, thus making tight margins more likely.

At the same time, reduced responsiveness to tight margins would tend to prolong episodes of tight margins. So while the program would provide relief from margin risk, it also exacerbates the problem it is designed to address.

Adding Supply Management to the Margin Insurance Policy

The Senate version of the farm bill ties the margin insurance to a new program that mandates reduced production when the margin insurance payments are significant. This supply-management program has been a contentious element in the dairy policy debate. Under supply management, the USDA would impose farm-level marketing quotas whenever margins fall below certain thresholds.

By requiring farms that participate in the insurance subsidy to cut production in times of tight margins, the policy is designed make such episodes shorter, shallower and less frequent, thereby reducing budget costs of the subsidized margin insurance. For the margin index below $6.00, the participating farms would be required to reduce their production by 2–4% below their base production history or their actual marketings.

A binding quota would limit farmers' positive supply response to the margin payment. The extent to which the policy has the intended effects depends on the extent to which the quota actually reduces output below what it would have been otherwise. Base updating—the fact that production history adjusts as farmers produce more or less—creates an incentive for farmers to raise production in non-quota periods so they have a larger base the next time the quota binds. This means the quota may create more production variability and undermine the ability of quotas to reduce production and limit the outlays from the subsidized insurance.

Both House and Senate versions of the farm bill would create a new subsidy that pays farms when margins (milk prices less feed costs) are low.

So far the Congressional Budget Office (CBO) has not released outlay estimates for the dairy margin insurance without supply management. The cost estimation for the recently passed House version (H.R. 2642), cited in the lead article in this issue, does not have the cost estimation for the dairy program separately. CBO reported that the Senate version of the dairy provisions (S. 954), which includes supply management, would add costs of $302 million over the ten-year period (2014–2023). We expect the projected budget outlay of the House version, without supply management, would be higher. However, there are other differences as well, including no administrative fee and higher premiums for several coverage levels.

Opponents and proponents of supply management both expect the program to reduce milk production and increase milk prices over what would occur with subsidized insurance alone. The National Milk Producers Federation leads a group of farmers that has favored supply management, in part because they have been concerned that budget costs of the margin insurance subsidy would not be sustainable otherwise. The International Dairy Foods Association leads a group of processors that has objected to supply management on the grounds that it will raise their costs and reduce dairy sales.

Some farmers object to the farm quotas because they want the freedom to determine their own production plans. These producers may also have relatively low production costs and expect to expand their operations. Thus, the quota policy does not just pit producers against consumers.

The extent to which the quota is binding—and thus the costs of the quota born by farms—will be negligible for farms expecting to reduce output anyway, and will be large for farms expecting to expand. That means the quota policy entails a transfer of income from dynamic, growing farms to those that have limited growth potential. Dairy farmers can be found on both sides of the debate over supply management.

Is Margin Insurance with Supply Management Better than Nothing?

Because both the House and Senate bills include the margin insurance policy, the current debate seems to be focused on whether or not the new farm bill should include supply management. But the combination of margin insurance and supply management policies could have perverse effects. These policies have offsetting effects on production and prices: the margin insurance encourages more production and supply management discourages production. In order to increase milk prices and thus shorten an episode of tight margins, the net effect of the combined policy would have to be to reduce production, at least in low margin periods.

Moreover, the payment and quota triggers would have to be timed in such a way as to counteract whatever market events trigger tight margins. If the net effect of the policies is to increase production (for example, if

Table 2. Effects of Margin Insurance With and Without Supply Management

	HOUSE Margin Insurance and No Supply Management (Compared to No Policy)	SENATE Add Supply Management to Margin Insurance (Compared to Without Supply Management)
Participating Producer Effective Price per Unit	+	Offsetting effects
Consumer Price (Also Non-Participating Producer Price)	-	+
Production	+	-
Participating Producer Benefit	+	-
Non-Participating Producer Benefit	-	+
Consumer Benefit	+	-
Taxpayer Costs	+	-

the margin payment is generous and base updating waters down the effects of the quota), or if the policy is not timed just right, the policy can easily exacerbate low or volatile margins. Table 2 summarizes overall likely effects of margin insurance and then the effects of adding supply management to margin insurance on groups of producers, consumers, and taxpayers.

Finally, notice that farms that face the most binding restrictions from supply management are those farms that would otherwise be growing. These farms would tend to have lower costs, be located near plants producing high-demand products (such as greek yogurt), have environmental advantages, have younger operators, or are otherwise at a more dynamic stage in their life cycle. Penalizing such farms raises concerns about the long-term competitiveness of the U.S. industry.

Additional and Longer-Term Considerations

The introduction of subsidized margin insurance could improve profitability of dairy farming and reduce the frequency, depth, and duration of periods with low margins. If insurance is important as a risk management tool, a basic question is why no such insurance is now offered either by private firms or the large national dairy cooperatives. The answer may be that the insurance aspects of the program are less important than the subsidy aspects. So far, there has been no clear assessment of how large the subsidy is likely to be.

The related question is why it is in the interest of taxpayers to provide this insurance subsidy. As with other farms and businesses, dairy farms manage risk by diversification, using forward contracts, vertical integration (especially through cooperatives), establishing variable lines of credit, maintaining substantial equity, and other means. Subsidized margin insurance rewards those who have been less effective at risk management relative to dairy farms who have accepted lower returns to manage risk. Finally, by limiting U.S. milk supply and causing it to be more variable, supply management causes the U.S. dairy industry to be less reliable in world markets to the benefit of competitors such as New Zealand.

Bottom line questions for the dairy industry and policy makers are: do these new policies aid U.S. dairy producers, and what is the cost of such aid for milk consumers and taxpayers? In the longer term, do subsidized insurance and supply management help create a more effective U.S. dairy sector as it supplies consumers with healthful and enjoyable dairy products?

Suggested Citation:

Balagtas, Joseph V., Daniel A. Sumner and Jisang Yu. 2013. "Changes Are Coming to U.S. Dairy Policy." *ARE Update* 16(6): 4-8. University of California Giannini Foundation of Agricultural Economics.

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For additional information, the authors recommend:

H.R. 2642, Federal Agriculture Reform and Risk Management Act. www.govtrack.us/congress/bills/113/hr2642/text

Agriculture Reform, Food and Jobs Act of 2013. www.ag.senate.gov/issues/farm-bill

Balagtas, Joseph V., and Daniel A. Sumner. "Evaluation of U.S. Policies and the Supply Management Proposals for Managing Milk Margin Variability." *American Journal of Agricultural Economics* 94(2)(2012): 522-527.