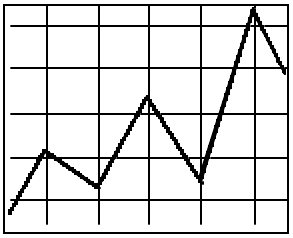
MARKETING AND POLICY BRIEFING PAPER



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Paper No, 81
March 2003

Flooring the Support Price for Milk

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Price Support Background

The Dairy Price Support Program has operated continuously since 1949 to maintain a minimum price for milk used for manufacturing purposes. The specific floor price (or, at times, the mechanism to calculate the floor price) is determined by Congress, usually as part of omnibus agricultural legislation (farm bills). The current support price is $9.90 per hundredweight for milk of "average" butterfat content, which converts to $9.80 for milk testing 3.5 percent butterfat, the standard used in federal order pricing. This price level is specified by the Farm Security and Rural Investment Act of 2002 and is effective through December 31, 2007 unless altered by Congress before then. The support price has been $9.90 since January 1, 1999.

The support program is implemented by USDA's Commodity Credit Corporation (CCC). Given the support price for milk established by Congress, the CCC offers to purchase certain "hard" (nonperishable) dairy products — butter, cheddar cheese, and nonfat dry milk — at prices that allow plants making these products to earn enough revenue to pay the support price to their farmer patrons. USDA calculates the product purchase prices through formulas that consider product yields, manufacturing costs (make allowances) and, for cheese, whey fat values. USDA adjusts product purchase prices whenever the support price for milk is changed by Congress. USDA occasionally alters purchase prices with no change in the support price to reflect changes in make allowances or to reflect "tilts" in relative butter and nonfat dry milk values per hundredweight of milk.[2]

The products purchased by the CCC and their current purchase prices associated with the $9.90 support price are shown below:

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[2] See Jesse and Cropp, *The Butter-Powder Tilt*, Marketing and Policy Briefing Paper No. 72, June 2001.

CCC Purchase Prices Effective November 1, 2002		
	Product	***Price, $/Lb.***
Butter:	Bulk	1.0500
	1 Lb. Prints	1.0850
Cheese:	40-60 Lb. Blocks	1.1314
	500 Lb. Barrels	1.1014
	Process American, 5 Lb.	1.1889
	Process American, 2 Lb.	1.2289
Nonfat Dry Milk:	Nonfortified	0.0800
	Fortified	0.8100
	Instant	0.9625

Source: Dairy Market News. Historical data on price support levels and CCC purchase prices can be found at: http://www.aae.wisc.edu/future/front_current_support.htm

The CCC is committed to buying unlimited quantities of these products at the announced purchase prices. When milk supply and demand are in balance, hard product prices are above their respective CCC purchase prices and no purchases are made.[3] When the national milk supply is in surplus, milk exceeding usage in products sold commercially increasingly "backs up" into butter-powder and cheese plants. Prices for these non-perishable products fall, and at some point (depending on the severity of the surplus), the CCC becomes a more lucrative sales outlet for plants than commercial markets.

Prices for products that the CCC does not purchase are indirectly supported through competition for raw milk supplies. For example, if a specialized cheddar cheese plant selling to the CCC can pay farmers $9.80 per hundredweight, a specialized Mozzarella cheese plant will need to match that milk price or risk losing patrons. Diversified cheese plants will shift milk from unsupported cheese to cheddar styles purchased by the CCC. Product price formulas linking the prices for commodities purchased by the CCC to class and component prices under federal marketing orders also serve to expand the scope of the support program beyond milk used to manufacture hard products.

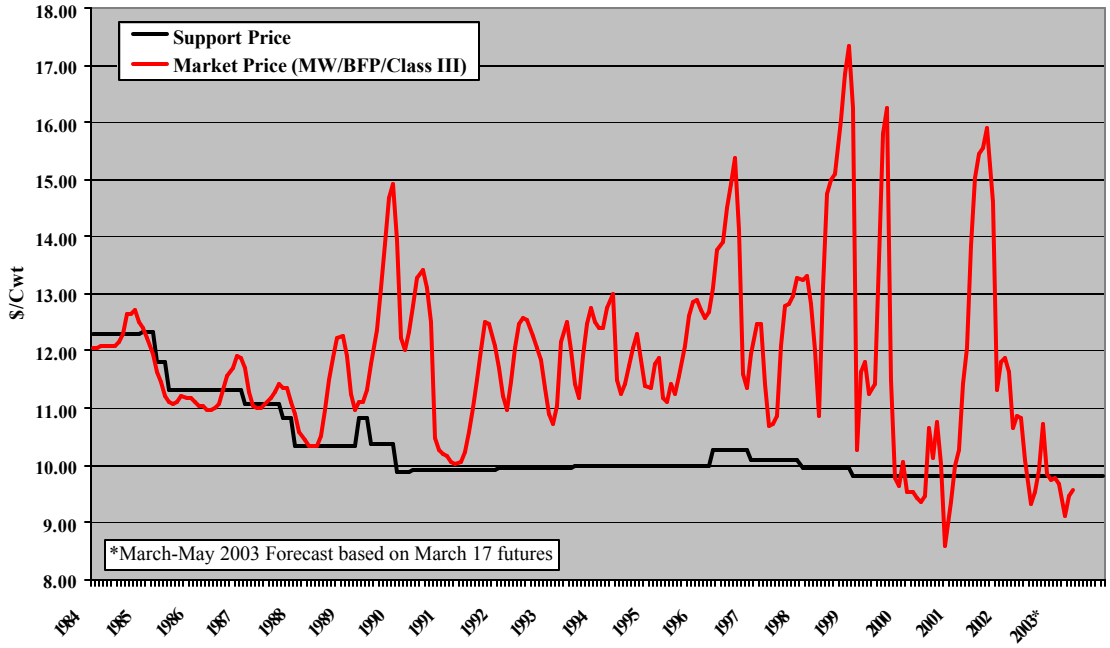
The Thickening Support Price Mattress

The dairy price support program does not guarantee producers a minimum price for their milk. The program acts more like a mattress than a floor in the sense that the market price for manufacturing milk occasionally falls below the announced support price.

[3] With the exception of nonfat dry milk, which is in seemingly perpetual surplus regardless of milk prices.

This happened frequently in the mid-1980s, when the support price was being systematically reduced from the very high levels attained as a result of the 1977 farm bill.[4] In the 60 months from January 1984 through December 1988, the manufacturing milk price[5] was below support in 34 months. The average shortfall was $0.20 per hundredweight, and the maximum was $0.62.

Market and Support Prices for Milk, 1984-2003
(Prices at 3.5% Butterfat)



From June 1988 through October 1999, the manufacturing milk price was consistently above support. But between January 2000 and February 2003, the Class III price fell below support in 12 of the 37 months. When Class III was below support, the average deviation was $0.36 per hundredweight and the maximum was $1.23 (November 2000).[6] Futures prices as of mid-March 2003 suggest Class III may average $0.40 per hundredweight or more under support in the months of March through May 2003.

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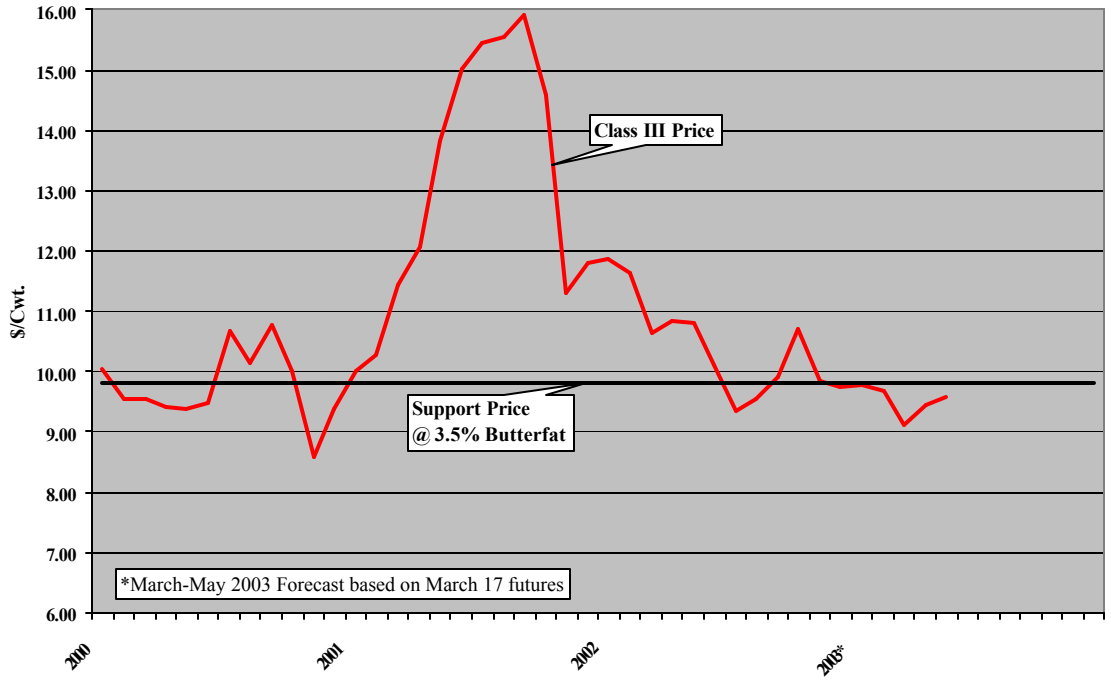
[4] The 1977 farm bill set the support price at 80 percent of "parity" and required semiannual adjustments. High rates of inflation elevated the support price to as high as $13.10 per hundredweight. Combined with cheap feed, the high support price induced a large expansion of milk production and large surpluses. Congress removed the support price from parity in 1981 and subsequently took several actions to lower the support price to its current level.

[5] The federal order manufacturing class price for milk used for cheese was the Minnesota-Wisconsin Manufacturing Milk Price Series (W-W Price) prior to April 1995, the Basic Formula Price (BFP) from April 1995 through December 1999, and the Class III price since January 2000.

[6] The Class III price for November 2000 was $8.57, which was the lowest Class III milk price recorded since March 1977 ($8.31).

Class III versus Support Price



CME versus CCC Cheese Prices

Why have Class III prices fallen so far below the support price? Why is the deviation so much larger than in the past? Why isn't the support price creating the floor that is intended by Congress?

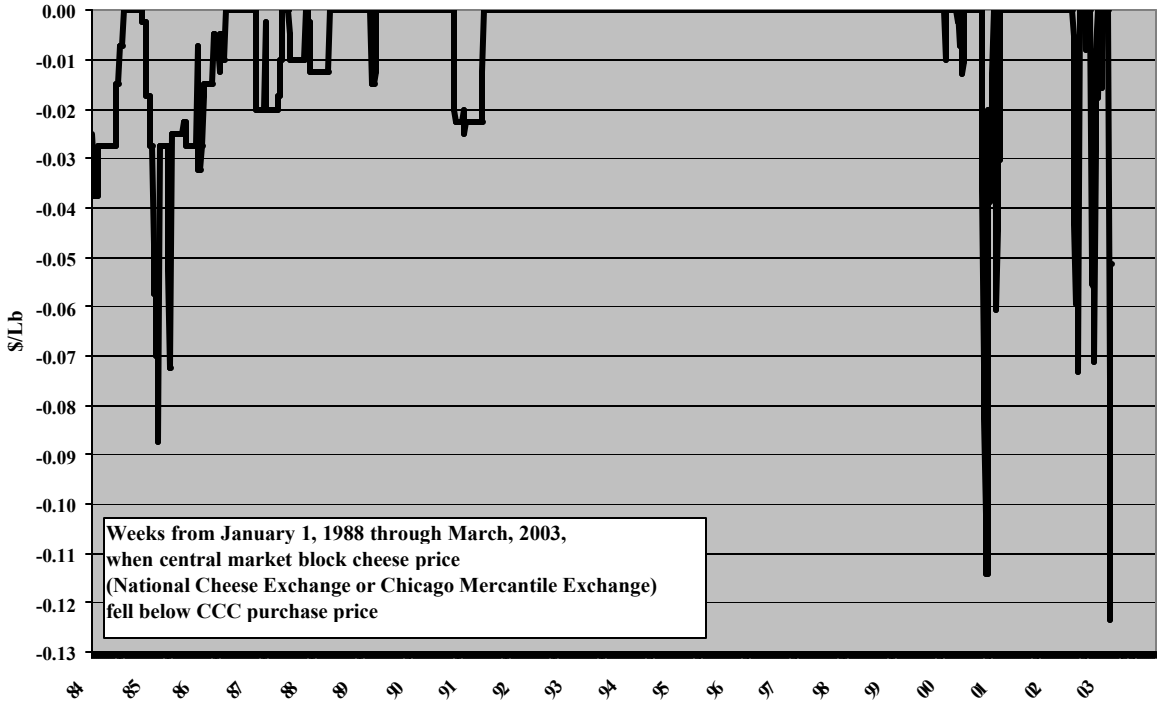
The simplistic answer to these questions is that market prices for cheese are falling substantially below the CCC purchase price for cheese.[7] Since January 2000, the weekly average block cheddar cheese price on the Chicago Mercantile Exchange (CME) has been below the $1.1314 per pound CCC purchase price about one-fourth of the time. The average negative deviation was $0.04 per pound, and the maximum $0.1234.

The federal order Class III price is based on the USDA, National Agricultural Statistics Service (NASS) weekly survey price for block and barrel cheddar cheese, not CME prices. But because CME prices serve as a reference prices for cheese sales off the exchange, NASS

[7] Low whey prices have been a minor contributing factor to Class III prices falling under support. To achieve a $9.80 Class III price with cheese and butter at support, whey (which is not purchased by the CCC) must be priced at about $0.18 per pound. The NASS survey price for dry whey has been $0.16-$0.17 per pound since early January 2003. So low whey prices have been responsible for about 6-10 cents per hundredweight of the Class III-support price shortfall since then. However, low butter prices since January 1 have offset some of the negative effect of low whey prices on Class III prices. With the current Class III formula, the Class III price increases by $0.04 per hundredweight for a $0.10 per pound decrease in the NASS butter price.

and CME prices are very highly correlated. Since NASS began publishing U.S. weekly average block prices in April 1997, the correlation coefficient between the weekly NASS price and the CME price lagged two weeks is 0.99. The NASS price has averaged 1.2 cents per pound under the two week lagged CME price since it has been reported.

Block Cheddar Cheese Prices: NCE/CME minus CCC



The average and maximum negative deviations of market cheese prices from CCC purchase prices since 2000 are both considerably larger than during the large surplus years of the mid-1980s. Between 1984 and 1988, there were several weeks when the price on the National Cheese Exchange, the predecessor central cheese market to the CME, fell below the CCC price. But the average negative deviation was 2 cents per pound. And on those occasions when the deviation was greater than 3 cents, it was because the market was adjusting in advance to an announced reduction in the CCC purchase price for cheese.

So What's the Real Problem?

The harder questions to answer are: Why are CME prices falling so far below CCC purchase prices? Why aren't cheese plants selling to the CCC when it is offering what appear to be more attractive prices than commercial buyers?

There are at least three plausible answers: (1) ***Net*** CCC prices are below ***net*** CME prices; (2) Potential CCC sellers have committed sales arrangements with buyers that inhibit sales to the

CCC; or (3) Potential sellers are indifferent between selling to the CCC and commercial buyers because they realize the same margin regardless of their selling price.

There is evidence that it does cost more to sell to the CCC than to commercial buyers. The National Milk Producers Federation (NMPF) recently identified several sources of higher costs:[8]

- Processing and packaging standards for CCC products are different from industry standards.
- Inspection and grading for CCC product is mandatory, and more stringent grading specifications result in higher rejections.
- Storage and finance costs are higher because the CCC is slower to take delivery and make payment.
- CCC freight allowances are inadequate to cover shipping costs on CCC sales.

NMPF estimated the added costs of selling block and barrel cheese to the CCC at $0.056 per pound and has asked USDA for a corresponding increase in the make allowance used to derive the CCC purchase prices. If granted, this would increase CCC purchase prices for cheese by $0.056 per pound.

Costs of selling cheese to the CCC may be higher, but the NMPF numbers do not account for some of the large differences between CCC and CME prices observed recently. What about committed sales agreements? Is a substantial volume of cheddar cheese locked up under long term supply commitments and therefore can't be sold to the CCC?

Not much is known about contractual relationships for cheese sales. Bulk cheddar cheese buyers and sellers are declining in number and contracting is prevalent.[9] Whether contracts commonly obligate sellers to deliver all cheese manufactured to the contract buyer is not known. However, even if cheese manufacturers do not have the flexibility to sell to the CCC, their cheese ultimately ends up in the hands of buyers who do. And if these buyers can't use the cheese or find a place to store it, one can only surmise that they will turn to the CCC as an outlet.

Are potential suppliers of cheese to the CCC indifferent to relative sales prices? The effectiveness of the dairy price support program is contingent on the assumption that manufacturers of products that the CCC buys will sell to the highest bidder and that other dairy plants will have to match the related producer milk prices to acquire a milk supply. For the first 50 years of the program, that assumption was reasonably sound. Federal order manufacturing milk values were based on competitive pay prices in Minnesota and Wisconsin, where there was, indeed, active competition for milk.

[8] National Milk Producers Federation, News for Dairy Cooperatives, 61:5, February 17, 2003. Costs were obtained from a survey of member cooperatives.
[9] In 1985, NASS reported a total of 379 plants making cheddar cheese. The plant count in 2001 was 172.

The change to using product price formulas to set minimum class prices under federal orders has altered the competitive environment. The Class III price no longer reflects what cheese plants are paying farmers for ***milk***. It now reflects what cheese buyers are paying cheese sellers for ***cheese***. Stated differently, the Class III price represents what cheese plants can afford to pay farmers for milk given cheese prices. This is a significant change that reduces the ability of the dairy price support program to maintain a minimum milk price.

The federal order Class III price formula uses a $0.165 per pound of cheese make allowance. If a cheddar cheese plant sells cheese at the NASS survey price and pays minimum federal order pay prices for milk and milk components, the plant's margin is $0.165 per pound of cheese. The margin is 16.5 cents per pound whether the cheese price is $2.00, $1.1314 or $1.00 per pound.

Because of the fixed manufacturing allowance built into the federal order Class III pricing formula, the incentive for a proprietary cheese plant to sell to the CCC when market prices fall below CCC prices is diminished. In fact, there may be a perverse incentive for manufacturers to sell cheese at low prices.[10] Low cheese prices generate low milk costs through the Class III formula. Low cheese prices also generate larger cheese sales, which at a fixed margin per pound generates higher total plant revenue.[11] While cheese manufacturers may be able to temporarily increase their margins by selling to the CCC when the CCC offers a higher net price, any resulting increase in cheese prices (as measured by NASS) will be reflected in a higher price for cheese milk.

Dairy cooperatives, whose objective is to maximize returns to members, would be expected to introduce market discipline by consistently seeking the highest priced cheese market. But cooperatives may be bound by full production sales contracts or otherwise limited with respect to sales outlets.[12]

What are the Solutions?

Regardless of the cause, the dairy price support program is not maintaining the intended floor under manufacturing milk prices. The system is broken and needs to be fixed. Three remedies merit discussion: (1) Floor (snub) the Class III and Class IV federal order prices at $9.80; (2) Increase the make allowances used in deriving CCC purchase prices to account for any higher costs of selling to the CCC; and (3) Require the CCC to alter product

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[10] This perverse incentive is in addition to another perverse incentive for cheese *buyers* to reduce their acquisition cost by *selling* cheese on the CME. Low CME cheese prices benefit cheese buyers (via off-exchange pricing arrangements linked to the CME price) and cheese sellers (via the link between CME cheese prices and the Class III price). In a market where both buyers and sellers benefit from low prices, the ability of the market to generate competitive prices is questionable, at best.

[11] Or, if the plant is operating at full capacity, lower cheese prices increase the plant's ability to sell all the cheese it makes.

[12] There may also be different cooperative incentives across regions. In some areas, cooperative cheese plants pay at or below minimum federal order prices. Cooperatives in Wisconsin typically overpay order minimum prices, and incur lower operating margins when milk prices are low.

specifications and payment terms to conform to those used on the CME and to place standing bids on the CME block and barrel cheese markets at the CCC purchase prices.

Snub federal order prices

This option could be implemented in two ways: (1) Use $9.80 as the Class III or Class IV price if the price generated by the federal order formula for either fell below $9.80, or (2) Use the higher of NASS or CCC purchase prices in the Class III and Class IV pricing formulas. Based on evidence from a hearing held January 29-30, the Secretary of the California Department of Food and Agriculture announced adoption of the second flooring method for the California milk pricing system effective April 1. Specifically, California 4a (butter-powder) and 4b (cheese) pricing formulas will use the higher of market prices or CCC purchase prices for butter, nonfat dry milk, and cheese.[13]

The two snubbing methods are not identical because the pricing formulas using CCC purchase prices do not necessarily yield $9.80 per hundredweight. This is demonstrated in the chart below comparing prices resulting from use of CCC purchase prices in the current federal order pricing formulas for Class III and Class IV, the formulas slated to become effective in April 2003 (barring an injunction) and the April 1 California 4a and 4b formulas (also undoubtedly subject to a request for injunctive relief). Formulas using nonfat dry milk consistently yield milk prices less than $9.80. Whey values have a significant bearing on whether the CCC butter and cheese prices yield cheese formula prices at the milk support price.

Minimum Manufacturing Milk Prices Using CCC Purchase Prices in Product Pricing Formulas

Formula	*$/Cwt.*
Current Federal Order Class IV	9.72
New Federal Order Class IV	9.60
Current Federal Order Class III: Whey @ $0.15/Lb	9.60
Current Federal Order Class III: Whey @ $0.25/Lb	10.19
New Federal Order Class III: Whey @ $0.15/Lb	9.66
New Federal Order Class III: Whey @ $0.25/Lb	10.24
New California Class 4a	9.37
New California Class 4b: Whey @ $0.15/Lb	9.52
New California Class 4b: Whey @ $0.25/Lb	10.10

[13] Market prices under the California pricing system are defined as: CME butter, CME block cheddar cheese, California Grade A and Extra Grade nonfat dry milk, and Western dry whey. Federal orders use NASS prices for all four commodities.

Snubbing either the manufacturing class prices or their constituent commodity prices would be a very effective way to prevent Class III and Class IV prices from falling below $9.80. The problem is that snubbing would not prevent market prices for cheese and other CCC products from falling below CCC purchase prices by at least the difference in selling costs between CME and CCC sales. Consequently, manufacturers would object strongly to this option. They would legitimately argue that their margins were being squeezed whenever CME prices were less than CCC prices.

To its credit, this option would stimulate CCC sales (and strengthening of the commercial cheese market) whenever CME prices fell below CCC prices by more than the added cost of selling to the CCC. It would also allow us to quickly find out how much extra it really costs to sell to the CCC. But it could place a hardship on smaller plants that are not in a position to sell to the CCC.

Raise make allowances

As noted earlier, this option has been proposed by NMPF. It has considerable merit. If, in fact, selling to the CCC imposes costly burdens on manufacturers, then these need to be monetized in setting CCC purchase prices that will yield the statutory support price for milk.

But while it would help, raising make allowances does not assure a milk support price floor. For example, NMPF proposes that the CCC block cheddar price be increased 5.6 cents per pound. The CME block cheese price was more than 5.6 cents per pound under the CCC purchase price in 12 weeks since January 2000.

Also, it is difficult to estimate added CCC selling costs, and they probably vary widely among plants. Thus, raising the make allowance would provide unwarranted benefits to some plants and still not be adequate to induce CCC sales by others. Moreover, there is no clear evidence that higher selling costs are the major reason for cheese manufacturers' reticence in selling to the CCC. There is no such reticence among nonfat dry milk sellers. Yet curiously, NMPF proposes raising the nonfat dry milk purchase price by 2.25 cents per pound.

If CCC make allowances are raised, then this option could be combined with snubbing Class III and Class IV prices to assure an absolute floor on manufacturing milk values. Legitimate objections by manufacturers to snubbing would be alleviated by eliminating net price differences between commercial and CCC sales.

Finally, there is the question of whether raising make allowances is the best way to address higher costs of selling to the CCC. Many of the sources of added costs noted by NMPF are CCC product and processing specifications and procedures that do not conform to industry standards. Others are due to non-standard delivery, payment, and paperwork requirements. If the CCC is using practices that are out of sync with conventional commercial business practices, why not require their conformance? Make allowances should be elevated only as necessary to offset added selling costs that cannot be reduced by the CCC adopting industry standards.

CCC as CME trader

The Midwest Dairy Coalition has proposed and supported having the CCC participate as a trader on the CME or contract with CME brokers to place an irrevocable bid (offer to purchase) for block and barrel cheddar cheese on the CME at announced CCC purchase prices.[14] CCC product, delivery, and payment specifications would be modified to more closely match those used for sales on the CME[15]. Any offers to sell at the standing bid would be accepted by the CCC. Under CME trading rules, there can be no sales or offers to sell at a price below the standing bid. Hence, this option would place an absolute floor on CME prices at the CCC purchase prices.

This option has several attractive features. In addition to flooring CME prices, it would require the CCC to alter its specifications and other practices to meet industry standards as represented by those applicable to CME trades.[16] It would facilitate CCC sales since most potential sellers are accustomed to trading on the CME. The purchase program would normally operate in the background of the exchange and only be activated when commodity prices approached support levels.

This option effectively floors CME prices, but it does not necessarily floor NASS survey prices. The relationship between CME and NASS cheese prices has been very tight. But there is a possibility that sales contracts with prices tied to the CME could be altered if the CCC were a buyer on the CME. For example, buyers might use a different pricing formula when CME prices reached floors that resulted in larger discounts or smaller premiums. In that event, NASS commodity prices would be lower, leading to federal order Class III and Class IV prices under $9.80.

Summary

The federal dairy price support program has not been effective in maintaining the producer milk price floor intended by Congress. Since January 2000, when federal order "reforms" were implemented, the monthly Class III milk price has been under $9.80 almost one-third of the time. These shortfalls are primarily the result of cheese prices falling below CCC purchase prices. Until recently, very little cheese has been purchased by the CCC even though the CCC cheese prices were frequently higher than trading prices on the CME.

Part of any positive difference between CCC and CME prices can be attributed to higher selling costs for government sales. But there are other possible reasons that cheese

[14] Participation on the CME butter market may also be justified, although the CME butter price has not fallen as often or as far below the CCC price as cheese. The CME also maintains a spot market for nonfat dry milk but it is inactive and does not serve as a price reference for nonfat dry milk sales.
[15] CME specifications can be found at: http://www.cmerulebook.com/cmewg/wg.dll?page&file=c53s.
[16] There may be certain CCC trading practices leading to higher transaction costs for sellers relative to commercial sales that cannot be altered because of USDA rules. If that is the case, the CCC would have to equalize net sales prices between CCC and commercial CMS sales, probably through premiums that offset these costs.

manufacturers might sell to commercial buyers rather than the CCC despite higher CCC prices. A plant's entire production may be tied up in long-term sales contracts. Or fixed federal order make allowances combined with limited competition for milk might make a cheese manufacturer indifferent to sales prices.

Possible ways to ensure that the dairy price support program provides an effective floor price include snubbing the federal order manufacturing class prices, increasing the make allowance used by USDA in converting the milk support price to CCC purchase prices, and having the CCC be a trader on the CME. Each option has positive and negative features. Flooring Class III and Class IV prices at $9.80 is a simple and very effective way to ensure minimum milk prices, but would be very objectionable to manufacturers. Raising make allowances would offset higher CCC selling costs, but it seems to make more sense to require the CCC to adopt specifications and practices that reduce those higher selling costs. CME prices can be effectively floored if the CCC offered to buy on the CME at announced CCC prices, but this may not floor prices for sales off the CME.

Of the three options, CCC direct purchases on the CME offers the most promise as a means of ensuring an effective floor price for milk. In comparison to snubbing federal order manufacturing prices, it does not distort the relationship between commodity prices and milk prices. In comparison to elevating make allowances, it obviates the need for higher make allowances by conforming CCC specifications and business practices to industry standards. The risk that relationships between CME and NASS prices would change with the CCC as a buyer on the CME appears small.