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Y2K AND U.S. MILK PRICE SUPPORTS

By

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## Y2K AND U.S. MILK PRICE SUPPORTS

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The Y2K (Year 2000) problem is most frequently used to identify possible computer glitches that will occur when we begin the new millennium. Older computer systems, in particular, are supposed to get confused and conclude that we are going back to 1900 (or become confused for other reasons) when the calendar rolls over to 2000. People are trying to fix the computer systems to prevent Y2K problems. But many think the effort will be less than completely successful. Thus, the Y2K computer problem scenarios range from mild inconvenience to apocalyptic outcomes that include air crashes, utility failures, and food and water shortages.

The organizers of this conference have cleverly piggy backed on the term Y2K to identify problems that might arise in the U.S. dairy industry when the calendar reaches 2000. As is widely known, the Federal Agricultural Improvement and Reform Act of 1996 (1996 Farm Bill) scheduled the present USDA dairy price support program for elimination after December 31, 1999. The present program purchases butter, cheese and nonfat dry milk at prices needed to support U.S. farm milk prices for manufacturing milk at designated levels (currently \$9.90 per cwt.).

Many initially expected only mild inconvenience from the dairy Y2K since U.S. farm prices for manufacturing milk have been above the support level for most of the past decade. But when industry people looked at likely future prices for nonfat dry milk (NDM), the prospect of no supports for this product generated concern. The National Milk Producers Federation (NMPF) concluded that there is a "structural surplus" of NDM of about 400 million pounds--equal to about one-third of recent annual production [4]. Moreover, when the Basic Formula Price for manufacturing milk dropped by \$6 per hundredweight in February, 1999 more people got concerned about how low U.S. manufacturing milk prices might go in the absence of price supports. The dairy Y2K problem is potentially serious enough to warrant a look at options for dealing with the problem.

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## **What Will Support U.S. Manufacturing Milk Prices After the Current USDA Dairy Price Support Program Ends?**

Before looking at new options, it is useful to review what will remain in place to support U.S. manufacturing milk prices after 1999.

The U.S. government will maintain border protection--tariff rate quotas (TRQs)--that will keep U.S. manufacturing milk prices from being depressed substantially by imports of foreign dairy products. The TRQs sharply limit imports of most dairy products, with the notable exceptions of cheese and casein. By limiting imports the TRQs prevent U.S. manufactured dairy product prices from equating to prices in low cost producing areas (mainly Australia and New Zealand) plus freight. Thus, U.S. manufacturing milk prices are determined chiefly by domestic supply and demand conditions.

Two other programs will remain in place to support U.S. manufacturing milk prices after the current USDA dairy price support program ends. The first is a recourse loan program. The second is the Dairy Export Incentive Program (DEIP). Under probable conditions, neither program is likely to provide much support for U.S. farm milk prices.

**The Recourse Loan Program.** Starting in 2000 a recourse loan program for dairy processors--under which Commodity Credit Corporation (CCC) loans must be repaid with interest--will be implemented for manufacturers of butter, cheese, and NDM. Under this program, processors can receive CCC loans to help them finance inventories of dairy products purchased at a milk price equivalent to a \$9.90 per hundredweight support price. The USDA may have to dispose of limited quantities of dairy products acquired when processors default on loans, forfeit the product to the government, and pay the CCC the difference between the market value and the loan rate. However, the USDA is not expected to take possession of occasionally large quantities of dairy products under this recourse loan program as it has under the current price support program. The new recourse loan program probably will find only limited use since there is little evidence that processors find it difficult to obtain private credit at reasonable interest rates to finance dairy product inventories. Hence, a recourse loan program for dairy products is unlikely to provide a floor under U.S. milk and dairy product prices.



**THE DEIP.** The DEIP was authorized by the 1996 Farm Bill to continue through 2002. By expanding exports, this program has increased domestic dairy product prices. However, as a result of commitments made by the U.S. to reduce export subsidies under the Uruguay Round GATT agreement, the maximum permitted DEIP exports of butter, cheese, NDM and whole milk powder (WMP) in 2000 as a percent of 1998 U.S. production are as follows [3,7]:

Butter & Butteroil	4.4%
Cheese	0.1%
NDM	13.4%
WMP	0.1%

Thus, the U.S. will be able to export only a limited amount of butter, cheese, and WMP with DEIP subsidies in 2000, causing the subsidies to provide little support for prices of these items. At first glance, the figures suggest that the DEIP might be useful for supporting U.S. NDM prices since about 13% of annual production of that product can be exported with subsidy. However, if the U.S. "structural surplus" of NDM is equivalent to about one-third of U.S. production, U.S. prices for NDM are likely to fall to near low world prices for this product. Figure 1 shows just how low the price floor provided by world prices (as measured by FOB Northern Europe prices) of NDM might be. If U.S. NDM prices do fall to world levels, exporters of U.S. NDM will not need DEIP export subsidies to make prices of this item competitive with prices offered by foreign competitors. Hence, the DEIP for NDM probably will find limited use after 1999.

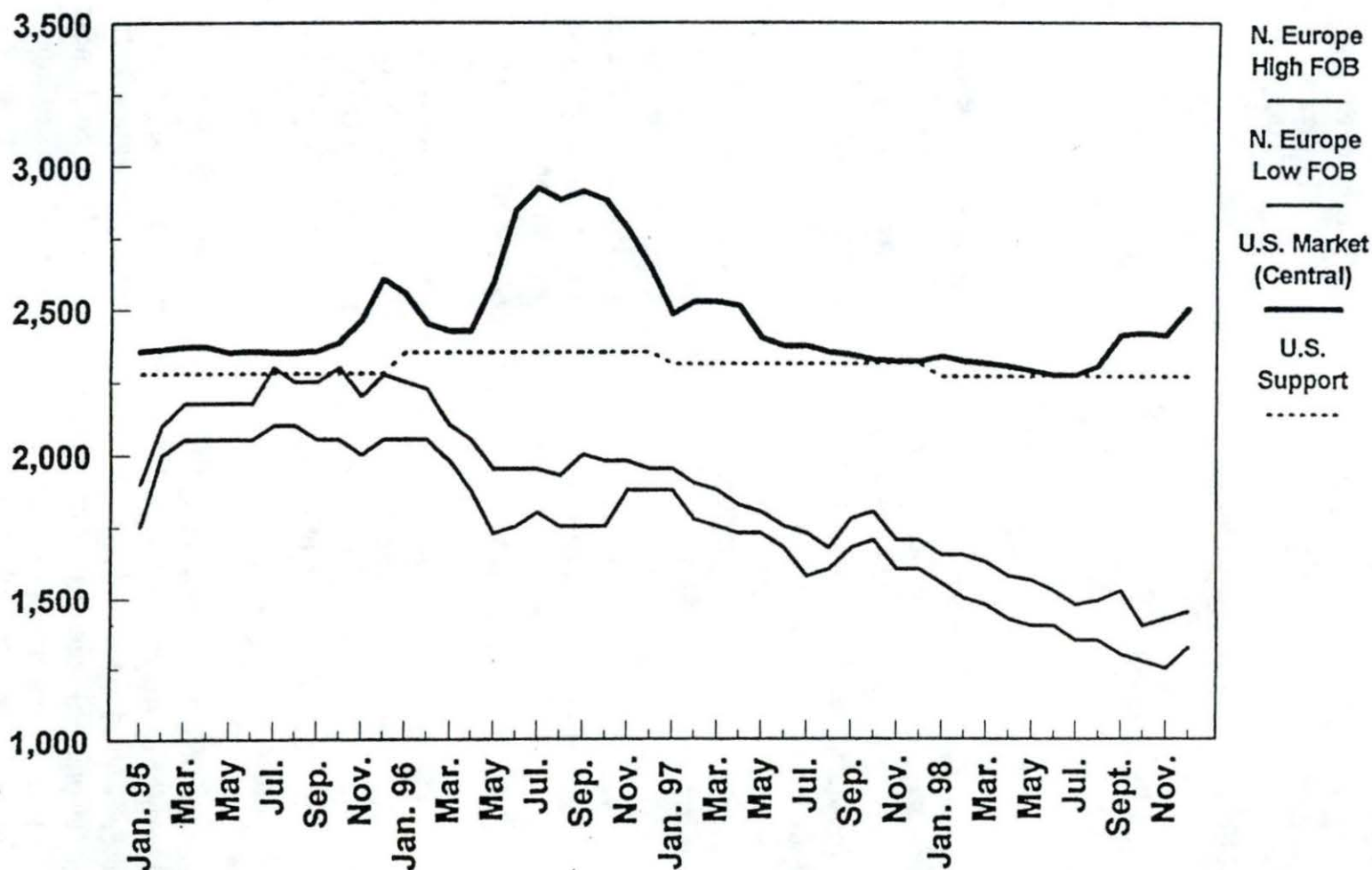
Of course, one should not overstate the case regarding the lack of usefulness of DEIP subsidies for NDM. U.S. prices for NDM at certain times of the year may not fall to near world levels. The DEIP export subsidies would provide modest amounts of support for U.S. NDM prices at such times.

There are other devices that will add support to fluid milk prices. The federal milk order program will remain in place and dairy compacts are likely to find expanded use. According to Bailey's estimates, dairy compacts under plausible conditions can add from \$.75 to \$1.00 per hundredweight to producer prices in compact areas [2]. Hence, producers in high fluid milk utilization markets will have significant incentives to create or expand the compacts.

Figure 1.

# **WORLD NONFAT DRY MILK PRICES** (Extra Grade)

\$/Metric Ton



Source: USDA, "Dairy: World Markets and Trade," FD 3-98, Dec. 1998.



## New Options

New options for dealing with the dairy Y2K problem include (a) extending the current dairy price support program until 2002 (or some later date), (b) adopting a nonrecourse loan program for dairy products, (c) replacing the current price support program with a special price support program limited to NDM, (d) establishing a marketing agency in common for export sales and donations of NDM, (e) implementing an import substitution programs for casein and/or cheese, and (f) creating a revenue insurance program for milk producers. These options are briefly considered in turn below. Variations of several of the options have been discussed by the NMPF. However, the options described below are not exclusively those proposed by the NMPF and are not necessarily supported by the NMPF.

**Extending the Current Price Support Program Until 2002.** This is perhaps the simplest and most workable option. The current dairy price support program has been relatively inexpensive. Budget outlays for the USDA's dairy price support program have averaged only about \$71 million per year during 1994 to 1998 [6]. Arguments for such an extension can be made from equity and economic adjustment standpoints.

Under the 1996 Farm Bill, U.S. dairy farmers failed to receive transition payments (technically designated as "Production Flexibility Contract Payments") comparable to those received by grain producers for 1996-2002. It could be argued that equity considerations call for continuing the present dairy price support program to provide dairy farmers with benefits comparable to those received by grain producers.

Secondly, it can be argued that extension of the current dairy price support program for a finite number of additional years would provide a price safety net and help ease the transition to larger farms that is rapidly taking place in the U.S. Extension of the dairy price support program until 2002 could be of particular value as a safety net for small farmers who are nearing retirement or are in the process of expanding to a competitive size.

What is the downside to continuing the present dairy price support program until 2002? First, it would delay adjustments in the U.S. dairy industry aimed at expanding exports of dairy products. Economists are fond of saying that "incentives are everything." If the dairy price support program were ended after 1999, U.S. firms would have incentives to export



NDM because the price of that product likely would fall to world price levels at times, making U.S. NDM more competitive in international markets. Thus, NDM could be added to the list of U.S. dairy products--e.g., ice cream, dried whey, lactose, whey protein concentrate, and infant formula--that are competitive in world markets. However, ending the USDA's dairy price support program probably would not make U.S. butter and bulk cheese competitive in international markets since U.S. TRQs and domestic supply-demand conditions probably would keep prices of those products above world prices much of the time. Hence, if the U.S. really wishes to become competitive across the board in dairy exporting, the TRQ's would need to be less restrictive of dairy imports. A proposal for opening U.S. markets to additional dairy imports during the present farm recession is likely to be a nonstarter.

Secondly, the price support program raises consumer prices by some small amount. Consumer groups would obviously attach more importance to this consideration than would dairy processors and farmers.

**Adopting A Nonrecourse Loan Program for Dairy Products.** This program would take a page from farm programs for grains. Under such a program processors could put dairy products under CCC loan at established support prices. If market prices for dairy products rose to levels substantially above the support price, the processor could repay the CCC loan with interest and reclaim the inventory. If dairy product prices remained below support levels, the processor could forfeit the products to the CCC to satisfy the loan. It is the ability to routinely forfeit the product to the CCC to satisfy the loan that distinguishes nonrecourse loans from the recourse loan program described earlier.

If you conclude that this program sounds nearly identical to the current dairy price support program, you are correct. The difference is that private firms probably would be more involved in storing and managing inventories of dairy products under a nonrecourse loan program. However, if support is to be maintained for dairy products, the differences between a nonrecourse loan program and the current dairy price support program are sufficiently small that it probably wouldn't make much sense to adopt a nonrecourse loan program for dairy products.

**Replacing the Current USDA Dairy Price Support Program with A Support Program for NDM Only.** The logic for this option rests partly on the assumption that price supports will be needed only for NDM. The



NMPF estimates that under a best case scenario and absent a price support program, the price of NDM could fall from about \$1.05 per pound to \$.85 per pound on an annual average basis. According to the NMPF, the \$.20 drop in NDM prices is the net effect associated with removing dairy supports and recognizes that the change would produce an increase in commercial exports of NDM and expand domestic sales of lowfat and nonfat dairy products.

The NMPF estimates that the impacts of removing NDM supports are as follows [4]:

$$(\$0.20 \times 8.7 \text{ pounds of solids per cwt of milk} = \$1.74)$$

$$(\$1.74 \times 160 \text{ billion pounds of U.S. milk production} = \$2.78 \text{ billion})$$

Clearly neither the NMPF nor anyone else would claim that the impact would be precisely \$1.74 per hundredweight given the complex dynamics associated with removing supports from U.S. dairy product prices. Indeed, the NMPF implies that the negative impact on U.S. milk prices would be substantially larger under two other scenarios. But it is reasonable to suggest that elimination of the dairy price support program--in the presence of a large structural surplus of NDM--will put noticeable downward pressure on U.S. milk prices.

It follows from this arithmetic that retaining price supports for NDM would be a viable option for the U.S. dairy industry. As noted above, the logic for this program, which is limited to NDM, is that the industry is not going to need supports for butter and cheese. This assumption ignores the fact that during 1990 to 1998 the U.S. price of butter fell to within 5% of the support level nearly as often as the NDM price. Specifically, average monthly U.S. butter prices fell to within 5% or less of the support level 37% of the time during 1990-1998 while U.S. NDM prices fell to within 5% or less of the support level 45% of the time during this period [8].

Wouldn't it make sense to retain supports for butter, cheese, and NDM in case they are needed to prevent a sharp drop in prices? If supports are really not needed for butter and cheese, they won't cost the government anything.

**Establishing an Export Marketing Agency in Common for NDM.**

Under the Capper-Volstead Act, cooperatives would be permitted to form an export marketing-agency-in-common (MAC). The NMPF suggests that



such a mechanism could be used to move 165 million pounds of NDM overseas each year through a combination of commercial export sales and humanitarian donations [4]. The NMPF assumes that the MAC would operate in concert with DEIP programs which would export with subsidy 150 million pounds of NDM per year and that 85 million pounds of NDM would be donated annually to various outlets by the USDA.

The simplified arithmetic suggests that a MAC could support the domestic NDM price at a level equivalent to the dairy price support program with a \$1.00 per pound support purchase price. Further, it was assumed that the MAC could recoup about \$0.65 per pound on the export market for 165 million pounds of dry milk per year. The NMPF describes the costs and revenues associated with the operation of the MAC as follows [4]:

(MAC cost \$1.00/ lb. purchase price x 165 million pounds = \$165 million)	
(MAC revenue \$0.65/lb. selling price x 165 million pounds = \$107 million)	
(MAC deficit	= \$57 million)

If the \$57 million MAC deficit was funded on a per hundredweight basis by all U.S. dairy producers, the rate would be about \$0.04 per hundredweight on all milk marketed, as noted below:

$(\$57 \text{ million} / 160 \text{ billion pounds of production} = \$0.036 \text{ per hundredweight})$

The rate of assessment would be double if only half of U.S. dairy producers participated.

The NMPF argues that a MAC would be consistent with current U.S. commitments to reduce export subsidies under the WTO because it would not involve government action and would be voluntary.

This plan has a number of things going for it. It recognizes economies cooperatives could achieve from pooling resources needed for exporting, the specialized expertise required for exporting, the need to be a reliable supplier of high quality NDM for the export market, that cooperatives produce a large share of the bulk NDM (probably 85% to 90%) that would be exported, and applies to dairy exporting principles that work successfully in other common marketing agencies.

But in the basketball vernacular it is no "slam dunk." Each cooperatives participating in the export MAC for NDM would find it necessary to work closely with other cooperatives involved in the initiative.



There also would be a strong need for cooperatives participating in the program to persuade members of cooperatives that don't produce NDM and nonmembers that the plan carries benefits for them and that "free riding" would undermine the program. These are not simple things. They probably would be doable only if it was apparent to many in the U.S. dairy industry that the current price support program was really going to be eliminated and that a successful MAC was needed to prevent a substantial drop in milk prices.

Apparently the plan would be GATT/WTO compatible and would not be considered to be a producer-financed export subsidy that would be counted against the subsidized NDM export total agreed to by the U.S. in the Uruguay Round GATT agreement. At least a few knowledgeable people with whom I have discussed the matter come to this conclusion, noting that producer contributions under the program would be voluntary and that the government would not be involved in running the program. I am a bit skeptical about this conclusion, especially since the program might be considered to be an extension of, or supplement to, the DEIP. In addition, the plan might be challenged on the grounds that it represents export dumping. Dumping occurs when products are sold in export markets at less than the cost of production and less than the price at which the products are sold in the domestic market.

**Establishing an Import Substitution Program for Casein and Cheese.** The NMPF has presented figures that are helpful for analyzing the feasibility of creating an import substitution program for casein and milk protein concentrate, both of which are imported by U.S. firms with zero tariff. A cheese import substitution program also might be considered but it would not be closely related to the structural surplus of NDM.

**An Import Substitution Program for Casein.** As was the case with the MAC, the NMPF makes the assumption that the casein import substitution program would supplement the DEIP for NDM and distribution of NDM under government aid programs. Thus, DEIP exports of NDM would be 150 million pounds per year and government NDM donations would total 85 million pounds per year. The NMPF reports the following about the U.S. domestic market for casein and the competitive environment for serving that market [4]:

- The 1.9 billion pound skim milk equivalent surplus (165 million pounds of nonfat solids) under the best case scenario is equivalent



to about 50 million pounds of casein, or a little more than one-third of the current domestic casein market.

- Casein is imported by U.S. firms from New Zealand, Germany, Holland, Ireland, and Poland. Manufacturers in these countries have long-standing relationships with U.S. customers and in some cases provide specialized product formulations.
- Capturing one-third of the domestic casein market will require aggressive pricing since the New Zealand Dairy Board has pricing flexibility, the European Union provides a manufacturing subsidy for casein, and Poland has export subsidies for dairy products.
- U.S. plants could process 1.9 billion pounds of skim annually producing 51 billion pounds of casein that could be sold at an estimated price of \$1.50 per pound, yielding a gross return of \$77 million. As measured by estimated sales revenue, without considering differences in manufacturing costs, casein would return about \$60 million less than NDM.

The relationship of the import substitution program for casein to the MAC is suggested by the amount by which the profitability of NDM exceeds that for producing casein. If the \$60 million revenue reduction associated with producing casein rather than NDM was pooled nationally, it would reduce the blend price for all U.S. dairy farmers by about \$0.04 per hundredweight. Recall that this is approximately the amount that all U.S. producers would have to pay to subsidize the exports of NDM under the MAC program used to support the NDM price at about \$1.00 per pound.

The USDA's Rural Cooperative Business Service is conducting a study to determine the feasibility of establishing a domestic casein industry. Findings of that study which will include estimates of casein manufacturing costs should be available in about three months. Noting the advantage associated with producing NDM, Donald Street, CEO of the dairy exporting firm, M.E. Franks, has expressed doubts about the economic feasibility of developing a domestic casein business [5].

If the NMPF estimates of the relative profitability of establishing a domestic casein industry and Street's comments are approximately correct, these points suggest that a casein import substitution program would be of doubtful merit. The MAC program would support domestic prices of NDM



and give U.S. firms useful exporting experience. The import substitution program for casein would do the same thing but require U.S. dairy producers to subsidize an unprofitable business for an extended period. It is difficult to find much that is attractive about the latter proposition.

**An Import Substitution Program for Cheese.** An import substitution program for cheese might be considered because cheese is one of the other dairy products for which the U.S. is a significant importer. In recent years, U.S. cheese imports have amounted to slightly more than 4% of U.S. consumption. This may appear to be a relatively small amount of imports, but in total U.S. cheese imports amount to more than 150 thousand metric tons of cheese per year. This puts the U.S. in roughly the same category as Japan, making the U.S. one of the two largest cheese importing countries in the world. While the U.S. could not produce cheeses comparable to certain imported specialty cheeses, some additional cheeses which would substitute for foreign imports could be produced domestically. The additional sales created by the import substitution strategy could increase domestic milk and cheese prices by a small amount.

**Creating A Revenue Insurance Program for Milk Producers.**

Revenue insurance has gotten more attention as farm programs have become more market oriented. Revenue insurance for crop producers has received more attention than revenue insurance for livestock producers. However, there recently has been a spate of discussion of revenue insurance for dairy and hog producers.

Bailey discusses how revenue insurance programs similar to those used for crops might be used for dairy farmers [1]. He argues that revenue insurance might be employed to address dairy farmers' concerns that arise if:

- The Basic Formula Price falls below some threshold level.
- Farm milk sales fall below some level (price and/or yield concerns).
- Income is squeezed because of an unfavorable milk/feed price ratio.
- Cash flow is uneven because of volatile milk prices.



While Bailey's list of dairy farmer concerns regarding risks is by no mean exhaustive, the list can be used to illustrate the types of revenue insurance programs that might be used to address such concerns.

**Price Protection.** Dairy farmers could be insured against a drop in the price below a threshold level--e.g., a BFP that drops below \$10.50/ cwt.

**Revenue Protection.** Insurance could be purchased to safeguard a farmer's revenue during a certain period of time--perhaps a year. The insurance protection would be for price, yield per cow, and number of cows.

**Milk/Feed Price Ratio.** This option would offer insurance to protect farmers from a squeeze in the gross milk margin.

**Income Shifting.** This is a mechanism to flatten out milk revenue from month to month. Under a conceivable option, farmers could pay into a program when cash flow was strong during periods of high milk prices and withdraw from the program when cash flow was tight.

Many questions are raised about such programs. Why have a price insurance program to protect against a drop in the BFP when a futures market is already available for this purpose? What should be the extent of government subsidy for the various options? Could tax deferral programs be developed to underpin an income shifting program? Can a sound actuarial basis be developed for such programs? The answer is probably yes for the price protection option, but more difficult to achieve for the other options. Would dairy farmers participate in the programs? If dairy farmers believe that disaster payments will be forthcoming in times of low prices and incomes, many will not opt to participate in the programs.

Experience with crop insurance programs should be useful for assessing the viability of some revenue insurance options for dairy farmers.

### **Summary**

Several potentially important points are raised in the paper regarding the impacts of dairy Y2K:

- Neither the recourse loan program nor the DEIP are likely to provide much support for U.S. manufacturing milk prices after the current dairy price support program ends.



- There is a substantial "structural surplus" of NDM in the U.S. which will depress U.S. milk prices after the dairy price support program ends. The NMPF estimates that the structural surplus is about 400 million pounds per year--equal to about one-third of U.S. annual production of the product.
- Several new options discussed in the paper would deal with the impacts of the structural surplus of NDM.
- While the structural surplus of NDM is the most immediate problem, butter could be a problem over the longer-run. Historical price data show that monthly U.S. butter prices fell to within 5% of the support level during 1990-1998 nearly as often as NDM prices. If the objective is to maintain farm milk prices, this information can be used to argue that extension of the current price support program would be preferable to establishing a price support program for NDM only.
- Although both could be used to support U.S. NDM prices, a dairy export MAC exhibits some advantages over an import substitution program for casein.

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