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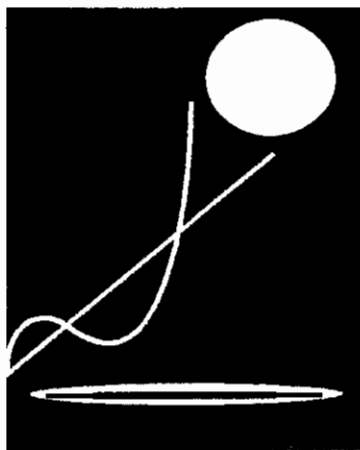
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# **Food Marketing Policy**

## **Issue Paper**

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No. 15

April 1997

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### **Cheese Pricing in a Market Driven Environment**

by

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## CHEESE PRICING IN A MARKET DRIVEN ENVIRONMENT

*by Ronald W. Cotterill\**

I want to thank the Subcommittees for inviting me to present some insights and suggestions on how to improve the integrity and efficiency of cheese pricing in the United States. As these Subcommittees well know the reduction in government support prices means that market forces and market institutions now play a significantly larger role in the price discovery process for cheese and manufacturing milk. As government regulation is reduced in any industry, from telecommunications to milk, one must expand antitrust and other market monitoring activities to ensure that effective competition prevails. In some cases one must consider public intervention not to set prices, but to set the rules and boundaries of the pricing game.

The study of the National Cheese Exchange by Professors Mueller and Marion and their research colleagues Sial and Geithman from the University of Wisconsin is a timely, carefully documented, comprehensive, and scientifically sound indictment of current price discovery practices in the cheese subsector. The Wisconsin researchers explain that the NCE was essentially a sleepy, vestigial agricultural cash market during the era before 1988 when the federal price support program pegged the price of cheese. They then proceed to document how

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it has sprung to life since August 1988 to operate as a price discovery mechanism reminiscent of its function prior to the 1930's. Problems, however, now exist because the structure of the cheese industry has changed dramatically since its earlier run as a pricing institution. Today the NCE is a thin market that is dominated by one or very few large cheese firm. Consequently, the integrity and the allocative efficiency of the prices that it produces are questionable.

The Wisconsin study, in my opinion, incontrovertibly documents patterns of conduct that require the development of new pricing institutions to ensure that cheese and manufacturing milk prices are effectively determined by competitive forces of supply and demand. This is not a small issue. Approximately one third of the U.S. milk supply is used for cheese manufacturing. Cheese prices are the major determinant of manufacturing milk prices via the basic milk price series of the Federal Milk Market order system. As documented in the Wisconsin study, prices for 90 to 95 percent of the cheese sold in the U.S. are priced on a formula basis with the NCE price as the price mover. Five to ten percent of cheese is sold in a cash spot market other than the NCE; and, less than one percent of all cheese is sold on the National Cheese Exchange. The NCE, located in Green Bay, Wisconsin, in fact is only open for business one day a week (Friday) and often trades only from 10:00 am to 10:30 am. The NCE has 35 to 40 members all of whom are cheese manufacturers, converters, marketers or brokers. They cover 90 percent of the cheese product flow (Mueller et al. p. III-7,8). Thus, trading for less than one percent of cheese production in very brief weekly market sessions sets the contract prices for more than 90 percent of cheese output which in turn is a primary factor in farm level milk prices (Mueller et al. p. II 9-10).

The integrity and allocative efficiency of pricing in this classical thin market is questionable. Since 1988 Kraft Foods, a major buyer of block cheese, has been the leading seller of cheese on the NCE. During the 1988-1993 period, Kraft made 74 percent of all sales. The market share of the next closest seller was only six percent (Mueller et al. p. VII-5). The reported evidence suggests that Kraft has, on occasion, offered for sale and/or sold cheese on the exchange to depress the NCE price to lower procurement prices in the contract market where it and other cheese marketers buy cheese from cheese plants. In addition to econometric evidence of selling cheese to lower prices, business documents confirm cases where Kraft traded against its own interest by selling cheese on the NCE at prices below those available in other cash spot markets.

An important first step towards suggesting public and private actions to improve price discovery in the cheese industry is to explain why the NCE is not self correcting. Why, one must ask, would buyers and sellers of cheese allow Kraft to use the NCE to determine prices that benefit Kraft first and the rest of the industry second? Is what is good for Kraft always good for the cheese industry? Consider Kraft's documented moves to lower cheese prices. Why don't cheese manufacturers that sell to Kraft, farmers, or farmer's cooperatives join the Cheese Exchange and bid the price up?

First, let's consider the cheese plants that sell most of their output to Kraft and other cheese marketers at formula prices based on NCE prices. They receive a lower price when Kraft drives the NCE price down, but since the basic manufacturing milk price series is also based upon the NCE cheese price, the price that they pay for raw milk also goes down. Thus,

the current pricing mechanism removes the incentive for cheese plants to bid prices higher on the NCE.

Individual farmers, (and small cheese plants if they weren't hedged out of the current pricing system) are strategically dominated by Kraft. No farmer finds it economically rational to enter the NCE and engage Kraft in a bidding war to establish the price of cheese. Marion and Mueller estimate that a one cent reduction in the NCE price per pound saves Kraft \$10 million in annual cheese procurement costs. A farmer can't buy several 40,000 pound carloads on the NCE to raise the price he receives for the few tons of milk he sells annually.

Also, as documented by Dobson and Cropp (1994), a free rider problem exists for this type of producer pricing action. Any regional cooperative effort that attempts to countervail Krafts' power benefits farmers in all sections of the country. Mueller et al. suggest that regional milk marketing cooperatives should form a common (national) marketing agency to generate market information on cheese prices and inventories. They cite the West coast example in nonfat dry milk. The organization and operation of common marketing agencies are analyzed in Cotterill (1994).

Information gathering and sharing by cooperatives, and even joint purchasing strategies by cooperatives on the NCE, may not be enough to improve cheese price discovery. Buying cheese on the NCE as some cooperatives have done to offset Krafts' unilateral price setting agenda probably is not an efficient way to improve price discovery. Under this scenario Kraft may increase sales of cheese as it apparently has done when necessary to achieve its price objectives (Mueller et al. p. VII-32). One would then have the major buyers of cheese selling lots of cheese, and major sellers of cheese buying lots of cheese on the Exchange. This

increased trading in physical product is an inherently wasteful way to discover the price of cheese. Why do farmers have to buy cheese to sell it at the price they desire? Why do marketers have to sell raw cheese to buy it at the price they desire? The very cost of the National Cheese Exchange price discovery process is probably a fundamental reason why the market is thin, and why Kraft can dominate trading. Mueller et al. give several strategic reasons for Kraft's dominance, as well. These include asymmetric information advantages (Mueller et al. VII 22-33).

Since there are entry barriers to this price discovery market, and since Kraft has credible ability to match and overpower any challenge to its channel captain role on the Exchange, why don't sellers and other buyers look elsewhere for price information to determine price for cheese sold under contract? More specifically, why doesn't the industry move to create an alternative price discovery process? Private actions by individual sellers or buyers face the same free rider problem discussed above. Mueller et al. explain the free rider problem as high transaction costs for any firm seeking to discover cheese prices on its own elsewhere. Consequently, they use "what's available," in this case the NCE price.

For private firms, other than cooperatives, assembling to discuss pricing raises Sherman Act, Section 1, restraint of trade concerns. This suggests that public agencies, including the Department of Justice and the F.T.C., have a role to play in any movement to reform cheese pricing.

The final option in any reform of cheese pricing is the role of public price reporting by USDA and state departments of agriculture. 1987 data indicates that there are only 508 cheese plants in the U.S. and the 218 plants with annual sales above \$100,000 account for 82 percent

of shipments. In 1994 there were only 449 cheese plants (Mueller et al. p. II-16). Unlike some other manufactured milk product categories, cooperatives do not operate a dominant share of these cheese plants. Cooperatives account for 43 percent of cheese production (Ling and Liebrand). Thus, even if milk marketing cooperatives could overcome regional strategic self interests to establish a common marketing agency to assemble information on spot and contract prices and cheese inventories, the resulting information may provide a biased view of overall market price and inventory levels. The information may also provide strategic benefits to cooperative competitors without corresponding competitor information being available to cooperatives. Given this context, no meaningful reform of the cheese price discovery process can be successful without a significant and leading role being played by the U.S.D.A. A national cheese price reporting system based upon spot and contract sales and inventory audits of the top 200 plants, with safeguards for confidentiality of individual firm data, is needed to reestablish the integrity and allocative efficiency of the cheese pricing system.

The state of California is embarking upon a plant audit program to measure the price of block cheddar cheese which in turn will be adjusted by a make allowance to determine the farm level price of milk. To establish procedures they collected plant level data and computed monthly cheddar prices for July 1994 to June 1995 (Gossard). Reported prices closely tracked the NCE price, usually differed from it by less than one percent, and were on average slightly higher than the NCE price (see Table 1 and Figure 1).

This result is not surprising because the preliminary information gathering by the state did not change the industry's use of the NCE price to set contract cheese prices. For public reporting to have an impact it must generate price and inventory information, disseminate that



information in a timely fashion to the industry, and establish a reputation for accurate reporting. Then firms will have an alternative reference price that can be used to formula price contract cheese sales. Using that price to set the basic manufacturing milk price would still hedge cheese plants. Now, however, cheese plants would have an incentive to use the publicly reported prices rather than the NCE prices to establish a more perfect hedge. This would lead to switching from the NCE to the publicly reported reference price.

Establishment of a strong public price reporting system would mean that the NCE, if it is allocatively inefficient, would wither and disband. Alternatively, the NCE would be forced to compete with the public pricing system. It might adjust and continue to operate. This suggests that one could not evaluate the performance of the public price reporting system by comparing its price movements to NCE prices. However, if the NCE disbands or reverts to a cash auction market where Kraft primarily buys cheese then one would have evidence that the public system provides superior price discovery and has moved cheese pricing towards competitive equilibrium.

Cooperatives may find that a common marketing agency approach gives them competitive advantages under the system. At a minimum the very process of forming a common marketing agency may enable them to aid the U.S.D.A. in designing a public price reporting system. Proprietary firms, including Kraft, also have much to offer for the design of this new pricing institution. Strengthening the cash cheese market will increase the likelihood that the nascent cheese futures markets will survive and grow. Futures markets are not a substitute for cash markets, but they do in conjunction with strong cash markets enhance price discovery. A joint government, university and industry task force with a strong mandate to establish a cheese

pricing system whose integrity and contribution to competitive cheese pricing are above reproach is the way to go forward on this matter. Perhaps this will be put in place as part of the 1995 Farm Bill mandated reform and consolidation process for the federal milk marketing order system.

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Table 1. California Plant Audit and National Cheese Exchange Prices for Cheddar Cheese

| Year | Month  | California<br>40# Cheddar<br>(\$/lb) | NCE Block<br>40# Cheddar<br>(\$/lb) | Price<br>Difference<br>(cents) |
|------|--------|--------------------------------------|-------------------------------------|--------------------------------|
| 1994 | July   | 1.2474                               | 1.2538                              | -0.64                          |
|      | August | 1.3012                               | 1.2756                              | +2.56                          |
|      | Sept   | 1.3358                               | 1.3090                              | +2.68                          |
|      | Oct.   | 1.3259                               | 1.3275                              | -0.16                          |
|      | Nov.   | 1.2861                               | 1.2720                              | +1.41                          |
|      | Dec.   | 1.2267                               | 1.2088                              | +1.79                          |
| 1995 | Jan.   | 1.2229                               | 1.2169                              | +0.60                          |
|      | Feb.   | 1.2751                               | 1.2740                              | +0.11                          |
|      | Mar.   | 1.2999                               | 1.2913                              | +0.86                          |
|      | Apr.   | 1.2301                               | 1.2138                              | +0.163                         |
|      | May    | 1.2073                               | 1.2013                              | +0.60                          |
|      | June   | 1.2521                               | 1.2525                              | -0.64                          |

Source: Gossard.

Figure 1 California Plant and NCE Prices for Cheddar Cheese

