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Milk Market Channel Structure: Its Impact on Farmers and Consumers, and the Inadequacies of Antitrust Enforcement as a Foundation for Dairy Policies: Evidence from the Northeast Dairy Industry

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by

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Milk Market Channel Structure: Its Impact on Farmers and Consumers, and the Inadequacies of Antitrust Enforcement as a Foundation for Dairy Policies: Evidence from the Northeast Dairy Industry

I. Introduction

The U.S. dairy industry involves more than consumers, and dairy farmers. Dairy cooperatives assemble and market their member's milk. The nation's dominant dairy cooperative, Dairy Farmers of America has a strategic alliance with other cooperatives, Dairy Market Services, which in turn has a full supply contract with the nation's two largest fluid milk processors, Dean Foods, and National Dairy Holdings. Fluid processors and the retail distribution system, most notably large supermarket chains, have recently become extremely powerful players in milk market channels. This is well known to anyone who follows issues in the industry, however, virtually all of the economic analysis of federal and state dairy policies assumes that dairy market channels are competitive.

Moreover, or perhaps as a consequence of the constrained analytical approach, resulting dairy policies are almost exclusively based upon competitive channel assumptions. Alternatively dairy policy makers have ignored the implications of departures from competition on policy construction and policy impacts. As this testimony will demonstrate this omission has had a particularly damaging impact on the Northeast and especially New England.

In the political arena the competitive channel assumption provides cover for milk channel firms who recommend the virtues of competition to farmers. By assumption, channel firms are competitive so their conduct escapes scrutiny and the debate focuses on dairy policies as distortions in an otherwise competitive industry. This is a most inaccurate and unfortunate framing of dairy pricing problems.

The importance of antitrust enforcement in the fluid marketing channels should now be clear. If vigorous and effectively competitive conditions prevail then these "Chicago School" competitive market models of agricultural production and food marketing channels have more standing.

However, we submit that in several areas of the country, dairy farmers have been the victim of a pincer movement in policy. Dairy policies have been relaxed to allow market forces to determine farm level milk prices. For example, when discussing federal fluid milk market orders, Jesse et al. state that fluid milk market orders should,

"Allow competitive forces to determine effective prices. Administered federal order prices are designated as minimum prices. If the cost of supplying fluid milk relative to supplying manufacturing markets is greater than the Class I differential, then cooperatives can and do obtain premiums to cover the difference and raise the effective Class I price to a competitive level" (Jesse et al, 2002, p. 23)

At the same time antitrust enforcement has failed to challenge successfully horizontal mergers and vertical strategic alliances in many regional milk marketing channels including New England. Consequently, we now have very few, large, and interconnected firms in many regional and local dairy market channels. In regions where this is the case and the federal order minimum prices for fluid milk have been lowered to make room for competition, competition can be subverted by powerful buyers that leave fluid milk prices below competitive levels.

The promoters of increased concentration in processing and retailing have claimed that economies of size bring cost efficiencies that result in lower consumer prices. Empirical evidence paints a stark and different picture. In New England, the Pacific Northwest and elsewhere, supermarket fluid milk prices are extremely high when compared to raw fluid prices and processing and retailing costs (Rabinowitz et al. 2003, Cotterill et al. 2003, Robinson 2003). In this paper we will illustrate how the dairy policy and fluid milk pricing problem has changed in the New England fluid milk channel since the mid 1990's. We will do so by explaining how the structure of the New England fluid milk channel has changed, how fluid milk policies have changed, the interaction between policy and channel structure, and the impacts on farmers, channel firms, and consumers. A central theme to this narrative is the interplay of public and private market power with their impacts on raw fluid and retail fluid milk prices. We will demonstrate that milk pricing has changed and channel firm net profit margins have widened as channel concentration has increased. The case study also strongly suggests that market power is being exercised against farmers in the Northeast via low over-order premiums as well as against consumers in Southern New England via higher retail prices.

II. The Inadequacy of Antitrust Enforcement: Rising Concentration and Vertical Strategic Alliances in the New England Milk Marketing Channel

Since 1996, several major structural events occurred in the New England supermarket and fluid milk processing industry. In this section we will document changes in market structure at the supermarket, processing, and milk assembly stages of the fluid milk channel. We also will review salient antitrust actions, explain how antitrust enforcement was inadequate, and offer some observations on current antitrust issues.

II.1 The Increase in Concentration in Supermarket Retailing in New England

The watershed merger for the diminution of supermarket competition in Southern New England is the Royal Ahold acquisition of Stop and Shop in 1996. Stop and Shop was, and is today, the leading supermarket chain in Southern New England. Royal Ahold/Edwards supermarkets was the number two chain in many local markets in Southern New England. The Federal Trade Commission (FTC) and the Massachusetts, Connecticut, and Rhode Island Attorney Generals adopted a fix it strategy and negotiated a major divestiture of 31 supermarkets with sales of over \$600 million to smaller competitors in an attempt to preserve competition.

As an economic expert for the states, the lead author of this testimony provided the market area analysis and negotiated with the FTC and parties in this matter. We created Adams Supermarkets, a new local supermarket chain owned by Bozzutos Wholesale, Cheshire, Connecticut; divested stores to Shaws Supermarkets, a new and expanding entrant into Connecticut, to Ro-Jacks, a 5 store independent in Providence, and to others. Royal Ahold converted all its remaining Edwards to Stop and Shops.

In retrospect, the antitrust agencies should have challenged this merger rather than attempt to fix it via divestiture. An extensive ex post analysis of pricing in many of the divested stores (Cotterill et al, 1999) supports this conclusion. The operators of the divested stores competed on price for several months, however, when Stop and Shop retaliated with lower prices in neighboring stores, after a few months of punishment, the operations of the divested stores caved in and followed Stop and Shop to higher price levels.

Ro-Jacks supermarket went bankrupt attempting to operate the five additional supermarkets that

were much larger than its original five stores. Two of the ten Adams Supermarkets are now closed and the chain has not grown.

Today, Stop and Shop is the unchallenged leader in Southern New England with market shares above 50% in many local "antitrust" market areas. Several other horizontal mergers, including Shaws 1999 acquisition of the Star Markets in Boston, have also contributed to the increase in supermarket concentration. Table 1 gives the market shares and four firm concentration ratios for the three aggregate IRI market areas that cover virtually all of Massachusetts, Connecticut, and Rhode Island (Trade Dimension, 2003). Market concentration and the trends to increased concentration reported in Table 1 are undoubtedly higher in smaller geographic antitrust market areas because chain stores are not uniformly distributed throughout an IRI area. Table 1 gives store numbers and market shares for the top four supermarket chains in 1996, 2000, and 2003 for each IRI area.

The Boston IRI area which is all of eastern Massachusetts except Cape Cod, is the least concentrated; however, the partial HHI (top four firms) increase from 1,325 in 1996 to 1,765 in 2003. Stop and Shop store numbers increases from 68 to 88, and its market share goes up from 26.2% to 32.8%. Shaws market share jumps to 26.7% in 2000 because it was allowed to acquire Star Markets. Note that its store numbers remained unchanged at 80 between 2000 and 2003, but it lost 4.5 market share points. The market positions of DeMoulas and Roche Brothers, two strong local chains, remained stable throughout this period.

The Providence IRI area is the State of Rhode Island. The market share levels and trends document Stop and Shop's dominance in 1996 and growth into an even stronger dominant position. In 2003, Stop and Shop's share of supermarket sales was 51.5 percent. Its only significant rival is Shaws with a distant 20 percent of the market. The partial HHI is extremely high at 3,120 points.

The Hartford IRI market area includes virtually all of Connecticut and western Massachusetts. Again, Stop and Shop was the dominant firm in 1996 with 60 stores and a 40.4 percent share. By 2003 it expanded to 69 stores and 49.5 percent of the area's supermarket sales. The biggest loser was A&P who exited many markets in the area. A&P operated only nine stores in 2003, down from 35 in 1996, and its share was only 2.9 percent in 2003, down from 11.7 in 1996. Some of the stores that it sold were state of the art, recently constructed superstores, and curiously some were sold to Stop and Shop. In our opinion a sale to the area market leader should not have passed antitrust muster. If Stop and Shop and the acquired A&P were not in a more narrowly defined antitrust geographic market, one should revive the potential competition argument when dominance by Stop and Shop in the region is so pervasive. Price Chopper, a New York firm that has been trying to enter New England for years, is a more suitable buyer. The partial HHI for this very large IRI area has increased from 2,021 in 1996 to 2,695 in 2003. As in Providence, this is far above the federal merger guidelines upper threshold of 1,800.

Stop and Shop routinely engages in real estate practices that are explicitly designed to protect its market position. In Putnam, Connecticut, Stop and Shop has held the lease and kept a store empty (an old Edwards store) since 1996 in a downtown shopping plaza. It also has objected to the landlord renting an empty K-Mart Store in the same plaza to Price Chopper, a formidable competitor, on the grounds that the lease for the dark Edwards prevents any other site in the plaza from being rented to a grocery store. Such exclusivity clauses are common in leases in shopping centers; however, it is most extraordinary for a supermarket to rent and hold empty a store in a center and then attempt to exercise the exclusivity clause to keep a supermarket out of another store site in the center. As a result of Stop and Shop's actions, the shopping plaza has

died and is an eye sore in the center of town. The town's library sits in the middle of this dilapidated strip mall. Consider the impact on kids that should be using the library. Civic pride suffers. In 1999 when we surveyed supermarket prices in 19 Royal Ahold stores in Connecticut and Pennsylvania we found a strong correlation between the HHI and Royal Ahold price levels. Putnam, with a single Stop and Shop, one smaller old supermarket was the most concentrated market. It also had the highest prices of all the supermarkets that we checked (Cotterill, 1999 p. 16). Stop and Shop's motive seems clear. They exclude competitors and charge higher prices. Figure 1 and 2 provide price evidence on milk pricing at Stop and Shop in the Hartford and Providence IRI areas. Note that after the Royal Ahold acquisition, Stop and Shop's milk price moved up in both market areas and remained higher than those of all other supermarkets. The crossover occurs earlier in Hartford than Providence possibly because the acquisition was completed earlier in Connecticut than in Rhode Island where the debate over divestiture to Ro-Jacks delayed settlement several months since 1996. Stop and Shop is the price leader in Southern New England for milk and has led prices up.

II.2 The Increase in Concentration in New England Fluid Processing

Since 1972, the market structure of fluid milk processing in New England has collapsed to a single dominant firm, Dean Foods, with extensive private label processing, the Garelick fresh milk brand and other secondary brands. In July 1997, co-temporal with the Dairy Compact implementation, Suiza Dairy, the precursor of Dean Foods, purchased the Garelick Company and entered New England. In July 1998, Suiza purchased another leading New England milk processor, West Lynn Creameries; and in August 1998 it purchased yet another leading processor, Cumberland Farms. Cumberland Farms had a reputation for being aggressively competitive when bidding against Suiza/Garelick for private label contracts (Healy). The Cumberland merger should never have been sanctioned by the antitrust authorities. Thereafter, Suiza purchased Natures Best Dairy in Rhode Island and attained control of New England Dairies in Hartford, CT through a joint venture with Dairy Farmers of America.

On June 1, 2000, Suiza/Garelick commenced supplying private label milk and Garelick brand milk to Stop and Shop. Prior to that, Stop and Shop processed its own private label milk in addition to processing and distributing the Hood milk that it sold in its supermarkets. Moreover, Stop and Shop also controlled the marketing, including pricing of Hood milk in its stores (Beatty). This means that for Stop and Shop there is no question over who controlled prices on 80 percent of the milk that it sold prior to July 2000.

The 15-year strategic alliance contract (Gorenstein) that ties Stop and Shop to Suiza was scrutinized and modified by the New England state attorney generals on antitrust grounds. The states alleged the following:

"the February 2000 transaction would increase concentration in the market for sale of fluid milk products in New England by reducing the level of milk processing capacity in New England that is not controlled by Suiza....Suiza could unilaterally exercise market power resulting in increased prices to retailers and consumers, and that the transaction would increase barriers to entry for Suiza's competitors and potential competitors by making it more difficult for them to obtain capital to build capacity." (Sorrell, June 25, 2001)

The consent decree provided the following resolution:

? "Suiza shall offer 30 million gallons of its New England milk processing capacity per year, for a period of five years, to its competitors. Competitors who want to utilize Suiza's New England milk processing capacity will enter into processing agreements with Suiza.

? Suiza and Stop & Shop shall not honor their past agreement to restrict Stop & Shop stores from selling competitors' milk or cream products, and shall not enter into any agreements in the future to restrict Stop & Shop stores from selling competing brands.

? Stop & Shop shall not sell the milk processing assets of the Readville plant to Suiza, and may only sell the assets to a party approved by the Vermont Attorney General.

? Suiza shall not purchase or otherwise acquire an ownership interest in any dairy processing facilities in New England without first notifying the Vermont Attorney General and allowing the Vermont Attorney General time to investigate the proposed transaction.

? Suiza shall not sell, close or cease operations of any New England dairy plants without first notifying the Vermont Attorney General." (Sorrell, June 25, 2001)

In a separate agreement Suiza agreed to continue purchasing its raw milk from Stop and Shop's traditional supplier, St. Albans cooperative. Leon Berthiaume, General Manager of the St. Albans Dairy Cooperative, said:

"We appreciate the extensive efforts of the Vermont Attorney General's Office to protect the interests of consumers, farmers and processors in our state. The results of this process will prove to be beneficial to all interested parties." (Sorell, June 25, 2001)

John Kaneb, President of HP Hood Inc., a company whose products would have been disadvantaged by the agreement, also praised the settlement:

"I congratulate the Vermont Attorney General on bringing about a result that helps preserve competition in the New England dairy industry, while allowing a commercial transaction between private parties to go forward. This is constructive antitrust policy in action." (Sorrell, June 25, 2001)

Table 2 gives an estimate of the market shares in all of New England for the leading milk processors for the year ending June 30, 2000. We have no more recent data; however, these shares are reasonably accurate today. Before the Stop and Shop private label contract Suiza/Garelick accounted for 44.8 percent of fluid milk sales to supermarkets. This is more than twice the share of the number two processor, Hood. Suiza/Garelick is nearly three times larger than Hood if one removes the Stop and Shop Hood milk from Hood's share. After the June 2000 closing of the Stop and Shop plant, Suiza controlled 63.7 percent ($44.8 + 18.9$) of the New England supermarket channel. This market share may have increased since then because in the 15 year strategic alliance, Stop and Shop clearly has less incentive to sell Hood milk (Baily, March 24, 2000).

After the consummation of the Stop and Shop deal, Suiza/Garelick may sell more than four times the volume of milk than its nearest competitor, Hood, sells in New England. The Suiza/Garelick market share in the smaller Boston IRI market is even higher and probably falls in the 80-90

percent range after the Stop and Shop acquisition.

Strictly speaking, these market share estimates are for the supermarket channel; however, Suiza/Garelick's dominance in other channels is most probably similar. There are very few alternative suppliers. Also, one could include milk plants around Albany, New York in the market. Both Suiza and Crowley have plants there. Such changes do not alter the following conclusion. By 2000, Suiza was unmistakably the dominant milk processor in New England.

As Suiza acquired its market share, it actually closed or caused the closure of several very substantial milk plants including the Stop and Shop Readville, MA plant, the New England Dairies plant in Newington, CT, and the Cumberland Farms-Massachusetts plant. Today it operates two large plants in southern New England in the Boston IRI market area (Franklin, MA and West Lynn, MA). Suiza's East Greenbush, New York plant near Albany and two smaller plants in Vermont and Maine also supply milk to New England. As a result of Suiza's related plant closings, by 2000 there was dramatically less processing capacity in New England and little excess capacity outside of the Suiza plant system (Healy).

Suiza's rise to dominance in the New England market was associated with a visible elevation and changed pricing philosophy relative to Hood. In Figure 3, the Garelick and private label retail price moves in 1999 and 2000 that widen the marketing margin are at least in part due to price leadership by Suiza-Garelick at the processor level.

The only other explanation for the disappearance of the gap between Hood and the other two products in Figure 1 is that retailers exclusively controlled the retail prices and priced in a fashion to generate a very significant shift in volume away from private label and Garelick to Hood. In fact for the market leader, Stop and Shop, the incentive was to disadvantage Hood.

On April 5, 2001, Suiza Foods, the number two fluid processor in the nation, announced that it was merging with Dean Foods, the nation's largest processor, to create a company named Dean Foods that would control approximately 40% of the nation's fluid milk processing. In many regional fluid processing markets, but not New England, this merger created serious antitrust problems. After negotiation with the U.S. Department of Justice, Antitrust Division, the merger was consummated in December 2001. The DOJ required Dean to divest 11 fluid milk plants to three individuals and Dairy Farmers of America, who sold its 1/3 interest in Suiza back to the company. DFA and the private owners each own one half of the newly created company, National Dairy Holding (U.S. DOJ, 12/18/2001; PR Newswire, 12/21/2001). Dean remains the nation's largest fluid processor with \$8.12 billion in sales in 2002, and NDH is the third largest with \$2.3 billion sales (Dairy Field, 6/2003). Soon thereafter National Dairy Holdings acquired Crowley Foods (Binghamton, NY) from a Dutch multinational. In that deal, NDH entered the New England fluid market because Crowley owns Weeks Dairy in Concord, New Hampshire, and a fluid plant near Albany that can ship into New England.

II.3 The Increase in Concentration in Fluid Milk Assembly and Vertical Relationships with Processors.

Both the National and the New England fluid milk industries are an example of the replication hypothesis, a venerable idea from industrial organization theory. As economic concentration occurs at one stage in a multistage channel, the replication hypothesis predicts concentration increase at other stages in the channel. Indeed, large fluid milk processors and large fluid milk cooperatives often assert that "the demands" of serving dominant supermarket chains that are national, or at least multi-regional in scope, has driven consolidation in fluid processing and that

in turn has driven consolidation in cooperative milk assembly.

Until recently, milk assembly in New England was easily classified into three primary groups. The Agrimark cooperative was the largest player supplying milk to many fluid processors including Hood and Guida, current Agrimark customers. The St. Albans Cooperative shipped all of its fluid milk to the Stop and Shop milk plant. The third block of milk in New England was from independent farmers that Garelick, among others, had under contract. Agrimark and St. Albans supplied well over 50% of the fluid milk in the New England fluid milk market order prior to its consolidation in 2000 into the new Northeast milk market order that includes New York, Philadelphia, and Washington DC.

Today the situation is very different. It also is very unstable because of continuing instability in the structure of fluid milk processing in the region. The predecessor to Dean Foods, Suiza Dairy, was 1/3 owned by Dairy Farmers of America (DFA). Suiza Dairy had a fluid full supply contract arrangement for milk from DFA in regions where DFA offered milk. In the northeast, DFA includes the former Eastern Milk Producers Cooperative of NY. Eastern was a part of Milk Marketing Inc, Strongsville, Ohio and it merged with two Midwestern cooperatives to form DFA. DFA strengthened its position in the northeast in 1999 by forming a marketing agency in common, named Dairy Marketing Services (DMS), with Dairyalea, the leading dairy cooperative in NY (Associated Press, 9/2/99). Suiza Dairy (1/3 owned by DFA at this time) then strengthened DMS by making it the milk assembly agent for independent farmers nationwide. This included the independent farmers in New England. St. Albans joined DMS because its access to the fluid milk market via the Stop and Shop/Suiza agreement expires in 2006. Finally the NDH (50% owned by DFA) plants in Concord, NH and near Albany, NY are also under full supply contracts with DMS. In New England these moves have made DMS the major fluid milk assembler with Agrimark, a distant second.

Looking to the Northeast, Atlantic Dairy Cooperative was the supplier of as much as 80% of the fluid milk to the Philadelphia market order that was merged into the Northeast Order in 2000. It was acquired by Land O'Lakes. In August 2003 Land O'Lakes fluid milk assembly in the Northeast also joined the DMS marketing agency in common (The Business Journal, 8/4/03). DMS now supplies Dean Foods and National Dairy Holdings plants in New York, New Jersey, and Pennsylvania as well as New England. These plants are dominant in the northeast fluid market.

What are the impacts of the consolidation of milk assembly under the DMS banner? DMS promotes itself as a harbinger of efficient milk assembly, thereby lowering hauling charges and improving farmer mailbox prices.

"Dairy Marketing Services (DMS) is a milk marketing organization formed for the purpose of creating efficiencies and reducing costs of milk assembly, field services, and transportation. It serves farmers by working to streamline the milk marketing system, and serves processors by being better able to meet their needs." (Dairy Marketing Service, 2003).

Undoubtedly these are legitimate efficiencies. But we doubt that they are more than a few cents per hundredweight. For example, nearly all of northern Vermont milk in the DMS system today was assembled in St. Albans and that will not change. In Pennsylvania all milk in the DMS system was assembled by Atlantic Dairy/Land O'Lakes and that will not change. In upstate New York, Dairyalea, DFA, and independents shipping to Dean and NDH (Crowley) may have had overlapping costs that can be rationalized. However, that gain may not be large for larger farms that can fill a tanker or a large part of a tanker.

On the other side of the accounting ledger several antitrust concerns surface. Does DMS have monopsonistic power against farmers? Does DFA have undue influence over DMS and consequently do northeast dairy farmers lose? DFA is a multinational operation with its roots in the Midwest. Also it is a "top down" organization that behaves more like a proprietary firm than a cooperative. This may have benefits, but it leads northeast farmers to question whether it represents and acts in their best interests. Does DMS have monopolistic power in the raw milk market that enables it to extract large over-order premiums from processors and retailers?

These questions are very hard to answer with empirical evidence at this time because the DMS/DFA track record is very short. For insight, let's retreat to the documented structural changes in the dairy channel, the profit maximizing drive by all players in the channel including farmers via their cooperatives, and the economic implications of these two facts. Structurally we have dominant firms or tight oligopoly in nearly all local retail markets. We have dominance in many regional fluid milk processing markets and we have a dominant cooperative agency assembling milk. This means that many fluid milk marketing channels are faced with the successive firms with unilateral market power.

Elsewhere, we have written about the problem of double or in this case triple marginalization in a marketing channel (Cotterill 2001, 2002). As these successive firms move to exercise market power against consumers the tendency is to elevate prices too high, damaging channel profits as well as consumers. One needs a vertical strategic alliance to internalize this pricing externality, i.e. the participants at the three steps of channel must jointly set the retail price and agree upon the division of the resulting profits. One must ask if this type of vertical price fixing is legal? Is it subject to a rule of reason test that balances market power from vertical cooperation with efficiency gains from eliminating double or triple marginalization? In other words, do these vertical strategic alliances between retailers and processors, and between processors and cooperatives create barriers to entry that enhance the partners' ability to deviate from competitive pricing? Clearly the New England Attorney General thought this to be the case in the Stop & Shop/Suiza-Dean strategic alliance.

This leads us to a current antitrust matter, the proposed merger between NDH and Hood in November 2002 (Cohen, 8/4/2003). This proposed merger would combine Hood and the Crowley Albany and Concord plants. This horizontal merger should not be allowed from the consumer's side because it reduces competition in the highly concentrated New England fluid milk market. A cogent argument can also be made from the farm side of the market. The Agrimark Cooperative would lose its fluid milk sales to Hood because NDH/Hood would move into the DMS/DFA full supply contract camp. This fluid loss threatens to depool Agrimark from the fluid milk market order because the coop may consequently sell less than 20% of its members' milk in Class 1. Agrimark members would then be paid lower cheese milk prices rather than the higher blend pure that include sales at the higher Class 1 price.

Due to strong resistance from the state and federal antitrust agencies and elected representatives, NDH and Hood withdrew their merger proposal on May 12th. At that time, they announced a co-mingling of ownership rather than outright merger between NDH, Hood, and DFA. This second proposal is still under review. Again any form of interlocking directorship or management between Hood and Crowley will damage competition in fluid processing in New England.

If the combination transfers Hood fluid needs to DMS, Agrimark's alternatives include selling sufficient Class 1 milk at more distant fluid plants in the order (New York City, New Jersey) which would increase transport cost deductions for its members. The other option is to join

DMS and effectively complete the monopolization of fluid milk assembly in the northeast. If DMS in fact does achieve a monopoly on milk assembly in the northeast; will it be able to extract over-order premiums from processors and retailers? We think not. If DMS attempts to do so then Dean Foods could counter by retrieving its independent farmers and resorting to traditional pool busting pricing practices as in the RCMA era in the early 1990s in the northeast. In short, DMS can capture legitimate efficiencies, but it may be pushing on a rope if it attempts any significant over-order pricing in the northeast. This also suggests to us that in any tripartite division of profits, DMS will come up short because it has the weakest bargaining position. Processors and retailers have far stronger positions.

III. Recent Price Performance in the NY and New England Fluid Milk Marketing Channels: the Impact of Public Policies and Private Power

Events in the northeast dairy industry including changing market structures and changing federal and state dairy policies have had dramatic effects on the performance of fluid milk marketing channels. In 1991, New York passed a price gouging law that limits retail prices on one brand of milk to no more than 200% of the price paid for 3.5% raw fluid milk. This raw price includes over-order premiums that raise price above the announced federal order Class 1 price. At that time, the New York legislature also passed a law that gave the state the authority to levy over-order premiums for farmers. This subsequent law was declared unconstitutional. In effect, downstate consumers interests received their part of the logroll, but upstate farmers were denied theirs.

Why did the NY legislature pass these two laws? Huff (2003) documents that farmers were suffering from an extended period of low milk prices and downstate retail prices remained high. The lack of effective price transmission hurt consumers who continued to pay high prices and farmers because fluid consumption did not increase. Clearly the NY legislature wanted to elevate raw fluid milk prices and eliminate price gouging by channel firms.

A similar but longer raw fluid price trough occurred between October 2001 and July 2003. Figure 4 illustrates the situation for Boston. The two vertical lines indicate the period when the Northeast Dairy Compact was in effect with its price floor at \$1.46 per gallon (\$16.94 per cwt). Between October 2001 and January 2002, raw milk prices measured by Class 1 plus coop premium price series, dropped 34 cents per gallon. This price fell another 22 cents by July 2003, for a total decline of 56 cents per gallon. Retail prices dropped only 10 cents. What is going on? Agricultural economists have traditionally analyzed this price transmission problem by correlating the retail price with the farm price, controlling for changes in the prices of other inputs. The challenge to this approach is to find a good measure of other input prices. Moreover, the retail price series in Figure 4 is only for whole milk, price checked at two chain stores and one convenience store. It may not accurately reflect retail prices. Also, one routinely does not have a wholesale price in these studies so one cannot determine margins at the processing and retailing stages of the channel.

Over the past year at the University of Connecticut we have developed a different analytical approach. In November 2002, we surveyed prices in 191 stores from 35 grocery firms located in NY, CT, MA, and RI (Cotterill et al, 2002). We found that retail milk prices in supermarkets were 59 cents per gallon lower, on average, in NY than southern New England. We were able to confirm the average milk price reported for November in Figure 4 but also provide pricing details for individual chains and types of milk.

We repeated a mini survey in March 2003 of the leading chains in Connecticut and added a critical component to our analysis. We obtained wholesale milk prices, i.e., the price the processors charge for delivering bottled fluid milk into the dairy case coolers of supermarket chains, from Dairy Technomics. This firm routinely measures raw milk prices, processing, and delivery costs for supermarket chain buyers who use the information to bargain for lower wholesale milk prices. Dairy Technomics estimates are for specific plants and for deliveries to specific chains. Dairy Technomics estimates have been verified as accurate by milk processors and by outside audit (Cotterill, 2003). For example, we found that Dean Foods delivers gallons of private label and Garelick milk from its Franklin, MA plant to Stop & Shop under its 15-year strategic alliance for the price it pays for raw milk plus 52.5 cents per gallon. Dean delivers the same milk from the same plant to all other chain supermarkets in southern New England for the same raw pay price plus 61.5 cents per gallon (Cotterill et al, 4/23/03). The Dairy Technomics estimates allow us to determine the wholesale price, processor and retail gross margins. Our results for March 2003 are reported and discussed elsewhere (Cotterill et al, 4/23/03, Cotterill, 2003). Appendix Figure 1 to this testimony displays chain and brand level prices for March 2003.

In June 2003, in cooperation with the NY Attorney General, we conducted an extensive survey of New York and a replication of the November survey. We also obtained processor costs by plant for delivering to different supermarket chains from Dairy Technomics. Price survey results are reported in Rabinowitz et al (2003). Also see the Cheese Reporter article attached in Appendix ___ for an excellent review of results. This week (October 26-31, 2003) we are again surveying the same stores and obtaining Dairy Technomics estimates for the processing stage.

This series of surveys over a year where, as documented in Figure 4, farm prices were low, continued to fall and recently increased dramatically will allow us to analyze channel margins over time and changes in them as well as retail prices as farm price changes. Moreover, we can analyze changes under the price gouge law in NY and compare them to New England where there is no such law. We also can analyze price changes by brand in each of several firms including some who operate in NY as well as New England.

Since we have not had time to analyze the October 2003 data, we focus on June 2003 prices and a comparison to November 2002. The weighted average all milk price for supermarket chains in New England in June 2003 averaged \$3.01 per gallon, the same as we found in November 2002. By comparison the average price for supermarkets in NY was \$2.31 per gallon, down 11 cents from their November 2002 price. Two major conclusions follow. First, milk is 70 cents per gallon cheaper in the surveyed NY area (Long Island, metro NY city and the Hudson river valley up to Albany) than in southern New England. Second, when the raw fluid price dropped eight cents a gallon in Boston retail prices did not drop in New England but they did in New York. We concur with Huff (2003). The NY price gouge law improves farm to retail price transmission. Table 3 reports all milk prices for individual chains in NY and in New England. Note that Stop & Shop charged \$3.21 per gallon, up 3 cents from November in New England, whereas in NY the chain charged only \$2.45 per gallon, down 14 cents from November. One observes similar differentials for other chains that operate in New England and New York. Wal-Mart however is an exception. Wal-Mart charged \$2.54 per gallon in June 2003 in New England down 25 cents from its November 2002 price. Wal-Mart appears to have responded to our call for lower milk prices in New England (Cotterill, 2002). Wal-Mart prices in NY are lower at \$2.10 per gallon, however they dropped only 5 cents from November 2002.

Figure 5 is the most important chart in this testimony. It gives the raw milk prices by brand for

each of the top four supermarkets in southern New England. It also gives the Dairy Technomics wholesale dollar margin for each brand. The sum of the processor margin and the raw milk price is the wholesale price for milk delivered into the coolers at the chains stores. Finally, Figure 5 gives the retail dollar margin and the retail price by brand for each of the four chains .

The first column in Figure 5 is the all milk average for southern New England. Processors paid farmers \$1.031 per gallon and collected 59.6 cents per gallon for processing and distribution of milk to supermarket chains. The average wholesale price was \$1.627 per gallon. The average retail milk price is far higher-\$3.07 per gallon. Supermarkets kept \$1.447 per gallon, nearly half of the retail price for in store costs and profits. Research at the University of Maine and Penn State University indicate that in store costs for large chain stores is as low as 20 cents per gallon and ranges up to 42 cents per gallon in smaller supermarkets (Pennsylvania Milk Commission 2000, Maine Milk Commission 2002). We conclude that these large supermarkets are charging on average at least a dollar per gallon more than they would be able to charge in a competitive market channel. Note that the overcharge varies by brand and by location. Private label milk is lower priced and DeMoulas has distinctly lower prices than the other chains. DeMoulas retail margins are far lower than margins in the other chains.

Figure 5 also reveals a very extraordinary relationship between retailers and processors. Hood, Garelick, and Guida have developed their branded milk products, but the retailers are capturing virtually all of the brand equity. Examine, for example, Hood milk that is sold at Stop & Shop. Hood charges Stop & Shop \$1.69 per gallon at wholesale and keeps only 66 cents after paying farmers \$1.026 per gallon. Stop & Shop adds \$1.82 per gallon and retails the Hood milk at \$3.51 per gallon. Again, the in-store cost of selling Hood milk is less than 42 cents per gallon. Thus, Stop & Shop is capturing a hefty premium, virtually all of Hood's brand equity. The same is true for the other two brands of milk, Garelick and Guida, in Figure 5.

Now let's restate these prices on a per hundredweight basis to focus on the issue of price enhancement via public policy (i.e. the milk market order) versus price enhancement via the exercise of private economic power in the channel. At \$3.07 per gallon consumers are paying \$35.70 per cwt for fluid milk. Processors are paying farmers $\$1.031 \times 11.6279 \text{ gal/cwt} = \11.99 per cwt for this milk. (Since much of the milk is skim/low fat, this pay price does not include excess cream.) A recent FAPRI study suggests that eliminating the federal market orders would reduce processor pay prices by roughly \$1.50 per cwt (Brown). This elimination of "public power" pales in comparison to the $\$1 \text{ per gallon} \times 11.6279 \text{ gal/cwt} = \11.63 per cwt market power premium that supermarkets are extracting from consumers.

Private economic power and excess milk profits outweigh federal market order price enhancement by a ratio of 10 to 1 in New England. Those who think doing away with federal market orders would benefit consumers and farmers in low fluid utilization areas (e.g., upper Midwest) due to lower retail prices and increased fluid milk consumption need to think again.

The primary beneficiaries of order deregulation may well be processors and retailers.

Moreover, the use of private power in the channel is destroying the economic basis of the orders. Retailers will elevate milk prices until the demand for milk becomes elastic, i.e., the percent decline in milk sold is greater than the percent increase in price. When milk prices are elastic the Class 1 price discrimination scheme of the federal orders reduces rather than increases the blend price that farmers receive. At that point, private economic power completely destroys the classified pricing system of the federal orders.

A critical question remains for analysis. Is the margin enhancement due to the exercise of market power against consumers or is it also due solely to the exercise of market power against northeast

dairy farmers? We can actually answer this question by referring to the Jesse et al quote at the beginning of this testimony and the related federal market order reforms that occurred during the 1990s. Class 1 differentials were reduced, effectively leveling the geographic impact of the market order system's price discrimination scheme. Today, Class 1 milk at the Eau Claire, Wisconsin basing point is \$1.70 per hundredweight over the manufacturing milk price. This Class 1 differential increases as one moves east until it is \$3.25 per hundredweight in Boston. If the manufacturing milk price is \$9.75 per cwt, as it was in June 2003 then the Class 1 minimum in Wisconsin is $\$9.75 + \$1.70 = \$11.45$ per cwt and it is $\$9.75 + \$3.25 = \$13.00$ per cwt in Boston. Jesse et al call these Class 1 differentials "pricing distortions" and states that now that these are so low, competition sets regional milk prices:

"...competition has operated both within and outside the orders to mitigate the effect of these pricing distortions. For example, low Class 1 differentials in Wisconsin are augmented by large over-order Class 1 price premiums negotiated by cooperatives. Cooperatives premiums are relatively low in other markets and nonexistent in some. This tends to equilibrate effective Class 1 prices, even though the order minimum prices may be distorted. ..." (Jesse et al, 2002 p.21)

Since manufacturing milk prices are identical in Wisconsin and Boston, any federal order distortions disappear with market prices set by over order premiums. This means that the reported mailbox prices for Wisconsin and the northeast, i.e. the prices that farmers actually receive for their milk are competitive prices that reflect the supply and demand for milk throughout the nation.

Let's look at those mailbox prices for Wisconsin and the northeast. Table 4 reports them for 2002 and the final seven months of 2003. In 2002 the Wisconsin mailbox price averaged \$12.02 per cwt whereas in the northeast it was LOWER at \$11.89 per cwt. For 2003 to date they are essentially equal but in July 2003 the northeast mailbox price at \$11.63 was 63 cents LOWER than the Wisconsin price, \$12.26.

In a competitive raw milk market, the mailbox prices in the northeast should be higher not lower than those in Wisconsin. As one moves east from the Midwest prices should rise by the transportation costs. They do not.

Alternatively, northeast milk prices at \$11.89 per cwt are clearly below the cost of production for virtually all dairy farmers in the region. If a number of them go out of business and one has to haul milk or dairy products from Wisconsin, one will have to pay farmers there \$12.02 per cwt or more for their milk and also pay the transportation cost to the northeast. Milk and dairy product prices in the northeast will be higher not lower as northeast dairy farmers go out of business and product comes in from Wisconsin.

Jesse et al state that in "deficit milk markets":

"... Setting minimum prices at levels that promote year-round local fluid milk self-sufficiency is inefficient relative to setting prices that result in a combination of local production and shipments from other markets. ..."

We disagree with this presumption for the northeast given current market conditions. As our farmers go out of business, milk from the Midwest will cost consumers more not less.

So why are mailbox prices less in the northeast than the Midwest? The answer is that retailers and processors in the northeast are not paying over-order premiums that are as high as those in the Midwest. Also cheese plants in the northeast are not paying premiums that are as high as the cheese milk premiums in Wisconsin. Northeast raw milk markets, relatively speaking, are

dominated by the milk channel firms at the expense of the region's dairy farmers. Monopsony power in the northeast dairy market is a major force.

Professor Jesse from the University of Wisconsin understands this situation. As reported in a recent Cheese Report article he recognizes that Wisconsin farmers have benefited from cheese premiums as well as over-order Class 1 premiums. He also recognizes that it may be hard to maintain cheese premiums in the face of the expansion of cheap milk in the far west and new cheese plants out there. Among others he sees the following solution: a shift up from 10% of Wisconsin cheese production in value added specialty cheeses where the premium can be maintained and the capture of more of the east coast fluid milk market (Mueller, Sept 12, 2003). "Jesse leaves the door open, however, for the possibility that Wisconsin's average milk price will not be lower relative to the national average. For that to happen, ..., milk production would have to continue to fall in the East in order to open that market there for fluid milk from Wisconsin, and the state's dairy processing industry would have to shift significantly from the production commodity cheese to more specialty cheeses (about 10 percent of the state production now)" (Mueller 2003).

On the scope of fluid milk markets Jesse et al clearly think the market is now national. They state:

"Recognize the national scope of fluid milk markets. Policies need to recognize that dairy products - including fluid milk - trade in national markets. The concept of a local milkshed became obsolete when grocery chains began to maintain national distribution systems for both perishable and nonperishable items." (Jesse et al, 2002)

Dairy processors also think this way.

"By pasteurizing and homogenizing, and blow molding and filling bottles in a sterile environment, Dean now produces milk-based drinks that don't require refrigeration and can sit on a shelf for 150 days. Instead of delivering directly to stores, Morningstar can ship drinks through a network of warehouses and sell them in soda aisle of grocery stores. At \$12 million per filling line (which can do 18,000 bottles per hour), the technology doesn't come cheap. But, as Engles points out, 'somebody was going to do this. We're trying to be first.' And, of course, biggest." (Cook, 2003)

We would stress that the national fluid market that Jesse et al and Dean proclaim is not here yet and may never be the predominant fluid milk market structure. Fresh milk is still in most situations produced reasonably close to where it is consumed, and we would maintain that a low cost supply of fresh milk in the northeast will continue to be produced for the foreseeable future in the northeast.

IV. Antitrust Policy and Dairy Policies Need to Address the Low Raw Fluid Milk Prices in the Northeast

What does the rise of private pricing power in the dairy marketing channel suggest for dairy policy? We think there are two avenues. First at the federal level one could restore Class 1 differentials to levels that limit the exercising of channel firms power against farmers. After all one of the original reasons for establishing market orders was to countervail channel firm market power and restore "orderly" marketing to the milk industry. Alternatively, regional milk pricing policies in areas where this problem exists are in order to elevate farm prices.

Antitrust enforcement that prevents further consolidation also is a good idea. But in many regions, shutting this door does no good because the horse is already out of the barn. Recently, in Chicago, a consumer class action lawsuit against the dominant supermarket chains, Jewel and Dominick's failed because the price leadership scheme they use is not price fixing. Jewel sets a high price. Dominick's and others match that price. Since no one talks (conspires) with others to set the price, their conduct is legal (Zimmermann, 2003).

When antitrust is ineffective, economists look to regulation to improve economic performance. The New York price gouging law limits retail price to no more than 200% of the raw milk price processors pay. Prices, on average, in New York are 83 cents per gallon lower than in New England. New England states are now considering such laws, but these only benefit consumers. Another alternative is a price collar at the processing as well as retail level; as was recently proposed in Connecticut (Cotterill et al 2003). A 140% price collar on the wholesale price provides an incentive for processors to pay higher over-order premiums to farmers. Processors need 60 cents per gallon to cover their costs. At \$1.00 per gallon raw milk price they can charge retailers only \$1.40. If they pay farmers an additional 50 cents, then the raw price is \$1.50, and they can charge \$2.10 and recover the 60 cents. Placing a 130% price collar on retailers means retailers can charge up to $1.3 \times 2.10 = \$2.73$ per gallon. Consumers pay 34 cents per gallon less than \$3.07 per gallon, and farmers gain 50 cents per gallon. Given that farm milk prices are severely depressed, this reallocation of income in the channel may be appropriate.

The bottom line is this. It may be time for policy makers to re-examine fluid milk channel pricing and to consider new approaches to dairy policy. One has opportunities to argue for regional milking pricing policies that promote dairy farming in regions such as New England by promoting more efficient as well as more fair milk market channel pricing. Doing so also preserves the effectiveness of classified pricing under the federal orders.

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