Pricing and Policy Problems in the Northeast Fluid Milk Industry

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This article documents the need for reform of milk pricing in the Northeast. The New York price gouging law can be recast as a fair share law. This new milk policy "kills two birds with one stone." It corrects regional inequities in raw milk pricing by reforming the pricing of milk at retail by limiting and redistributing excessive retail margins to farmers and consumers. The fair share policy relieves allocative price inefficiency, improves the performance of the federal milk market order pool, and improves the general performance of the Northeast dairy farming and fluid milk industries.

Key Words: market power, bargaining, over-order premiums, fair share pricing

For dairy farming in any region of the United States, and especially the Northeast, the core of the sustainability issue is regional differences in cost of production and prices received for raw milk. Consumers are always going to drink milk and consume manufactured dairy products. A critical question is where will that milk be produced? This paper will not address regional cost of production differences.[1] Rather it focuses on regional price differences, which have been ignored since the demise of the Northeast Dairy Compact in 2001. Moreover, the regional impacts of federal, regional, and state polices, and the performance of the Northeast fluid milk marketing channel, are critical determinants of the prices that Northeast farmers receive. I will critique the operation of federal milk market orders, document the demise of competition in fluid milk pricing among supermarket chains in the Northeast, and analyze two state-level fluid channel pricing policies that can improve price performance. The first is the New York price gouging law that primarily benefits consumers. The second is a new and as yet untried policy, a fair share approach that appropriates part of retailers' margins for payment back to farmers. This second policy can be fine-tuned to reduce retail milk prices as well. It also reinvigorates federal milk market classified pricing, which has been weakened by the increasing market power of supermarket chains in the Northeast.

Regional Farm Milk Price Differences

Let's start with the issue of farm-level milk prices in different parts of the United States. As part of the federal market order consolidation process that culminated with the establishment of eleven market orders in January of 2000, Cornell University researchers analyzed the location of milk production and milk processing plants for cheese, butter, cultured products, and fluid products throughout the United States (Pratt et al. 1998). Their basic result imitates work done by milk marketing economists on pricing in milk sheds before the advent of federal milk market orders (e.g., Cassels 1937). If there were no federal milk marketing policies and milk were allowed to move in an "open market" throughout the country, farmers would have different prices for raw milk throughout the United States.

This basic result comes from the fact that fluid milk, when compared to cream, butter, and cheese, is bulky, and therefore there is an economic advantage to producing it close to its consumption point. Working in 1934, Cassels explained the

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[1] See Jesse and Jones (2003). The focus on pricing does not imply that cost of production differences are unimportant when addressing dairy policy issues. Clearly they are a major force driving structural change in the location and size of dairy farms. Nonetheless the price that farmers receive for their milk is also important

pricing and location of the production of milk for use as fluid, cream, or butter.

> The cost of shipping a given quantity of milk in fluid form being greater than the cost of shipping its equivalent in the form of cream, it will naturally be shipped from points nearer to the market than those from which cream is shipped. Similarly, since the cost of shipping cream is greater than the cost of shipping its equivalent in the form of butter (or some other manufactured product), it will tend to come from a zone nearer the market than that from which the butter comes. Suppose that the cost per mile of shipping 100 pounds of milk is one cent and the cost of shipping its equivalent in the form of cream is 1/10 of a cent and its equivalent in the form of butter is 1/40 of a cent.…If the prices for the three commodities (in this sense) f.o.b. city were the same, then at all points in the surrounding territory the farmers would obtain their best returns from milk used in the manufacture of butter and none would be available for shipment as either fluid milk or cream. In order that cream may be obtained, its city price must be higher than that being paid for butter, and in order that fluid milk may be obtained, its price must be higher than the price being paid for cream. The differences in the transportation rates will determine the distances from the market at which it will become more profitable to ship cream than milk and at which it will become more profitable to ship butter than cream [Cassels 1937, pp. 20–21].

Note that the technical properties of different dairy products and transportation cost differences dictate that fluid milk will be highest priced and produced closest to the consumption point. This result is *not* the product of federal milk market orders. What federal orders do is pool proceeds from the sale of all types of products and pay a blended price to farmers. The blend price paid to a particular farm depends on its distance from a consumption point, e.g., Boston. Orders ensure equitable treatment for farmers, i.e., their mailbox price does not depend on how their milk is used (fluid, cream, cheese, butter). Pooling removes the opportunity for milk assemblers/processors to chisel down higher value product prices by threatening to switch to farmers who sell at lower prices for cheese or butter.[2]

In 1998 Pratt and coauthors, in their base scenario for the U.S. dairy industry (no market orders), found that milk at the farm gate would be of most value near locations such as Miami and Boston, and it would have lesser value in places such as central Wisconsin and New Mexico. Such low value areas would be the reserve supply areas for fluid milk and primarily focus on the production of butter and cheese. In this spatial competitive market scenario, farmers located in the Northeast in fact receive a higher price at the farm gate than farmers in the upper Midwest. This is because farmers in the Northeast would be producing more of the higher value fluid product because they are close to major consumption points. Now, not all of the Northeast milk in the competitive scenario would go to fluid. Today approximately 60 percent goes to cheese, butter, and soft dairy products such as yogurt. However, more milk in the Northeast than in the areas of reserve supply goes to fluid.

Today, of course, we do not have open, competitive raw milk markets. However, Cassels' classic analyses and the more recent Cornell study serve as a benchmark for measuring the efficiency and regional equity of our public dairy policies. The basic point on regional equity is farmers in different parts of the country *should* receive different prices, i.e., farmers in the Northeast and Southeast should receive higher prices than farmers in areas of reserve supply, i.e., the upper Midwest and West.

But this is not the case. If one examines the mailbox prices received by dairy farmers in the Northeast and compares those to prices received in Wisconsin, for example, during 2002 and 2003 Wisconsin farmers received about the same or ten or fifteen cents per hundredweight *more* than Northeast dairy farmers.[3] Thus during the 2002–03 low raw milk price era, when New England farmers were suffering with milk prices at the farm level around $11 a hundredweight, roughly $4 below the region's cost of production for a mid-sized farm (Sciabarassi 2003), farmers in the upper Midwest who had a lower cost of produc-

[2] The classified pricing of federal orders is often seen as a government-sanctioned cartel that uses price discrimination to extract more money from fluid milk buyers and then pool the proceeds to pay a common "blend" price to all farmers in the order. As the quote from Cassels shows, this is not true if orders are relaxed to a "competitive" setting as they are today. Earlier orders were tightly set to enact price discrimination that benefited fluid producers near large urban markets

[3] One can find mailbox prices by going to the April 2006 issue of *Dairy Market News* at http://www.ams.usda.gov/DAIRY/mncs/.

tion were getting the same or a higher price. An important conclusion follows: the decline in dairy farming in New England and more generally the Northeast is due to price inequities as well as the commonly acknowledged higher production costs.

In 2004 the situation was different. Raw milk prices peaked at an all-time high, but the regional imbalance continued. For example, dairy farmers in New England received a mailbox price in April 2004 of roughly $17.11 a hundredweight, but Wisconsin dairy farmers received a mailbox price of $19.89 for a hundred pounds, $2.78 per hundredweight more than Northeast dairy farmers. In conclusion, cheese-producing areas do better at both high and low stages of the pricing cycle.[4]

Historically, at least since the 1960s, the upper Midwest has argued that the fluid milk marketing orders have kept prices high in the Northeast and Southeast regions, thereby encouraging an excess supply of milk, which has depressed upper Midwest cheese markets (see, for example, Cropp and Jesse 2003). However, over the past four years inefficiency and inequity in the opposite direction has occurred.[5] Today, we have cheese market orders, not fluid milk market orders.

Why is this the case? Federal milk market orders, in the first instance, are not the cause of this change in milk pricing. If one examines Cropp and Jesse (2003), one will see that agricultural economists in the Midwest as well as in the Northeast and elsewhere pretty much agree that federal milk marketing orders have been relaxed to the point that they do not price-discriminate on a regional basis to benefit areas with higher Class 1 fluid use. In fact, federal market orders no longer are the primary or binding factor that determine fluid milk prices (Novakovic 2004a, 2004b).

Although the federal milk market orders do enhance the orderly marketing of milk by monitoring processor payments and by operating the federal order pool payment system, the very concentrated raw milk assembly, processing, and retailing segments of the milk marketing channel have replaced the federal orders as the governor of raw fluid milk prices. In the current relaxed regulatory environment, fluid milk prices are determined by over-order premiums that cooperatives negotiate and the handler premiums paid to independent producers. The bargaining power of large supermarket chains and processors drives these premiums more than the power of milk assembly cooperatives. Cooperatives in various parts of the country on certain occasions extract premiums on both fluid and cheese market milk. However, today cooperative power and premiums are limited by the free-rider problem, just as they were during the 1920s. Processors can make it attractive for farms to defect from a bargaining unit.

As I testified before the U.S. Senate Judiciary Committee (October 2003), in this relaxed regulatory environment the major determinant of the documented regional inefficiency and inequity in milk pricing has to be the differential power of cooperatives, processors, and retailers in different regions of the country (Cotterill, Rabinowitz, and Tian 2003). Consequently, the bargaining for milk prices has taken the path that we've observed, with inverted regional price differences or price differences below the cost of transportation between reserve supply areas such as the upper Midwest and the Northeast. As shown above, inverted farm level milk prices that existed at both the recent low and high points of the price cycle would not exist in this relaxed federal order market era if regional markets were competitive and all states had uniform policies towards the dairy industry.

One would think that when cheese milk prices increase, over-order premiums for fluid milk would also increase, thereby preserving the normal pricing relationship, i.e., higher prices for milk used as fluid. Alternatively, farmers or their cooperatives would divert fluid milk to the cheese market until processors and retailers paid a higher price for fluid. The fact that this has not happened indicates the bargaining power that retailers and fluid processors have in the current market channel structure.

[4] Depooling of milk occurred during the most recent cheese price run-up, but it does not affect this interregional analysis. Depooling in a market order such as the Northeast or upper Midwest does not affect the total average price received for raw milk sales. It does, however, benefit farmers that supply cheese milk at the expense of farmers that supply fluid milk and remain in the pool. For example, Robert Wellington, an economist at Agri-Mark, explained at the 2005 Litchfield County late summer picnic that Agri-Mark depooled cheese milk and blended it over its members to raise their price 20 cents per hundredweight. Agri-Mark's action decreased the blend price 5 cents per hundredweight. DMS/Dairylea/St. Albans also depooled milk and depressed the order's blend price. Independent farmers not in those cooperatives could not depool and thus received only the depressed blend price. Depooling has even greater equity consequences in cheese milk areas of the country.

[5] Current market performance is inefficient and inequitable when compared to the competitive market norm.

During 2004 and 2005, dairy farmers in the Northeast and elsewhere in the United States enjoyed very high prices and nearly all earned a positive return on their investment. Nonetheless, regional pricing imbalances that are caused by differential bargaining power are extremely important for the long-run evolution of the industry. The documented regional imbalance in pricing, in combination with the regional differences in cost of production, does not auger well for New England and Northeast dairy farmers. As milk prices go down in 2006, Midwestern and Western farmers have more staying power for the long haul relative to Northeast farmers because they had much larger profits than the fluid area farmers during the recent "cheese market bonanza."[6]

Fluid Market Channel Pricing Problems in the Northeast

Dairy policy has traditionally focused only on raw milk prices, and interregional pricing issues have primarily been addressed through the federal milk market order program. Since its inception in the 1930s the milk market order program has essentially assumed that fluid milk marketing channels are competitive. Yet this is no longer the case, and, as explained in this section, private pricing power in the fluid channel now saps the ability of order-classified pricing to increase the farm pay price (blend price) for milk.

Turning now to analysis of the fluid marketing channel in New England and New York, one has solid evidence that retailers have and exercise substantial market power in the fluid milk channel. Figure 1 provides the federal market order's monthly retail prices for Hartford and the corresponding announced Class 1 or Compact (during the Compact era) raw milk prices from January 1996 to June 2006.[7] In 1996, the difference between retail and farm prices was approximately $1.00. Ten years later the retail farm price spread is twice that, $2.00 per gallon. The Hartford price spread line in Figure 1 documents that the gap has increased over time, with a very large discrete leap when farm prices plummeted after the demise of the Dairy Compact.[8] Since farm prices have not increased, the processor and retailer share of the consumer's dollar spent on milk has increased from roughly 40 percent in 1996 to 57 percent in 2006.

Figure 2 breaks down retail prices into retail, processing, and farm components by brand and supermarket chain for March 2003. Dairy Technomics, a firm that routinely estimates processing and distribution costs by brand for supermarket chain buyers, provided estimates which allow us to determine delivered wholesale prices. Note that the region's dominant chain, Stop & Shop, has negotiated the lowest processing cost for Garelick milk and its private label milk (which is provided by Garelick)—52.5 cents per gallon, compared to Garelick's 61.5 cents per gallon margin received from Shaw's and A&P.[9] Guida's private label and brand milk to Big Y has an even higher margin, 65.8 cents.

Note also in Figure 2 that the retailers routinely capture the largest share of the consumer's milk dollar. Criner (2003) and others estimate that the supermarket's fully allocated cost plus a competitive rate of return for gallons of milk is between 40 and 50 cents. Therefore, in March 2003, when raw milk prices were in a trough, the retailer's excess net profit, at roughly $1.00 per gallon, equaled the price that farmers received for the raw milk that was bottled. This stratospheric super-competitive profit margin documents the market power of the supermarket chains.[10]

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[6] Major dairy states, such as California and Wisconsin, clearly take care of their farms. Increasingly "fringe area" states such as in New England and the Southeast are moving to do so as well. Go to the Maine Milk Commission website to learn of its recent price subsidy program that is tailored to benefit smaller farmers most. The states of Connecticut and Vermont appropriated $2 and $8 million respectively in 2006 to subsidize dairy farm income.

[7] Cooperative premiums during the non-Compact era would raise the raw price slightly; however, the analysis of margins remains the same.

[8] The Northeast Dairy Compact was attacked as a cartel that if eliminated would result in lower prices to consumers. The fluid milk processors, through their trade group the International Dairy Food Association (IDFA), and the supermarket chains, through the Food Marketing Institute, aggressively pushed this viewpoint in Washington and more recently in the state houses in New England. In fact, soon after the Dairy Compact's demise, raw milk prices plummeted 50 cents per gallon. According to the IDFA economist's model, retail prices should have dropped 90 cents per gallon in New England. They dropped only 10 cents. Private power—not competition—replaced public power.

[9] Stop & Shop closed its own milk plant in 2000 after negotiating a 20-year supply contract with Dean Foods (Garelick). Stop & Shop used the plant as a bargaining chip to extort a very favorable price from Dean.

[10] See Cotterill (2004) for similar breakdowns for June 2003 and October 2003.

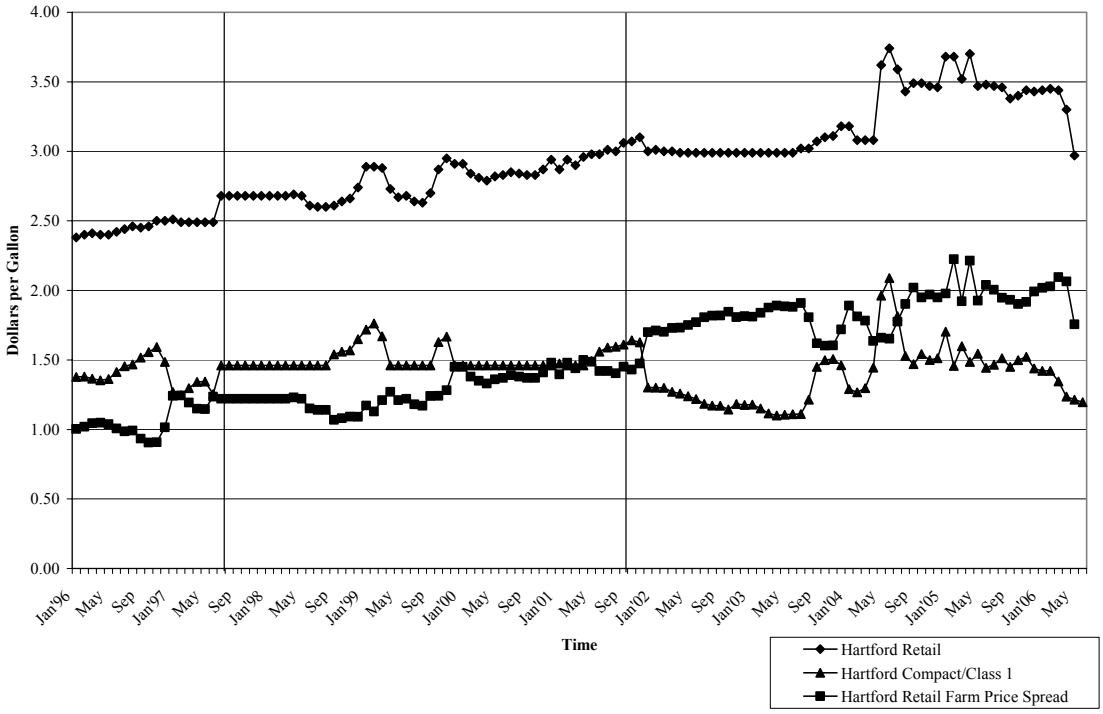

Figure 1. Hartford Market-Level Retail and Farm Fluid Milk Price: January 1996–June 2006

Source: U.S. Department of Agriculture, Market Administrator (1996–2006) and U.S. Department of Agriculture, Agricultural Marketing Service (1996–2006).

Note: Vertical lines indicate beginning (July 1997) and end (September 2001) of Northeast Dairy Compact.

Figure 2 also documents a very interesting and important fact. Branded milk processors capture only a very small portion of the brand premium that consumers pay. Retailers, who have no involvement in developing brands, capture nearly all of the Garelick and Hood brand premiums. Again, one has strong evidence of retailer market power.

Table 1 reports retail prices for different types of milk in Connecticut supermarkets during November 2005. For each type of milk in a supermarket the price is a weighted average across brands. Note that in A&P/Waldbaums all brands of milk are flat-priced across types. Thus the average price for whole milk is identical to the average prices of 2 percent, 1 percent, and skim, and the price is $3.75 per gallon. All of the other supermarket chains except Wal-Mart effectively charge the same price for milk with varying butterfat content. The Class 1 raw milk price in Table 1 indicates that raw skim milk is 13 cents cheaper than 1 percent, 28 cents cheaper than 2 percent, and 47 cents per gallon cheaper than whole milk. Flat milk pricing across milk types is yet another indicator of supermarket chain pricing power. In a competitive market retail prices would tend to follow raw milk prices. Only Wal-Mart pricing appears to reflect costs.

This documented exercise of market power by retailers is destroying the economic basis and power of milk market orders that seek to capture the value of fluid milk sales to increase pooled payments to farmers. As retailers, and possibly processors, with market power elevate milk prices, the demand for milk becomes more elastic. This means that a given percentage increase in price yields a lower increase in total revenue for fluid milk in the pool. When the "yield" from the classified pricing of fluid milk decreases, the blend price paid farmers decreases. If market

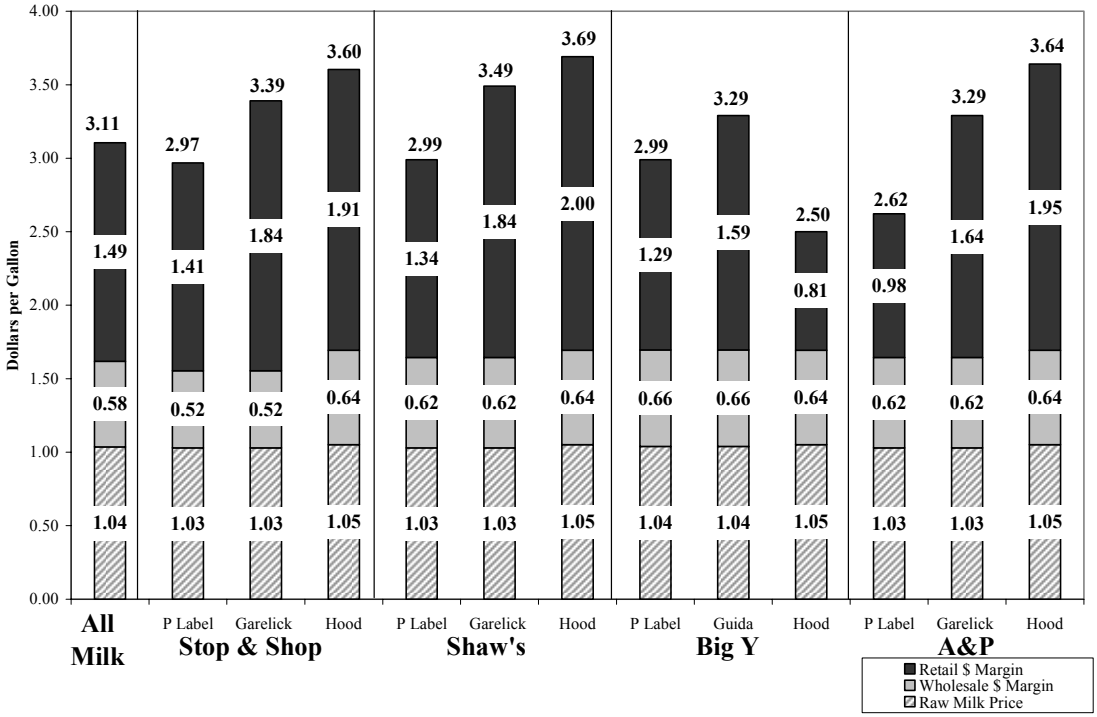

Figure 2. Actual Raw Milk, Estimated Wholesale, and Actual Retail Milk Pricing by Brand for the Four Leading Supermarket Chains in Southern New England: March 2003

Notes: Wholesale $ margin, from Dairy Technomics (2005), includes market administrator fee, processor assessment, and 1 percent plant loss. Prices are the average across whole, 2 percent, 1 percent, and skim milk and include all sales or promotional prices.

Table 1. Weighted Average Price of Gallon Fluid Milk in Connecticut by Chain (November 2005)

Store Name	Whole	2%	1%	Skim	No. of Stores
A&P/Waldbaums	$3.75	$3.75	$3.75	$3.75	3
Big Y	$3.55	$3.50	$3.50	$3.45	8
Shaw's/Star Market	$3.69	$3.69	$3.68	$3.68	7
Shop Rite	$3.88	$3.85	$3.83	$3.80	6
Stop & Shop	$3.88	$3.87	$3.86	$3.84	15
Wal-Mart Supercenter	$3.32	$3.04	$2.87	$2.71	2
Class 1 Raw Milk	$1.51	$1.32	$1.17	$1.04	

power continues to increase to tight oligopoly or monopoly levels, retail prices may move so high that we have elastic market demand.[11] Then the Class 1 price discrimination scheme of the federal orders *reduces* rather than increases the blend price that farmers receive. This is because when demand is elastic a price increase actually reduces fluid revenues. At that point private economic power completely destroys the classified pricing system of the milk market orders.

[11] It is a theorem in economics that a profit-maximizing firm always prices on the elastic portion of its firm- or brand-level demand curve.

Policy Options

Turning now to policy, current traditional dairy policy does not address regional pricing problems. National policies, such as the Federal Milk Income Loss Contract, and the cooperative CWT Program do shore up the national price; however, they do nothing to redress the regional imbalance in pricing. In fact, the Milk Income Loss Contract Program covers more of Wisconsin's smaller dairy farms than our larger dairy farmers in New York and New England.

If either of these programs were benchmarked to cover the higher cost of production in New England and applied equally across the entire country, New England farmers would be making money, but farmers elsewhere would be making huge amounts of money and would expand supply in such a fashion as to totally blow those programs away. Any national policy that encourages or establishes the same raw milk price for all farmers ignores the economic need for different price levels in different regions of the nation.

One could provide relief to the Northeast if one revised the Class 1 differentials in the federal milk market orders to create a higher fluid price in the Northeast. There is some talk of this in 2006 as Congress moves towards a new farm bill (Gray 2006). This option, however, faces a host of opponents in Congress from other regions. Class 1 differentials have not changed in over 25 years. In Boston one adds $3.25/cwt to the Eau Claire, Wisconsin base (manufacturing milk) price. This is only $1.55 cwt more than the differential added for fluid milk at Eau Claire. Given that it currently costs around 61 cents to move a hundred pounds of raw milk a hundred miles, the federal order fluid differential between the Midwest and the Northeast is definitely too low to influence regional prices.

What does the rise of private pricing power in the dairy marketing channel suggest for dairy policy? Curiously, it predicts that product differentiation (new product development) may take dairy farmers down the ready-to-eat breakfast cereal path. Wheat farmers have gained little or nothing from the proliferation of cereal brands. Branded product manufacturers and retailers seek to maximize profits, not sales volume. This implies that the output restriction effect of market power can offset the increase in consumer demand due to increased variety. The push to provide new "high value" differentiated dairy products and the subsidy of such by dairy farmers may very well not benefit farmers. At a minimum most of the benefits will stay with processors and retailers.

Antitrust enforcement that prevents further consolidation in milk processing and in supermarket retailing 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 markets are not competitive and antitrust is ineffective, economists look to regulation to improve economic performance. During the deep raw-milk price trough in 1989 and the early 1990s, New York legislators passed two related milk price regulation laws. The Rogers Allen law that empowers the state to regulate raw milk prices was strengthened. It briefly served as a basis for fluid milk price elevation to provide farmers relief from low prices; however, the implemented over-order pricing system was challenged and found to be in violation of the interstate commerce clause of the U.S. Constitution. When this farm-oriented law was strengthened, a price-gouging law also passed in a logrolling compromise for down-state support. The New York price-gouging law has continued to operate. The law limits the retail price to no more than 200 percent of the raw milk price processors pay.

Figure 3 reports milk prices for New York and New England. Retail prices in New York are, on average, lower than in New England. Note that the price-gouging law tends to be most effective (binding) when raw milk prices are low. During low raw-milk price periods, New York prices are much lower than prices in New England, where there is no price-gouging law.[12]

[12] See Huff (2003) for a detailed explanation of the New York law's operation.

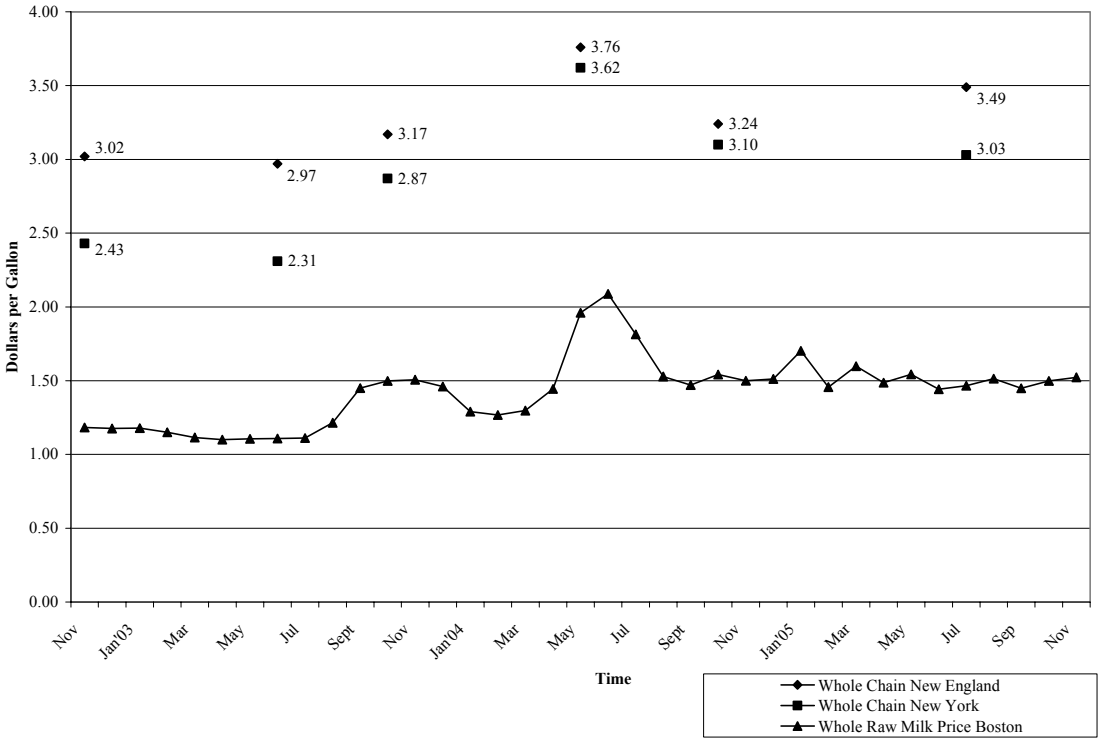

Figure 3. Weighted Average Chain Store 3.25 Percent Whole Milk Prices in New York and New England and Respective 3.5 Percent Whole Raw Milk Prices

Source: Raw milk data from U.S. Department of Agriculture, Market Administrator (1996–2006), and U.S. Department of Agriculture, Agricultural Marketing Service (1996–2006). Whole chain prices in New England and New York are from surveys completed by the Food Marketing Policy Center.

One way forward for milk pricing reform in the Northeast is to renew a focus on state-level policies. State-level bargaining or mandated over-order premiums in the Northeast have been tried in the past. As briefly explained when discussing the New York Rogers Allen law, the approach was not successful for legal reasons. Also, from the economic standpoint, if one assembles 95 percent of the Northeast farmers into a bargaining unit and bargains for an over-order price, processors can defeat these over-order premiums movement by shifting their business to the 5 percent that don't participate and attracting others to defect from the bargaining unit. This free-rider problem exists because of the difference between the Class 1 price that a processor pays for the milk, which includes the over-order premium, and the blend price that all farmers receive when such premiums are blended back across manufacturing as well as fluid milk. The processor can split the difference between the bargained fluid price and the blend price with someone outside the bargaining unit. Both are better are off. Ultimately, the bargaining effort collapses.

There needs to be a new way to redistribute revenue in the milk marketing channel from powerful retailers to farmers and consumers. A policy that reduces retailer market power would also help to reinvigorate the federal order's pool pricing as a vehicle for higher farm milk prices. A new state-level policy also needs to avoid the free-rider problem inherent in elevating raw milk price in a particular state or region. The new policy must also not violate the interstate commerce clause, which prohibits states from impeding the flow of commerce in the nation; i.e., it must not discriminate between in-state and out-of-state farmers and processors that supply the state's fluid milk needs.

Consider a fair share price policy that returns a

portion of the retail margin to farmers. Under a fair share approach, one could set the following policy parameters. Retailers would be permitted to mark fluid milk up 20 percent, and after that, half of any additional markup would be shared with the farmer. This money would be paid back into a pool that would include all the farmers that supply the milk to that particular retailer.

Note that there is no free-rider problem in this milk pricing policy. All retailers pay. They cannot avoid paying by switching to a different fluid milk processor or a different set of farmers that supply that processor. Also the Connecticut Attorney General has ruled that a price collar approach that is similar to this fair share approach does not violate the interstate commerce clause. Thus the fair share approach is a legal milk pricing policy that a state can implement. This is the case because it does not discriminate between milk supplied by farmers and/or processors from in state and out of state.[13]

Note that the fair share has no impact on the fluid milk processing industry. A fluid milk processor continues to pay a price for milk as determined currently and continues to sell to supermarkets based upon market conditions as they do now. The only difference is that a retailer must share part of any markup over 20 percent with farmers.

How would a fair share policy affect consumers? The share ratio can then be manipulated in such a fashion that one can determine a distribution to farmers and a residual amount remaining to retailers, and confer a certain benefit to consumers as well. In other words this milk pricing regulatory policy could benefit farmers, processors, and consumers with a more equitable distribution of the proceeds from the milk production and distribution activity. A fair share policy could be managed by a regulatory board that represents all parties, such as the Connecticut Milk Regulation Board.

Consider the following example. A state's milk regulation board determines that the paid raw milk fluid price should be no lower than $17.00/cwt for 3.5 percent butterfat milk. It decides that retailers will keep the first 20 percent of their markup over wholesale price, that they will pay a certain "fair share" of markups beyond 20 percent to farmers, and that markups will be capped at 50 percent. Note that if the raw price is at or above $17.00/cwt, the fair share rate is zero; however, the 50 percent markup cap persists. The law is similar to the New York price-gouging law. However, when farm prices are low, the fair share law returns money to farmers.

Table 2 illustrates how the fair share policy could work. From February through June 2006, Class 1 raw milk prices in Boston dropped from $18.28 to $15.65 per cwt for 3.5 percent butterfat milk. April 2003 is also in the table, so one can see how the policy could work at an even lower Class 1 price, $14.42 per cwt. Section 2 of the table gives the raw milk prices per gallon for each type of milk for each month. The price of skim milk, for example, falls from $1.17 per gallon in February 2006 to $0.94 per gallon in the lowest price month, April 2003.

Section 3 of Table 2 gives the corresponding wholesale prices for each type of milk. One obtains wholesale prices by adding Dairy Technomics' August 2005 estimate for private label milk processing and distribution to raw milk prices (Dairy Technomics 2005). Any retailer complying with the policy and the regulatory agency would need only the delivered wholesale prices, which are readily available. In this example the average wholesale price for all types of milk ranges from $2.11 per gallon in February 2006, the highest price month, to $1.84 per gallon in the lowest price month. Although this example ignores brand-level differences, a markup rule based on delivered wholesale prices can accommodate them and would therefore limit retailers' capture of processors' brand equity.

Section 4 computes the 20 percent retail trigger price. Prices above this require the retailer to pay into the fair share fund if farm prices are below $17 per cwt.

Section 5 computes the retail ceiling prices at 50 percent markup for each month. Section 6 gives the actual (current) price for each month. Note that the actual price in every month is above the policy ceiling price, so retailers need to cut price. Consumer savings range from 29 cents in February 2006, the highest price month, to 23 cents per gallon in April 2003, the lowest price month.

[13] See the opinion letter from Richard Blumenthal, Connecticut Attorney General, at www.fmpc.uconn.edu. Click on "milk pricing" and scroll down.

Table 2. An Example of the Fair Share Approach to Milk Price Regulation [a]

		February 2006	March 2006	April 2006	May 2006	June 2006	April 2003
1	Components of Class 1 price						
	Class 1 skim price	$11.66	$1.10	$10.17	$10.05	$9.72	$9.07
	Class 1 butterfat price	1.51	1.41	1.30	1.26	1.29	1.15
	Co-op premium	1.50	1.50	1.50	1.50	1.50	1.40
	Assessments	0.25	0.25	0.25	0.25	0.25	0.23
	Class 1 3.5% price	$18.28	$7.39	$16.12	$15.87	$15.65	$14.42
2	Per gallon prices						
	Whole (3.25%)	$1.54	$1.47	$1.36	$1.34	$1.32	$1.23
	2%	1.40	1.33	1.23	1.22	1.19	1.12
	1%	1.28	1.22	1.13	1.12	1.09	1.02
	Skim	1.17	1.12	1.04	1.03	1.00	0.94
	Average raw milk price	$1.35	$1.28	$1.19	$1.18	$1.15	$1.08
3	Processor dollar markup	$0.76	$0.76	$0.76	$0.76	$0.76	$0.76
	Wholesale prices per gallon						
	Whole (3.25%)	$2.30	$2.23	$2.12	$2.10	$2.08	$1.99
	2%	2.16	2.09	1.99	1.98	1.95	1.88
	1%	2.04	1.98	1.89	1.88	1.85	1.78
	Skim	1.93	1.88	1.80	1.79	1.76	1.70
	Average wholesale price	$2.11	$2.04	$1.95	$1.94	$1.91	$1.84
4	Retail trigger price markup	20%	20%	20%	20%	20%	20%
	Dollar trigger markup	$0.42	$0.41	$0.39	$0.39	$0.38	$0.37
	Trigger prices per gallon						
	Whole (3.25%)	$2.72	$2.64	$2.51	$2.49	$2.46	$2.35
	2%	2.58	2.50	2.38	2.36	2.34	2.24
	1%	2.46	2.39	2.28	2.26	2.23	2.15
	Skim	2.35	2.29	2.19	2.18	2.14	2.07
	Average trigger price	$2.53	$2.45	$2.34	$2.32	$2.29	$2.20

cont'd.

[a] Basic rule: $0.76 markup to wholesale, 20 percent markup to retail trigger price, 50 percent markup to retail ceiling price, and a progressive share ratio to establish a raw fluid price floor at $17 per cwt.

Section 7 analyzes farmer benefits. During February and March 2006 raw milk prices are above $17.00/cwt, so the fair share ratio is zero. Farmers receive no benefit. In April 2006 prices are below $17.00 and the program kicks in with a 16 percent share ratio. This pays 10 cents per gallon and restores the raw price to $1.46 per gallon ($17.00/cwt). As the price drops in the other months in Section 7, the fair share ratio goes up to 44 percent and program payments per gallon go up to 24 cents to keep farmers at the $17.00 raw price.

Section 8 illustrates the impact of the policy on supermarkets. This policy reduces their "net of payments to farmers" price. Their realized gross margin ranges are from 33 percent to 27 percent.

Table 2. Continued

		February 2006	March 2006	April 2006	May 2006	June 2006	April 2003
5	Retail ceiling price markup	50%	50%	50%	50%	50%	50%
	Dollar ceiling markup	$1.05	$1.02	$0.98	$0.97	$0.96	$0.92
	Retail ceiling prices per gallon						
	Whole (3.25%)	$3.35	$3.25	$3.10	$3.07	$3.04	$2.91
	2%	3.21	3.11	2.97	2.95	2.91	2.79
	1%	3.09	3.00	2.87	2.84	2.81	2.70
	Skim	2.98	2.90	2.77	2.76	2.72	2.62
	Average ceiling price	$3.16	$3.07	$2.93	$2.90	$2.87	$2.76
6	Current price [b]	$3.45	$3.44	$3.30	$2.97	$2.97	$2.99
	Consumer savings	$0.29	$0.37	$0.37	$0.07	$0.10	$0.23
7	Farmer						
	Share ratio	0%	0%	16%	20%	24%	44%
	Program payment per gallon	$0.00	$0.00	$0.10	$0.12	$0.14	$0.24
	Raw fluid price @ 3.5% [c]	$1.55	$1.47	$1.37	$1.34	$1.32	$1.22
	Total fluid price per gallon	$1.55	$1.47	$1.46	$1.46	$1.46	$1.46
	Raw fluid price per cwt @ 3.5%	$18.03	$17.14	$15.87	$15.62	$15.40	$14.19
	Program payment per cwt	$0.00	$0.00	$1.12	$1.38	$1.59	$2.81
	Total raw fluid price per cwt	$18.03	$17.14	$17.00	$17.00	$17.00	$17.00
8	Supermarket						
	Average price net of farm payment	$3.16	$3.07	$2.83	$2.78	$2.73	$2.51
	Percent gross margin	33%	33%	31%	30%	30%	27%
	Dollar gross margin	$1.05	$1.02	$0.88	$0.85	$0.82	$0.68

[b] Current price from Federal Milk Order No. 1 monthly retail survey for whole milk in Hartford, Connecticut. June 2006 is May 2006 price.
[c] Raw fluid price @ 3.5 percent does not include the 0.245 processor and administrative assessment (0.23 in April 2003).

Their dollar gross margins range from $1.05 to $0.68 per gallon. Note that these realized gross margins are well above the 40–50 cents that Criner and others have estimated are sufficient to cover all costs, including a competitive return to equity capital.

This regulatory policy could require that supermarkets pay fair share monies to the processors who supply their milk. Processors in turn would return monies to the cooperatives that supply them, most notably Dairy Marketing Services and Agri-Mark. The cooperatives would then devise a payout schedule, possibly a straight prorated share based on the volume of milk supplied by each farmer. Note that if only one state—for example, Connecticut—enacts this law, the fair share payment would be diluted over all farmers that supplied milk to a plant that also supplies New York, Massachusetts, and possibly other states. However, if all states supplied by that plant had a fair share law, there would be no dilution.

What if one does not do some sort of regional milk policy along these lines? Would consumers, in fact, benefit from lower priced milk from the Midwest and the far West? This is an excellent question; however, the answer is clearly that they would not. Yes, the cost of production in the Northeast is higher than those more distant areas; however, in Spring 2006 it cost approximately 61 cents to transport a hundredweight of raw milk a hundred miles. This means that transporting fluid milk from very distant areas tends to generate very expensive milk. Also, as we have seen under the existing policies, the mailbox prices are not

lower in the upper Midwest; they are higher or at best roughly equal to the Northeast over the dairy pricing cycle. The disappearance of production and processing here would only put them in a stronger supply situation, i.e., elevate delivered prices in the Northeast. Adding transportation costs to either fluid or processed products for shipping east also creates higher consumer prices in the Northeast.

Conclusions

This analysis suggests that there is a need for reform of milk pricing in the Northeast. The New York price-gouging law needs to be recast as a fair share law. This reform benefits farmers and processors as well as consumers. It enhances the survival of Northeast dairy farmers and the region's dairy processing industry.

The fair share policy could be implemented even if there were competitive pricing in the retail milk marketing channel in our region. The cold hard fact, however, is that we do not have competitive retail milk pricing in New England. Thus the milk policy outlined here "kills two birds with one stone." It not only addresses the regional raw milk pricing issue where farmers need relief, it also reforms the pricing of milk at retail by limiting and redistributing excessive margins. Clearly the economic viability of Northeast dairy farms depends importantly on state-level action. Milk pricing reform at the state level deserves attention. It can improve the performance of the dairy and fluid milk industries.

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