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Restructuring Class I Prices--  
Surplus Market Viewpoints

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## RESTRUCTURING CLASS I PRICES--SURPLUS MARKET VIEWPOINTS\*

by

Boyd M. Buxton

Class I prices paid by handlers for milk used as fluid (Class I use) reflect minimum Class I prices set under federal milk marketing orders plus over order payments. Presently the minimum Class I price in any order east of the Rocky Mountains can be approximated by adding to the Minnesota-Wisconsin (MW) price 90¢ plus 15¢ per hundredweight for each 100 miles the order is located from Eau Claire, Wisconsin. Minimum Class I prices for markets located west of the Rocky Mountains are lower than those calculated with the above formula. The prevailing Class I price in a particular order can be estimated using about \$1.20 plus 18¢ or 19¢ per hundredweight per 100 miles rather than 90¢ plus 15¢. Therefore, the general structure of Class I prices increase the further the distance from Eau Claire. This structure of Class I prices reflects a single basing point for all markets east of the Rocky Mountains.

The underlying minimum Class I prices set in federal milk orders move up and down with changes in the MW price maintaining the same relative structure of Class I prices. The minimum Federal order differentials have not been changed since 1968.

The topic for this session is restructuring or changing the basic Class I price relationship described above. This question involves changing the size and relative Class I differentials now used in federal milk orders.

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\*Paper presented at the Southwest Milk Marketing Conference, Oklahoma City, Oklahoma, April 22, 1980.

I will not discuss the issue of transportation allowances within markets used to zone back the blend prices. Rather I will focus on Class I prices. In my presentation I will discuss the following items that I think are most relevant to the question of restructuring Class I prices.

1. First, I think it is impossible to meaningfully discuss restructuring Class I prices until the objective is clearly and precisely defined. How Class I prices might be restructured depends on what objective is to be pursued.

2. Second, because I am to discuss surplus market viewpoints, I want to review the concept of surplus that I think is most relevant to the question of restructuring Class I prices.

3. I then want to discuss the implications of the present single basing point policy that has pervaded the industry for a long time.

4. Finally, I would like to review some of the trade-offs implied by a couple of restructuring alternatives. These trade-offs might suggest some alternative viewpoints.

#### Objectives of Class I Prices

Classified pricing and pooling provisions of milk orders are designed to stabilize Grade A milk prices and to provide a secure market for dairy farmers producing Grade A milk. This is accomplished when Class I differentials are high enough to encourage production of Grade A milk to meet fluid needs plus a necessary reserve. The reserve is available year round so that unsynchronized production and consumption of Grade A milk would not result in extreme fluctuations in the price of Grade A milk.

Pooling returns provides a mechanism for all Grade A dairy farmers to share in lower price sales when the Grade A milk cannot be sold at the Class I price but must be sold at the lower Class III manufacturing price.

These ideas are discussed in numerous places and I will not dwell further on how a free market might result in unstable prices and insecure markets for Grade A dairy farmers. I will assume, however, that a major objective of Class I prices is to provide market security and stable Grade A milk prices.

Harris called this objective a "deliberately limited application of the discriminative possibilities of classified pricing with a view to long-term marketing stability. Discriminative pricing is applied only to facilitate the orderly marketing of seasonal surpluses or any other temporary abnormalities of supply".<sup>1/</sup>

The above discussion suggests a second possible objective of Class I price differentials--that of enhancing returns to Grade A dairy farmers. This objective is pursued through the application of price discrimination beyond that needed solely to achieve a necessary reserve which then stabilizes prices and provides a secure market for Grade A milk. This objective could be pursued until returns to dairy farmers were maximized. A structure of Class I prices to maximize returns to dairy farmers would be quite different from a structure of Class I prices designed solely to stabilize prices and provide secure markets. For example, Ladd and Updegraff estimated that total cash receipts to the dairy farmers could have been increased 103 percent in 1964 by decreasing the total quantity of milk available by 38 percent and allocating the milk among six dairy products in a specified way.<sup>2/</sup> They assumed that different prices would be charged for milk used in ice cream, cheese, nonfat dry milk and butter

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<sup>1/</sup> Harris, Edmond S., Classified Pricing of Milk, Some Theoretical Aspects, TB-1184, Agricultural Marketing Service, U.S. Department of Agriculture, April 1958, pp. 66-67.

<sup>2/</sup> Ladd, George W. and Gail C. Updegraff, Allocation of Milk Among Products to Maximize Gross Income of the Nation's Dairy Farmers Under 1964 Demand Functions.

as well as for fluid. These uses reflect different markets and, when the elasticities of demand differ between markets, cash receipts of dairy farmers can be maximized by controlling the amount of milk offered to each market.

They estimated that, based on 1964 prices, the farm price for milk would have increased 370 percent for milk used as fluid, 566 percent for milk used in ice cream, 260 percent for evaporated milk, 115 percent for milk used in cheese and 47 percent for milk used for butter. The amount of milk used would decrease 44 percent for fluid, 25 percent for cheese, 47 percent for ice cream, 23 percent for butter, and 38 percent in other uses.

These changes are probably well outside politically acceptable levels. However, the main point is that considerably higher Class I (fluid use) prices combined with establishing other use classes with accompanying prices would be called for if maximization of gross sales to Grade A dairy farmers was the primary objective of Class I pricing policies.

My main point in this section is that Class I prices may be restructured from free market levels to achieve two major objectives:

1. to just stabilize Class I prices year round, or
2. to increase, if not maximize, returns to Grade A dairy farmers.

A quite different level and structure of Class I prices is implied for the second objective than for the first.

#### What is a Surplus Market?

In a free market environment there is no such thing as a surplus. Prices are free to fall until supply equals demand and the market clears. Therefore, a surplus only exists when the price is set and maintained above the market clearing level.

When looking at the dairy industry, "surplus market" can mean at least two things. The most obvious is when the government support price is set above the market clearing level resulting in the supply of dairy products exceeding the amount that will clear the commercial market. The amount of purchases by the government is then "surplus" to the commercial market.

Surplus may also refer to the Grade A fluid milk market. Under present sanitary standards, only the milk used for fluid is required to be of Grade A quality. When the amount of Grade A milk produced exceeds the amount of milk consumed as fluid, there is a surplus of Grade A milk. Because the Class I price is the price paid for milk used as fluid, it is the supply of Grade A milk relative to fluid demand that is the most relevant to the question of restructuring Class I prices.

The amount of Grade A milk relative to fluid demand was considered in deciding what the Class I price should be in the new Upper Midwest milk order.<sup>3/</sup> I quote from the written decision:

"In establishing a pricing structure for the proposed marketing area, it is necessary to focus on two primary considerations: (1) What Class I price level is necessary to 'insure a sufficient quantity of pure and wholesome milk'; and (2) What price structure is needed to insure Class I price alignment with neighboring marketing areas?

With regard to the first point, it is clear from reviewing the record evidence that the proposed marketing area is an extremely heavy milk-producing area. In 1974, more than 4.2 billion pounds of milk were pooled under the four orders proposed to be merged. Of this total, only 1.4 billion pounds, or roughly 33 percent, were used in the form of fluid milk products (Class I). The percentage of Class I utilization for this group of markets has been declining steadily for the past six years. In 1970, the weighted average Class I utilization for the combined markets was 41 percent; in 1971, 39 percent; in 1972, 40 percent; and in 1973, 39 percent; and in 1974, 33 percent.

Under these circumstances, there is no basis for increasing the Class I level in the combined and expanded marketing area."

The report continued:

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<sup>3/</sup> Federal Register, Vol. 41, No. 59, March 25, 1976, Part III, Decision on Proposed Amendments to Marketing Agreements and to Orders, pp. 12459-12460.

"As previously indicated the amount of Grade A milk in this area has been increasing relative to demand as shown by the declining Class I utilization. Hence there is no necessity for raising the Class I differential above the average level now existing in these markets."

In the above decision the higher Class I price was rejected on the basis that the amount of Grade A milk available exceeded fluid demand and that large quantities of Grade A milk were being diverted into manufacturing.

A similar rationale was stated in the decision with respect to the Central Arizona marketing order. I quote:

"...it is also important to have the Class I price responsive to local conditions. An important local condition is the relationship between the supply of milk immediately available to the market and the proportion of this milk disposed of for Class I purposes." 4/

Although never explicitly mentioned, when Grade A milk supply exceeds fluid use plus a needed reserve, the Class I differential could be decreased some without causing disorderly marketing. Hallberg, et. al., referred to this in a recent report when they said:

"A differential set so high as to encourage unjustifiable quantities of surplus milk can be attacked on efficiency grounds. If society really does not require more than, say, 50 percent of its milk supply for fluid purposes (including reserve requirements), it should not encourage the production of Grade A milk in excess of this amount because such encouragement would result in the inefficient use of resources." 5/

The above decisions indicated that the rationale for the level of Class I prices has been based, to a large extent, on the supply of Grade A milk relative to fluid demand in local markets. This makes economic sense as long as stabilizing Grade A milk prices is the major objective of Class I prices. Class I prices above those needed to provide a necessary reserve

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4/ Federal Register, 7 CFR Part 1004, Docket No. A0-271, Handling of Milk in Central Arizona Marketing Area, October 12, 1955.

5/ Hallberg, M.C., D. E. Hahn, R. W. Stammer, G. J. Elterich and C. L. Fife, Impact of Alternative Federal Milk Marketing Order Pricing Policies on the United States Dairy Industry, Agricultural Experiment Station Bulletin 818, Pennsylvania State University, May 1978.



indicates that an objective to increase the returns to Grade A dairy farmers is being pursued. Under these conditions, the Class I prices are set high enough to encourage surplus Grade A milk production in excess of fluid demand plus a necessary reserve for price stability.

The major conclusion is that restructuring Class I differentials in a way that is consistent with a major objective of stabilizing Grade A milk prices, will not lead to excess Grade A milk production. The Class I price could be lowered in a low Class I utilization market where a surplus of Grade A milk existed. The Class I price may be increased in a high Class I utilization market where the fluid supply becomes so tight that the Grade A milk price begins to fluctuate.

#### Implications of Present Pricing Policy

The present pricing policy reflects a single base point in Eau Claire, Wisconsin, with all Class I prices east of the Rocky Mountains increasing the further the distance from Eau Claire. Aligning Class I prices according to transportation cost from a single basing point such as Eau Claire, implicitly assumes that the amount of Grade A milk in all other markets is insufficient to meet fluid demand. It ignores possible surplus Grade A milk markets that do not actually ship milk from the base point. In these markets, Class I prices need not be aligned with Eau Claire.

Is Eau Claire, Wisconsin, the only surplus Grade A market? If not, where are the surplus Grade A markets? Let's look closer at some important market areas.

Smith, Metzger and Lasley in a recent report estimated that 30 percent of producer receipts (Grade A milk) in the Northeast was "surplus over reserves" for the 1974-76 period. This surplus over reserves was in excess of fluid use plus a required operational and seasonal reserve.<sup>6/</sup>

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<sup>6/</sup> Smith, Blair J. and Homer B. Metzger, and Floyd A. Lasley, Fluid Milk Reserve and Production-Consumption Balances in the Northeastern United States, Agricultural Experiment Station Bulletin 819, Pennsylvania State University, May 1978.

Hallberg, et. al., said in a recent report:

"A commonly noteworthy fact to observe is that in equilibrium a substantial portion of all fluid milk shipped between regions was exported from Vermont, New York, and Pennsylvania--in fact nearly 60 percent. This refutes a commonly held assumption that most of the fluid milk moving between regions is produced in the Upper Midwest. This also makes it easy to see why one fluid milk price basing point should be located in the Northeast."<sup>7/</sup>

A similar conclusion was reported in another study by Fallert and Buxton.<sup>8/</sup>

Closely related to the amount of milk that is surplus to fluid use is the amount of milk used in manufacturing. This is particularly true for areas that are almost 100 percent Grade A milk production. Some major changes are taking place in the location of production of manufactured dairy products. To show this, I calculated the average amount of milk used for manufacturing by states for two periods: 1967-69 and 1976-78. The percentage change in this average amount of milk from the first period to the second period was calculated. Results show that the amount of milk used for manufacturing, after fluid needs are accounted for, increased more than the average U.S. increase of 10.2 percent in most eastern, western, and southwestern states (states shaded grey in Figure 1).<sup>9/</sup> With the exception of Wisconsin, the amount of milk used for manufacturing actually decreased or at least increased less than the increase for the entire United States for most central and plains states.

Over this approximate nine year period, milk used for manufacturing increased 24.5 percent in Maine, 37.2 percent in Vermont, 11.8 percent in New York, 41.5 percent in Pennsylvania, 27.2 percent in Virginia, 16.2

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<sup>7/</sup> Op Cit, Hallberg et. al., p. 13.

<sup>8/</sup> Fallert, Richard F. and Boyd M. Buxton, Alternative Pricing Policies for Class I Milk Under Federal Marketing Orders--Their Economic Impact, U.S. Department of Agriculture, Economics, Statistics, and Cooperative Service, Agricultural Economic Report No. 401, p. 5.

<sup>9/</sup> The changes indicated in Figure 1 are based on milk equivalent on a fat solids basis. The changes would be somewhat lower if milk equivalent on solids-non-fat basis was used. The later case adjusts for fat coming from the fluid market.

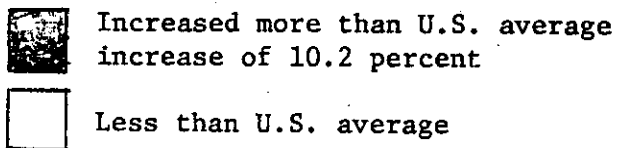
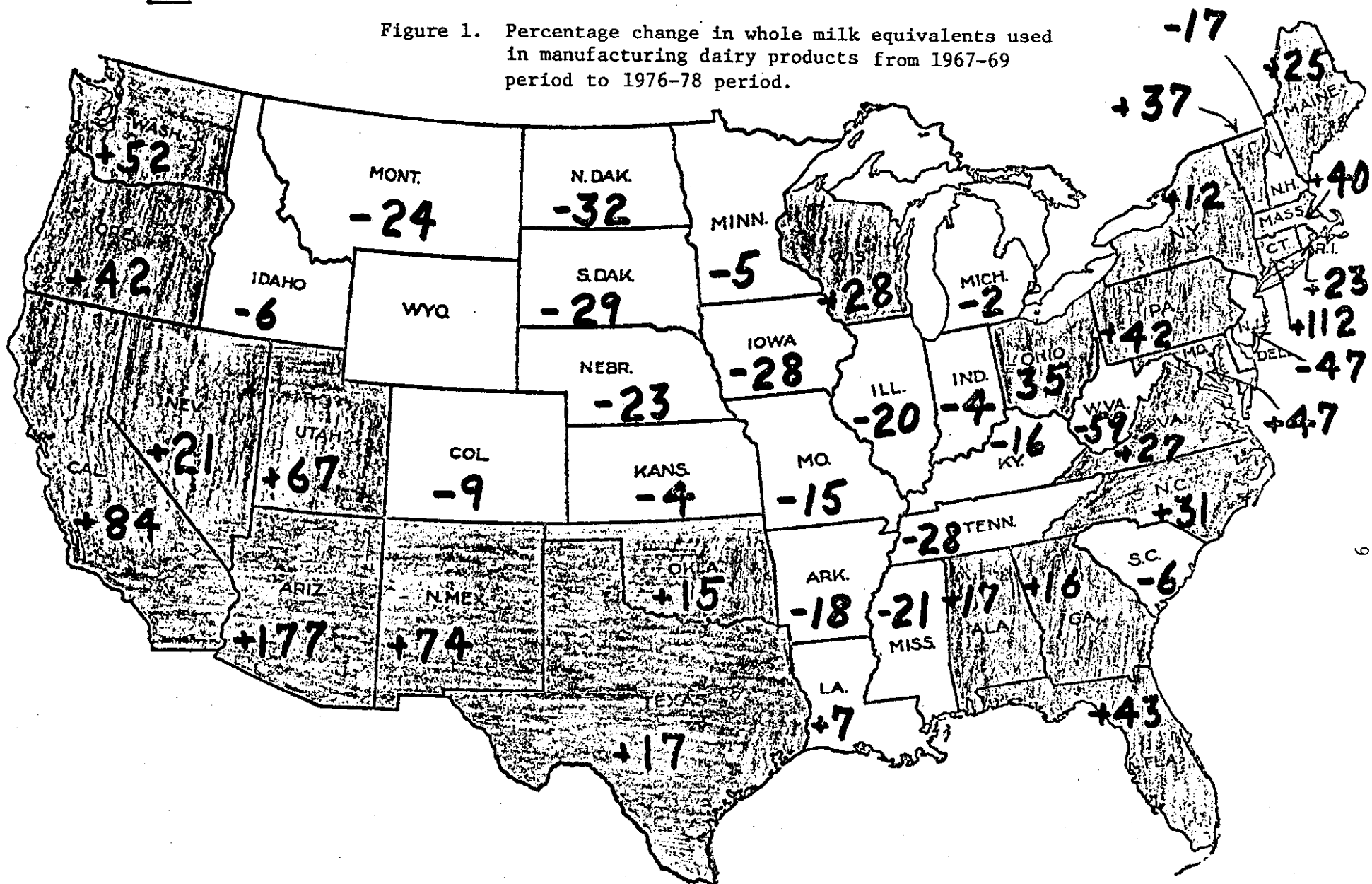


Figure 1. Percentage change in whole milk equivalents used in manufacturing dairy products from 1967-69 period to 1976-78 period.



Source: Dairy Products, Annual Summary for 1976, 77, and 78, Economics, Statistics and Cooperatives Service, USDA, and Production of Manufactured Dairy Products for 1967, 68, and 69, Statistical Reporting Service, USDA.

percent in Georgia, and 43 percent in Florida. The increase has been even more dramatic in the west where the amount of milk used for manufacturing increased 177.2 percent in Arizona, 84 percent in California, 66.7 percent in Utah, 41.9 percent in Oregon, and 52.1 percent in Washington.

By contrast the amount of milk used for manufactured decreased as much as 32.4 percent in North Dakota, and 27.9 percent in Tennessee (Figure 1).

The eastern states that are shaded in Figure 1 where the increase was more than the U.S. average increase accounted for 17.3 percent of all milk used for manufacturing in the United States for the 1967-69 period. By the 1976-78 period these states accounted for 20.5 percent. Those states in the far west and southwest accounted for 10.8 percent of the milk used for manufacturing in 1967-69, but almost 16 percent by 1976-78 (Table 1).

These changes are significant when considering restructuring Class I prices. The long-held view of a single surplus basing point at Eau Claire, Wisconsin, for Class I prices has subsidized the growth and development of a manufacturing industry in higher milk production cost regions outside the Upper Midwest.<sup>10/</sup> This may be illustrated by the following example. Suppose a decision was made to restructure Class I prices based on an actual 30 cents transportation cost from Eau Claire rather than the present 15 cents. This could increase Class I prices for fluid milk \$1.40 per hundredweight in the Northeast. Based on the approximate 60 percent utilization rate, farmers blend price could increase 85¢. The fluid milk price (Class I) would be increased \$1.94 per hundredweight in the Southeast. Based on an 85 percent utilization rate, farmers blend prices could increase \$1.65. What are the major implications of such a decision? Higher fluid milk prices would tend to decrease the amount of milk used as fluid while higher farm blend prices would encourage more milk production.

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<sup>10/</sup> Report to Committee on Agriculture and Forestry, U.S. Senate, Cost of Producing Milk in the United States--1974, June 11, 1976.

Table 1. Percent of total milk used for manufacturing  
in the United States by selected state groups.

	<u>1967-69</u>	<u>1976-78</u>
<u>States that increased more than the U.S. average increase of 10.2 percent<sup>a/</sup></u>		
East	17.3	20.5
West and Southwest	10.8	15.9
Wisconsin	<u>22.1</u>	<u>25.6</u>
Total	50.2	62.0
<u>All other states<sup>b/</sup></u>	49.8	38.0
	<hr/>	<hr/>
Total	100	100

a/ States that are shaded in Figure 1.

b/ States that are not shaded in Figure 1.

What is the net result? More milk used for manufacturing and more incentive for further development of a manufacturing industry on the east coast. The increase in butter, powder and cheese production on the east coast will directly affect the amount of manufactured products needed from the Upper Midwest where farmers would not receive a penny more for their milk. The additional milk used in manufacturing on the east coast would sell for approximately the same price as plants in the Minnesota-Wisconsin area pay for Grade B milk. The value of the additional milk in the Northeast being used for manufacturing would be considerably less to the market than to the farmer who receives a higher blend. Such a decision would encourage further shifts in the location of the manufacturing industry in the United States that are already evident in Figure 1.

In summary, a restructuring of Class I prices to reflect multibasing points in surplus Grade A markets could occur without sacrificing the price stability and market security objective of Class I prices. The continued focus on one basing point at Eau Claire, Wisconsin, ignores surplus areas and subsidizes a manufacturing industry in relatively high cost areas. The interregional equity question between farmers in the Minnesota-Wisconsin area and farmers in the more distant markets is important as long as conventional wisdom continues to structure Class I prices from a single basing point.

#### Trade-offs

My assigned topic was to discuss surplus market viewpoints. Rather than taking a poll of selected groups within the dairy industry and reporting their viewpoints, I have chosen to consider some theoretical implications of restructuring Class I prices. Alternative viewpoints may be implied by how prices received by and changes in long-term competitive positions of individual groups are affected. Therefore, this

paper may not reflect a consensus industry viewpoint or the viewpoint of the Department of Agriculture. Similarly, the implications rest on the merits and soundness of the economic logic which should be carefully examined. As an analyst, I have presented no specific viewpoint.

The above discussion suggests that surplus markets exist outside the Upper Midwest which leads to possible diverse surplus market viewpoints. Restructuring Class I prices to reflect actual transportation cost from Eau Claire, Wisconsin, should make dairy farmers in the surplus Northeast region, the Southeast, South Central, and West happy but farmers in the Upper Midwest unhappy. This difference in viewpoint has been around a long time and I doubt a restructuring of Class I differentials to reflect 30¢ for 100 miles from Eau Claire from a single basing point is what is preferred in the Upper Midwest. However, I am not aware of much that has been said by the major Midwest dairy cooperatives about the adverse affect this would have on their dairy farmers.

On the other hand, restructuring Class I differentials to reflect basing points in surplus Grade A markets should make Upper Midwest dairy farmers happy and dairy farmers outside the Upper Midwest unhappy, particularly those in the Northeast, Southeast, Northwest, and Southwest areas.

If an objective of increasing returns to Grade A dairy farmers is pursued, Class I prices could be increased considerably in all regions. An equal increase in Class I prices would, however, benefit dairy farmers in the high utilization markets relative to dairy farmers in the low utilization markets. Again Upper Midwest dairy farmers would be relatively worse off than farmers outside the Upper Midwest. Also, such a change would encourage surplus Grade A milk that would further encroach on the

Grade B dairy farmer's only market, the manufacturing market. This would increase the trend to one Grade of milk by forcing the remaining Grade B dairy farmers out of business or to convert to Grade A milk production.

Two recent reports have suggested that Class I prices could be lowered if the dairy industry was to move towards prices that likely would prevail under free market conditions.<sup>11/</sup> These lower differentials would not be expected to result in disorderly marketing--primarily because of the large and growing surplus quantities of Grade A milk.

During the prehearing notice on the proposed changes in the regulatory treatment of reconstituted milk, six Wisconsin handlers proposed that Class I differentials be lowered 81 cents in all federal milk orders. Their position on high Class I prices relative to manufacturing prices is:

"It can only be concluded that prices established for Class I fluid milk are in actuality being established at artificially high levels imposing artificially high costs to the consumers of fresh fluid milk. Therefore, Class I prices established by federal order systems provide for undue price enhancement."<sup>12/</sup>

I know of no other viewpoints in the industry suggesting that Class I prices be lowered anywhere. Therefore, perhaps the general viewpoint in the Upper Midwest is to do nothing and keep the present structure of Class I prices even though they tend to artificially shift some of the advantage of the manufacturing milk industry away from the Upper Midwest.

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<sup>11/</sup> Hallberg, et. al. op cit, and W. D. Dobson and Boyd M. Buxton, Analysis of the Effects of Federal Milk Orders on the Economic Performance of U.S. Milk Markets, R2897 Research Bulletin, University of Wisconsin, October 1977.

<sup>12/</sup> Richard, J. Lamers, Lamers Dairy Inc., Kimberly, Wisconsin; Wayne Williams, Birdseye Dairy, Inc., Green Bay, Wisconsin; Russel Stoer, Stoer Dairy, Two Rivers, Wisconsin; Howard Hansen, Hansen's Dairy, Green Bay, Wisconsin; Hanlan Kirchner, Crystal Fountain Dairy, Inc., Clintonville, Wisconsin; and Marvin Nielsen, Gustafson Ice Cream and Dairy Co., Rice Lake, Wisconsin. Submitted to William T. Manley, Dept. Administrator, AMS, USDA, January 14, 1980.



Farr, with the Wisconsin Federation of Cooperatives, suggested increasing the Class I differentials in the Chicago regional market about 40¢.<sup>13/</sup> However, he did not state whether he thought the Class I differentials should be increased by a similar amount in all other federal orders. An increase in Class I prices in the Upper Midwest without a similar increase in the markets outside the Upper Midwest, would tend to reduce the present subsidy for the development of a manufacturing industry on the east coast. This decision would also increase the surplus Grade A milk in the Upper Midwest and hasten the day when all milk would be Grade A.

### Summary

To summarize the main points.

1. It is impossible to discuss restructuring Class I prices without a well defined objective in mind. The structure of Class I prices would be different if the objective was to enhance returns to Grade A dairy farmers than if it was only to achieve Grade A price and market stability.

2. Surplus market viewpoints is not synonymous with Upper Midwest viewpoints since the Upper Midwest is not the only surplus market.

3. The single basing point for Class I prices has and will continue to distort the regional location of the U.S. manufacturing industry. Other surplus areas imply that a multi-basing point pricing policy could be implemented without threatening orderly marketing as reflected in more stable Grade A milk prices and secure markets for Grade A farmers.

4. Any change in the structure of Class I prices involves trade-offs--even those that would increase the Class I differentials uniformly in all orders. Some farmers will gain while others will lose regardless of how Class I prices are restructured or whether the present structure is continued.

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<sup>13/</sup> Farr, Charles, L., Paper presented at the East-West Dairy Conference, Interlaken Lodge, Lake Geneva, Wisconsin, September 29, 1978.