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# **THE CONSOLIDATION AND EXPANSION OF FEDERAL MILK ORDERS IN THE NORTHEAST**

## **The Impact on Blend Prices**

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## Preface

Robert Story is a Professor Emeritus in the Department of Agricultural Economics at Cornell University. Robert Wellington is a Senior Research Economist in the Office of the Market Administrator New York-New Jersey Milk Marketing Area.

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The contents of this report are the sole responsibility of the authors and should not be interpreted as reflecting the views of the various state and federal agencies that provided data for the study and/or contributed to the finding of the project. Copies of the report can be obtained from:

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THE CONSOLIDATION AND EXPANSION OF  
FEDERAL MILK MARKETING ORDERS IN THE NORTHEAST

IMPACT ON BLEND PRICES

INTRODUCTION

Federal milk marketing orders play a major role in the Northeast dairy industry. There are four federal marketing areas in the eleven-state<sup>1/</sup> northeast region (see Figure 1). Those federal areas are: the New England Marketing Area, the New York-New Jersey Milk Marketing Area, the Middle Atlantic Marketing Area and the Eastern Ohio-Western Pennsylvania Marketing Area. The Middle Atlantic Marketing Area includes four counties in Virginia and the Eastern Ohio-Western Pennsylvania Marketing Area includes 21 counties and parts of an additional county in Ohio and 17 counties in West Virginia (Figure 1).

In 1978 over 88 percent of all milk sold to plants and dealers in the eleven-state northeast region was regulated by federal orders (see Table 1). Most of the remaining federally unregulated milk was regulated under state orders in Maine, Massachusetts, New York, Pennsylvania and Vermont. Only about one percent of the total milk volume in the region was completely unregulated; essentially all of that volume was in New York.

The consolidation and expansion of federal milk marketing orders in the Northeast has been a continual process since the early 1950's. The creation of the New England Marketing Area (Federal Order No. 1) in 1976 was the final step in the merger and expansion of what at one time had been seven federal orders.

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<sup>1/</sup> Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware and Maryland.

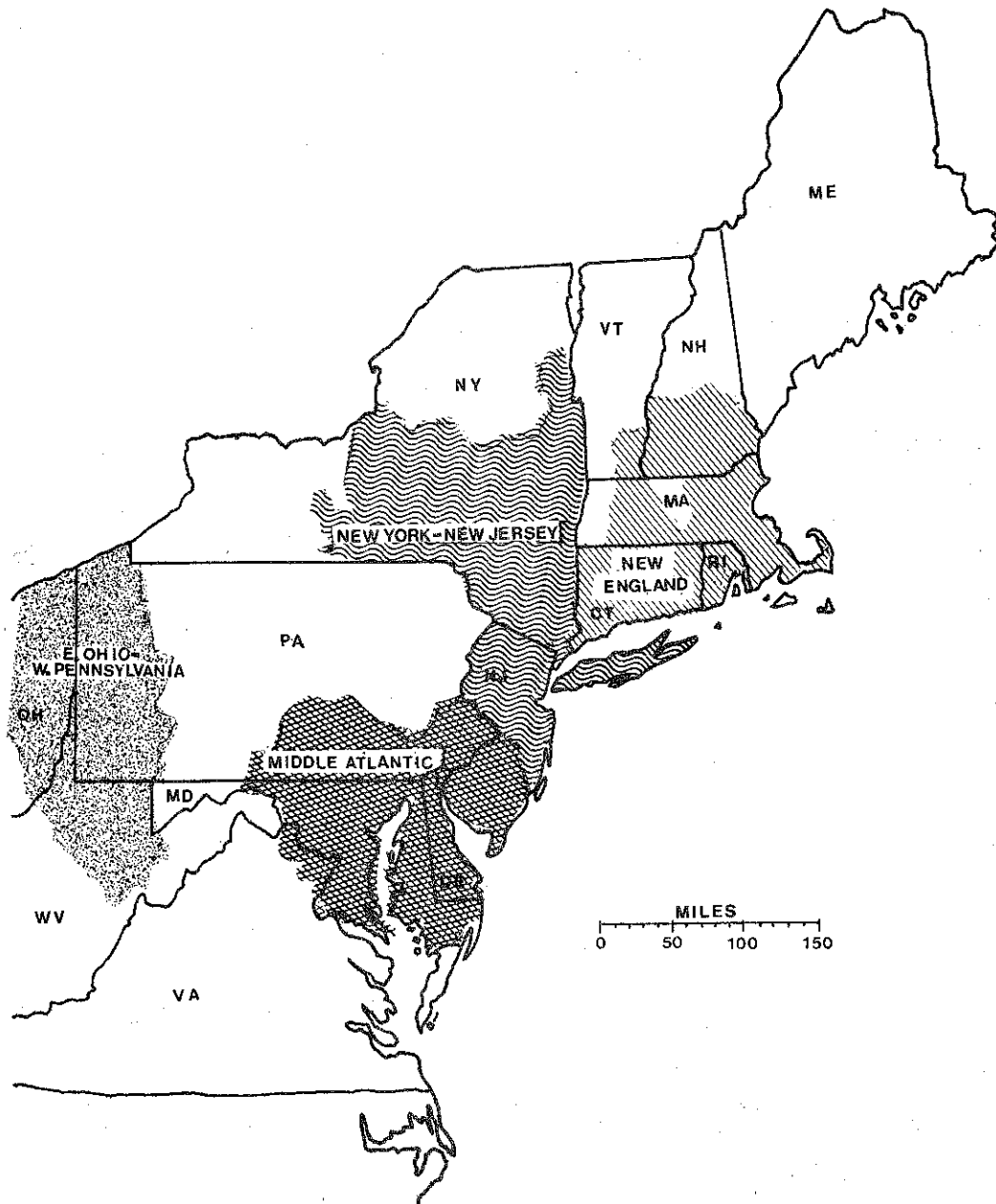


FIGURE 1

FEDERAL MILK MARKETING ORDERS  
IN THE NORTHEAST UNITED STATES

TABLE 1  
SOURCE OF PRODUCER MILK AND DELIVERIES  
TO FEDERAL ORDERS BY STATE, 1978

State or Region	Milk Sold to Plants and Dealers -----million pounds-----	Producer Deliveries to Federal Orders	Percent Federal Order
Maine	620	267	43.1
Vermont	2,090	1,959	93.7
New Hampshire	325	307	94.5
Massachusetts	530	512	96.6
Rhode Island	51	51	100.0
Connecticut	585	584	99.8
New York	10,075	8,694	86.3
New Jersey	490	468	95.5
Pennsylvania	7,450	6,633	89.0
Delaware	125	116	92.8
Maryland	1,505	1,488	98.9
Total	23,846	21,079	88.4
U.S. Total	117,293	78,125	66.6
NE Total as a Percentage of U.S. Total	20.3	27.0	-

SOURCE: Milk Production, Disposition and Income, 1977-79, Economic Statistics and Cooperative Service, United States Department of Agriculture, May 1980, p. 5.

Federal Milk Order Market Statistics Summary for 1978, Statistical Bulletin Number 625, Agricultural Marketing Service, United States Department of Agriculture, July 1979.

The creation of the Middle Atlantic Marketing Area (Federal Order No. 4) in 1970 reflected the consolidation and expansion of what had been four federal orders. While mergers were not involved in the development of the New York-New Jersey Milk Marketing Area (Federal Order No. 2), that order was involved in a major expansion into upstate New York and northern New Jersey in 1957. The Eastern

Ohio-Western Pennsylvania Marketing Area (Federal Order No. 36) had also undergone several mergers. However, due to its remote location relative to the other Northeast Federal Orders and the inclusion of substantial parts of Ohio and West Virginia in the marketing area, this Federal order was not considered for further consolidation or expansion in this study.

Historically the consolidation of federal orders occurred where production areas and/or secondary sales area overlapped. Under these conditions close alignment of class prices and blend prices paid producers is essential. Otherwise handlers under one order have a competitive advantage over those in adjacent orders in competing for sales in overlapping sales areas and in competing for supplies of producer milk in common production areas. Price alignment is most difficult if both direct delivered and reloaded milk is involved. Where this exists, frequent pricing adjustments are necessary in periods of rapidly inflating assembly and transportation costs.

Pricing and marketing problems occur frequently among northeastern federal milk orders because the orders are contiguous and their secondary sales and production areas overlap and interorder shipments of milk are significant.

In 1978, handlers in the New England Federal Order shipped over 19 million pounds of Class I packaged milk and over 77 million pounds of bulk milk into the New York-New Jersey Federal Order. The handlers in the New York-New Jersey Federal Order shipped approximately two and one-half million pounds of Class I packaged milk and six million pounds of bulk milk into the New England Order. During the same year, handlers in the Middle Atlantic Federal Order shipped over 270 million pounds of Class I packaged milk and over 30 million pounds of bulk milk into the New York-New Jersey Order while handlers in the New York-New Jersey Order shipped approximately 173 million pounds of Class I packaged milk and 16 million pounds of bulk milk into the Middle Atlantic Order.



In December 1978 eighteen counties, all in New York State, shipped milk to both the New England Federal Order and the New York-New Jersey Federal Order (see Appendix A). During the same month 37 counties shipped milk to both the Middle Atlantic Federal Order and the New York-New Jersey Federal Order. There were 12,092 producers in these 55 counties from which milk was shipped to more than one federal order. If the blend prices received by those producers are not aligned properly among the three federal orders, producers who ship to one federal order could receive a substantially different blend price than their neighbors who ship to a different federal order.

The major impact of consolidation and expansion is usually felt by dairy farmers through a change in the price they receive for their milk. Although consolidation and expansion can have an impact on class prices, class prices are set administratively and therefore do not have to change substantially. The blend price, which is the price dairy farmers receive for their milk, is not set administratively, but instead is affected by the level of Class I utilization and the location of farms and/or plants relative to the market center. When marketing orders are consolidated or expanded, the utilization level and the relative locations of farms and/or plants change, thereby changing the blend prices that farmers receive.

The purpose of this study is to calculate the change in the blend prices which would occur under selected federal order expansion and/or consolidation alternatives.

## METHODOLOGY

### Study Months

Class prices, blend prices, producer receipts and utilization statistics are determined on a monthly basis in Federal orders. Their values usually vary



from month to month. Because of the time and effort required in generating the data, the analysis was limited to only a few months. Those months which reflected the most variability in producer receipts and Class II milk volumes were selected. While Class I sales do vary from month to month, the monthly variability is much greater for producer receipts and Class II volumes. In addition, Class I sales tend to follow similar month-to-month patterns in the three northeast orders. The seasonality of producer receipts, however, does vary among the three orders. It was hypothesized that this variability in producer receipts would affect the impact of order merger and expansion. Therefore, those months with greater variability in producer receipts were chosen as the study months.

May and June are typically the peak months of producer receipts and Class II milk volume in the Northeast. November is most frequently the month of lowest receipts. When the study was in the planning stage, producer receipt data by county of origin was only available for the months of May and December for the Middle Atlantic marketing order and June and December for the New England marketing order. Since May and December reflect a large portion of the monthly variation in producer receipts and Class II volume, they were selected as the study months. The specific months selected were December 1977, May 1978<sup>2/</sup> and December 1978. The December-to-December comparison was designed to reflect the year-to-year variability while the May-December comparison was designed to reflect the seasonal variability.

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<sup>2/</sup> May 1978 data for the New England marketing order was estimated by prorating total producer receipts in May 1978 by the zone level producer receipts available for June 1978.

### Data

The federal order data were obtained from the Market Administrators of the three orders. To permit analysis of the effects of federal order expansions as well as consolidations, data from various state agencies also were obtained. New York State provided data on the two state orders located in western New York as well as the unregulated areas of northern and western New York. Data for Maine included all nonfederal order plant receipts in the state. Data for the two state milk marketing areas contiguous to Federal Nos. 2 and 4 were made available by Pennsylvania.

Due to time and format constraints, data could not be obtained from Vermont, Massachusetts and New Hampshire. The exclusion of the unregulated milk in these three states, however, was not significant due to the fact that it would represent less than one percent of the total milk volume in the Northeast.

### Procedure

The procedure for determining the impact of federal order consolidations and expansions on producer blend prices consisted primarily of computing a blend price for each consolidation and/or expansion alternative and then comparing that price with a recalculated blend price in each order. The procedures used to calculate blend prices for consolidated and/or expanded orders is essentially the same as those used to calculate the monthly blend prices in each of the northeast federal orders.

The first step in calculating a federal order blend price was to determine the volume of milk and its classification within pre-specified mileage zones. The milk volumes in each classification within each mileage zone were then multiplied by the appropriate class price which had been adjusted according to the location differential applicable to the specific zone. The zone values

for milk were summed to determine the total handler obligation for milk in the order. The total value was then adjusted for receipts of other source milk and inventory reclassification for overage to get an adjusted total handler obligation.

To obtain the total value of milk paid to producers and therefore the blend price, the value of the handler obligation was further adjusted to account for location differentials paid to farmers and for reserve requirements.

The amount of the adjustments pertaining to receipts of other source milk, inventory reclassification, for overage, and reserve requirements used in the analysis were taken directly from the actual blend price calculation of each federal order.

The location differentials paid by handlers and received by producers were not those used in each order but were specified for each of the pricing scenarios used in the analysis. The differentials used in aggregate were those in effect in Order No. 1 in December 1978. The proportions of those differentials achieved through transportation and direct delivery differentials were varied under the different pricing scenarios.

There were differences among the various orders in provisions that directly effected blend prices. The consolidation of orders would necessitate the elimination of these differences. No attempt was made in this analysis to develop the specific provisions of a consolidated order, instead adjustments were made to eliminate those provisions that directly affect blend prices but were not common to all orders. Blend prices in each individual order were recalculated with adjustments for these differences in order provisions. Otherwise, the impacts of order consolidations and expansions on blend prices could not be isolated from the impact of adjustments made to accommodate the differences in order provisions. The impact of order consolidation and

expansion alternates on blend prices in each order market could be determined by comparing the blend prices under each alternative with the recalculated blend prices for each order.

The specific adjustments made in each order in recalculating blend prices are described below. The impact of each adjustment on blend prices in each order also is shown.

#### ADJUSTMENTS IN FEDERAL ORDER BLEND PRICES

##### New England Marketing Area

Location differentials and Class I prices in Order No. 1 were amended effective December 1, 1978. Under the amended order, the Class I price in the 21st zone was reduced by 16 cents, transportation differentials between zone 21 and zone 1 were increased in aggregate by 10 cents and the Class I price in zone 1 was reduced by 6 cents. The Class II transportation differentials were also eliminated by the amendments. The city or nearby zone was changed from a single zone extending 50 miles from Boston, Massachusetts to eight geographically defined zones based on 10-highway-mile increments from either Boston, Massachusetts or Providence, Rhode Island. All of the state of Connecticut further than 70 miles from either basing point was administratively included in zone 7. Selected areas of central Massachusetts, which are further than 80 miles from the two key cities, were also administratively included in zone 8. Class I and blend prices were not uniform across these zones, but were reduced in each succeeding zone through the application of transportation differentials. Adjustments were made in the December 1977 and May 1978 data to reflect the December 1978 amendments and thereby facilitate any comparison between the months.



The adjustment for the seasonal incentive fund also was eliminated. This had no effect on the December blend prices, but did increase the May blend price by 40 cents.

As shown in Table 2, the recalculation of blend prices with these adjustments lowered the price by 10.5 cents in December 1977; increased it by 31.3 cents in May 1978; and reduced it by 0.2 cent in December 1978.

TABLE 2  
BLEND PRICE RECALCULATION WITH COMMON PRICING  
AND DIFFERENTIAL PROVISIONS, FEDERAL ORDER 1

Change	December 1977	May 1978	December 1978
	-----dollars per hundredweight zone 21-----		
Actual Blend	\$10.38	\$10.05	\$11.78
No Class II Transportation Differential	-.007	-.008	-
Change in Location Differential, Class I	+.001	+.007	-
Change in Class I Price	-.099	-.086	0
No Seasonal Incentive	-	+.40	-
Adjustments for Credits and Charges <sup>1/</sup>	-	-	-.002
Total	-.105	+.313	-.002
Recalculated Blend	\$10.275	\$11.363	\$11.778

<sup>1/</sup> Not all credits and charges for cream and skim milk which affect the total pool value were accounted for and included in the analysis.

The transportation differential schedule that became effective in December 1978 for Federal Order No. 1 also was used in Order No. 4 and, with minor modifications, in Order No. 2. Under this schedule, the transportation differential rate per 10-mile zone was 1.8 cents between zone 21 and zone 1 and 1.5 cents per zone beyond zone 21. An additional price break of 14 cents was added to the differential at zone 14. This differential schedule resulted in Class I and blend prices which were 50 cents higher in zone 1 than in zone 21.

#### New York-New Jersey Milk Marketing Area

The principal difference between the New York-New Jersey Milk Marketing Area and its neighboring federal orders involves the location at which milk is priced. In Federal Order No. 2, milk is priced according to the mileage zone of the township in which the farm is located. This is often called farm-point pricing. In the other two federal orders, the milk is priced at the plant at which the milk is first received. This is called plant-point pricing.

In this analysis, plant-point pricing was used exclusively. Federal Order No. 2 data were adjusted accordingly. Plant-point pricing was chosen because production and utilization was available on both a farm-point and plant-point basis for Order No. 2. For Order No. 1 and 4, producer delivery and utilization data were available only on a plant-point basis. Whereas it might have been possible to accurately estimate producer deliveries on a township zone basis for Order Nos. 1 and 4, it would not have been possible to estimate the classification of milk by zones with assurance of a reasonable level of accuracy.

The assumed shift to a plant-point pricing basis also eliminated the need for the transportation credit that handlers receive from the pool which partially offsets farm pick-up costs. Therefore adjustments were made to exclude this item.

Because of the current method of zoning townships in Federal Order No. 2, it was necessary to modify the transportation schedule already described for Order No. 1. Currently, the mileage used in determining a township zone in Order No. 2 is measured from an arc of basing points that is about 15 miles from Columbus Circle in Manhattan. Due to shifts in population and plant locations within metropolitan New York and Long Island, Kew Gardens in Queens is a more appropriate basing point than Columbus Circle for determining mileage zones of plants. Kew Gardens is approximately 10 miles farther than Columbus Circle from the arc of basing points. Thus, the total distance from Kew Gardens to the arc of basing points is about 25 miles.

To approximate the Federal Order No. 1 transportation differential, 1.8 cents per 10-mile zone and a total location differential of 50 cents as measured from the city zone to the 201-210 mile zone was still used. However, the location of the 14-cent price break was altered. Instead of one 14-cent price break at the 14th zone as in Order No. 1, a 9-cent price break was included at the 121-130 mile zone and a 5-cent price break was included at the New York City boundary. The 5-cent price break was used to compensate for additional transportation costs incurred when delivering milk to New York City. The price break was given at the 121-130 mile zone because that zone is approximately the same distance from New York City as the 14th zone is from the market center in Federal Order No. 1. There was also an additional price break of 9.0 cents at the 51-60 mile zone. This price break was included because the differential was unchanged within the 1-50 mile zone and the 9.0 cents represented the accumulation of the transportation differential for those 5 zones.

The transportation differential applicable to the Class II price was eliminated to achieve comparability with the other orders.

The fluid differential at the 201-210 mile zone was increased from \$2.25 to \$2.39 to coordinate prices with Order No. 1 and No. 4. The adjusted fluid differential of \$2.39 plus the transportation differential of \$.50 resulted in a total New York City zone fluid differential of \$2.89. This compares with a \$2.92 fluid differential in zone 1 of Order 1. The Order No. 2 fluid differential of \$2.84 at the 1-50 mile zone was equal to the total fluid differential at the Philadelphia City zone in Order No. 4.

Additional adjustments were made to eliminate cooperative payments deductions from the pool and the seasonal incentive takeout in May 1979.

The impact of the various adjustments are summarized in Table 3. These aggregated to +25 cents in December 1977, +64.5 cents in May 1978 and +24.8 cents in December 1978.

#### Middle Atlantic Marketing Area

In contrast with Order No. 1 and No. 2, class prices and blend prices for Order No. 4 are announced for city zones. There are three city zones: Philadelphia, Baltimore and Washington. The Philadelphia city zone extends 50 miles from basing point and the Baltimore and Washington zones extend 75 miles. Class prices and blend prices are the same at all plants within each city zone. The transportation differentials apply to Class I and blend prices and extend out from each city zone at the rate of 1.5 cents per 10-mile zone. The transportation differentials drop at the outer edge of each city zone by the accumulated amount of the differentials. The differentials applicable to Philadelphia drop by 7.5 cents at the 50-mile zone and the differentials applicable to Baltimore and Washington drop by 10.5 cents at the 75-mile zone. Both Class I prices and blend prices are 30 cents less at the 201-210 mile zone than at the city zones.



TABLE 3

BLEND PRICE RECALCULATION WITH COMMON PRICING  
AND DIFFERENTIAL PROVISIONS, FEDERAL ORDER 2

Change	December 1977	May 1978	December 1978
dollars per hundredweight, 201-210 mile zone			
Actual Blend Price	\$ 9.83	\$ 9.55	\$11.42
Shift to Plant Pricing	+ .006	+ .008	+ .004
No Transportation Credit	+ .150	+ .150	+ .150
No Class II Transportation Differential	- .004	+ .005	+ .004
Differentials on Class I and Producer Milk	- .003	- .003	- .004
Change in Class I Price	+ .071	+ .062	+ .072
No Cooperative Payments	+ .020	+ .020	+ .020
No Seasonal Payments	-	+ .400	-
Interaction Among Adjustments <sup>1/</sup>	+ .002	+ .003	+ .002
Total Adjustment	+ .250	+ .645	+ .248
Recalculated Blend	<u>\$10.080</u>	<u>\$10.195</u>	<u>\$11.668</u>

<sup>1/</sup> Interaction of the shift to plant-point pricing and the modification or elimination of Class I and II Transportation Differentials caused an additional adjustment which cannot be attributed entirely to one individual adjustment.

There are no Class I transportation differentials in Order No. 4 but the Class II price is 2 cents higher at the 201-210 mile zone than in the Order 1 and 2. The transportation differential schedule effective in the New England order in December 1978 were used in Order No. 4 including the 14-cent break at the 140-mile zone. This increased the transportation differentials in aggregate from 30 cents to 50 cents between zone 21 and zone 1. The city zones were not

changed but the drop in transportation differentials at the outer edge of the Philadelphia city zone was increased to 9 cents and at the outer edge of the Baltimore and Washington city zones to 13.5 cents. The 6-cent direct delivery differential applicable to Philadelphia was eliminated and the Class I price applicable to that zone was increased 6 cents.

Two blend prices are calculated each month for Order No. 4; a base blend price and an excess price. These prices are a feature of the base excess seasonal pricing incentive program in that market. This feature of Order 4 was eliminated as part of the coordination process and a single marketwide blend price was calculated for the 201-210 mile zone of the consolidated order. For Order 4 this was in lieu of the city zone base and excess blend prices.

The deductions from the Order 4 pool for advertising and promotion also were eliminated from that order to achieve compatibility in order provisions that directly influenced blend prices.

The impacts of these coordinating changes in Order No. 4 are summarized in Table 4. In aggregate, the adjustments differed according to pricing points. Blend prices increased the most at Baltimore and Washington because of the elimination of the direct delivery differential at Philadelphia. The offsetting increase in the Class I price at Philadelphia was pooled and therefore resulted in higher blend prices in all zones. The changes in basing point and transportation differentials reduced blend prices in the 201-210 mile zone. However, since most of the milk in Federal Order No. 4 is delivered to and priced at city zones, the reduction in blend prices in the more distant zones would have little overall impact on returns to most producers.

TABLE 4

BLEND PRICE RECALCULATION WITH COMMON PRICING  
AND DIFFERENTIAL PROVISIONS, FEDERAL ORDER 4

Change	December 1977	May 1978	December 1978
-----dollars per hundredweight-----			
Actual Blend Price			
Philadelphia	10.47	10.59	11.95
Baltimore, Washington	10.41	10.53	11.89
201-210 mile zone	10.11	10.23	11.59
No Direct Delivery Differential			
Philadelphia	- .06	- .06	- .06
Increase Class I Price, all zones	+ .029	+ .030	+ .018
No Deduction for Advertising and Promotion, all zones	+ .070	+ .070	+ .070
Reduction in Class II Price, all zones	- .008	- .010	- .009
Change in Base Zone and Transportation Differentials - Class I and Blend Prices			
City Zones	0	0	0
201-210 mile zone	- .20	- .20	- .20
Total Adjustment			
Philadelphia	+ .031	+ .030	+ .019
Baltimore, Washington	+ .091	+ .090	+ .079
201-210 mile zone	- .109	- .110	- .121
Recalculated Blend Price			
Philadelphia	10.501	10.620	11.969
Baltimore, Washington	10.501	10.620	11.969
201-210 mile zone	10.001	10.120	11.469

### New York State Orders

The two state orders in New York State, Rochester and Niagara Frontier, both calculate marketwide blend prices. Under this analysis, the existing marketing areas for each state order were treated as separate city zones. The city zone transportation differentials were then calculated based on mileages from New York City to Rochester and Buffalo. Class I prices were reduced by this procedure but this was considered as resulting from the consolidation process and, therefore, no adjustment was made for this reduction.

Deductions from the pools of both state order for cooperative payments and milk publicity payment were eliminated, thereby increasing the blend price. The administrative assessment deducted from the announced blend prices in both orders also was eliminated.

The summary of the impact of these adjustments on blend prices is shown in Table 5. Blend prices in both orders were increased by these adjustments in all three months.

### Additional Areas

Marketwide blend prices are not calculated for the additional areas in Maine, New York and Pennsylvania included in this analysis, although state agencies in Maine and Pennsylvania do establish minimum class prices that handlers are required to pay producers for milk. Data were obtained from state agencies in each of the respective states for individual plant receipts and utilization. Plants in Maine were zoned on the basis of highway mileage from Boston. The New York and Pennsylvania plants were zoned on the basis of highway mileage from New York City.



TABLE 5

BLEND PRICE RECALCULATION WITH COMMON PRICING  
AND DIFFERENTIAL PROVISIONS,  
ROCHESTER AND NIAGARA FRONTIER ORDERS

Change	December 1977	May 1978	December 1978
-----dollars per hundredweight-----			
Actual Blend Price			
Rochester	10.03	9.77	11.67
Niagara Frontier	9.99	9.66	11.52
Adjustments			
No Cooperative Payments			
Rochester	+ .044	+ .045	+ .044
Niagara Frontier	+ .049	+ .050	+ .049
No Milk Publicity Payments			
Rochester	+ .071	+ .072	+ .071
Niagara Frontier	+ .079	+ .079	+ .079
No Administrative Assessment			
Both Orders	- .050	- .050	- .040
No Seasonal Adjustment			
Both Orders	0	+ .40	0
Total Adjustment			
Rochester	+ .065	+ .467	+ .075
Niagara Frontier	+ .078	+ .479	+ .088
Recalculated Blend Price			
Rochester	10.095	10.237	11.745
Niagara Frontier	10.068	10.139	11.608

Since minimum blend prices are not calculated for these areas no attempt was made in this analysis to determine the changes in blend prices that would result from the expansion of federal order regulation into these areas.

### Class I Pricing Alternatives

Three different Class I pricing scenarios were analyzed to determine the impact on blend prices under different consolidation and/or expansion alternatives.

#### Pricing Scenario A

Pricing Scenario A involved the use of different Class I differentials for different city zones in the consolidated orders (see Figure 2). The differentials were coordinated but did not represent a general increase from existing levels. Following are the differentials used for the various city zones.

<u>City Zones</u>	<u>Class I Differential</u>
Boston, Providence (Zone 1)	\$2.92
New York City, Long Island	2.89
New York-New Jersey (1-50 mile zone)	2.84
Philadelphia (1-50 mile zone)	2.84
Baltimore, Washington (1-75 mile zone)	2.78

The Class I differentials for Boston/Providence were those in effect in Order 1 in December 1978. The differentials used for Baltimore/Washington were those in effect in Order 4 for those cities in all three study months. For Philadelphia, the Class I differential was increased by 6 cents and this was 6 cents higher than for Baltimore/Washington. The increased Class I differential for Philadelphia was in lieu of the 6-cent direct delivery differential that was in effect at the time the study was made. With this pricing scenario, the 6-cent higher Class I price for Philadelphia was pooled over the entire

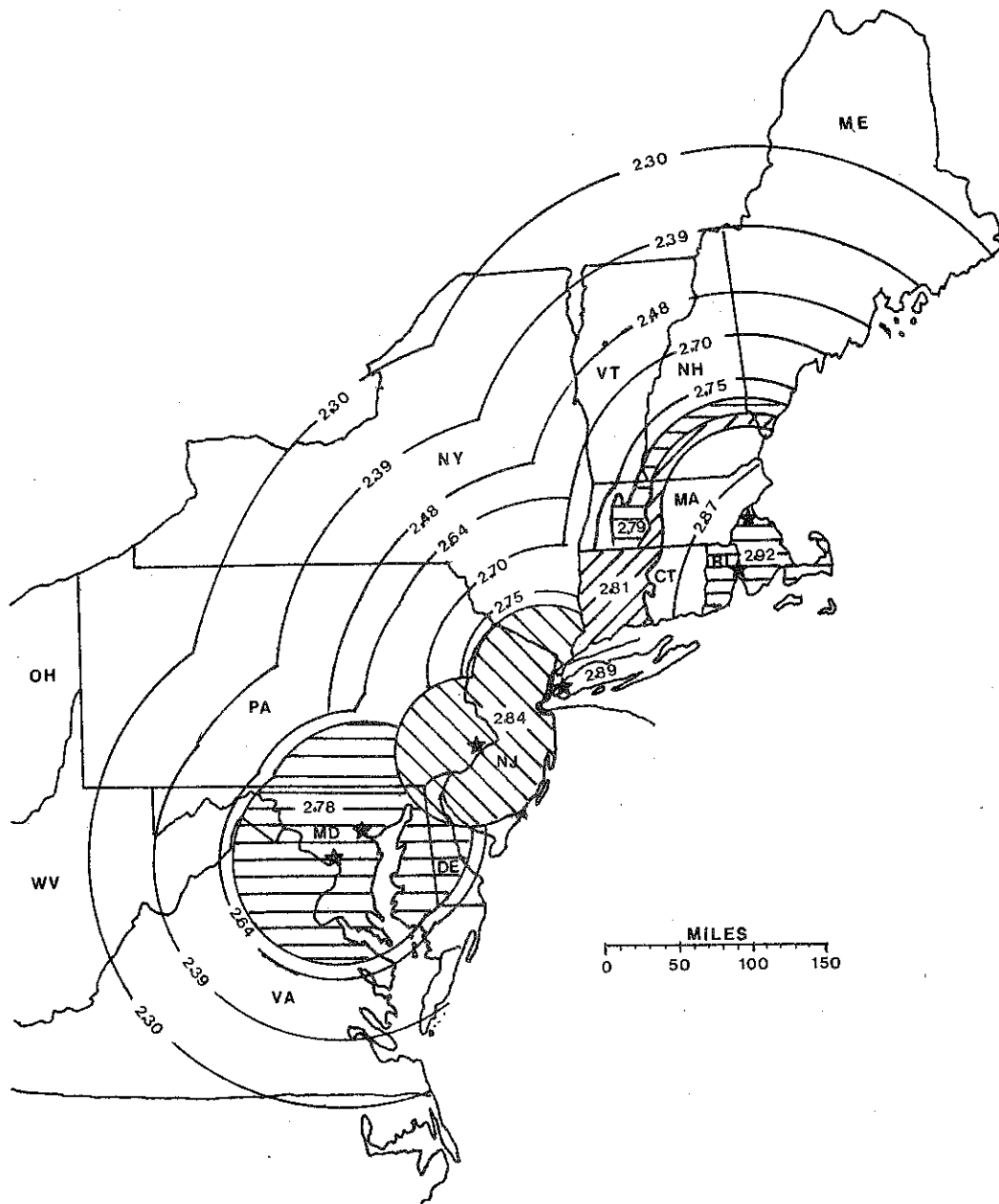


FIGURE 2

CLASS I LOCATION DIFFERENTIALS, CITY ZONES AND SELECTED MILEAGE ZONES,  
FOR A CONSOLIDATED NORTHEAST FEDERAL MILK MARKETING ORDER UNDER SCENARIO A  
(dollars per hundredweight)

volume of pooled milk in the consolidated orders and a single blend price was applicable to all three city zones in the Order 4 area. The blend price for Philadelphia also was the same as for Baltimore and Washington and the 6-cent direct delivery differential was eliminated (see Figure 3). This procedure was followed to achieve pricing comparability with the other two federal orders. (Figure 4 gives a diagrammatic representation of the differentials used in Order No. 1 as well as the other two orders under Scenario A.)

The Class I differential for the 1-50 mile zone of Order 2 was the same as for Philadelphia. The differential for New York City and Long Island was 5 cents higher. This reflected the higher cost involved in hauling milk to plants in New York City and the fact that transportation differentials did not extend into the New York City area. These Class I differentials for the Order 2 area achieved good coordination with the Class I differentials in the Order 1 and Order 4 areas.

The transportation differentials used in all three orders in this pricing scenario were those in effect in Order 1 in December 1978 except for the modification described earlier with respect to the Order 2 area. The transportation differentials between Zone 1 and Zone 21 aggregated to 50 cents. Thus, Class I and blend prices were 50 cents higher in Zone 1 than Zone 21. The 14-cent price break at the 14th zone was used to differentiate between the price of direct delivery and reload milk. The price break at this point assumes that the Class 1 milk inside of the 14th zone could be delivered directly to processing plants and the hauling costs recovered directly from producers. For reloaded milk, pricing occurs at the point of first receipt and reloading costs and transportation costs beyond the reload plant cannot be recovered directly from producers.

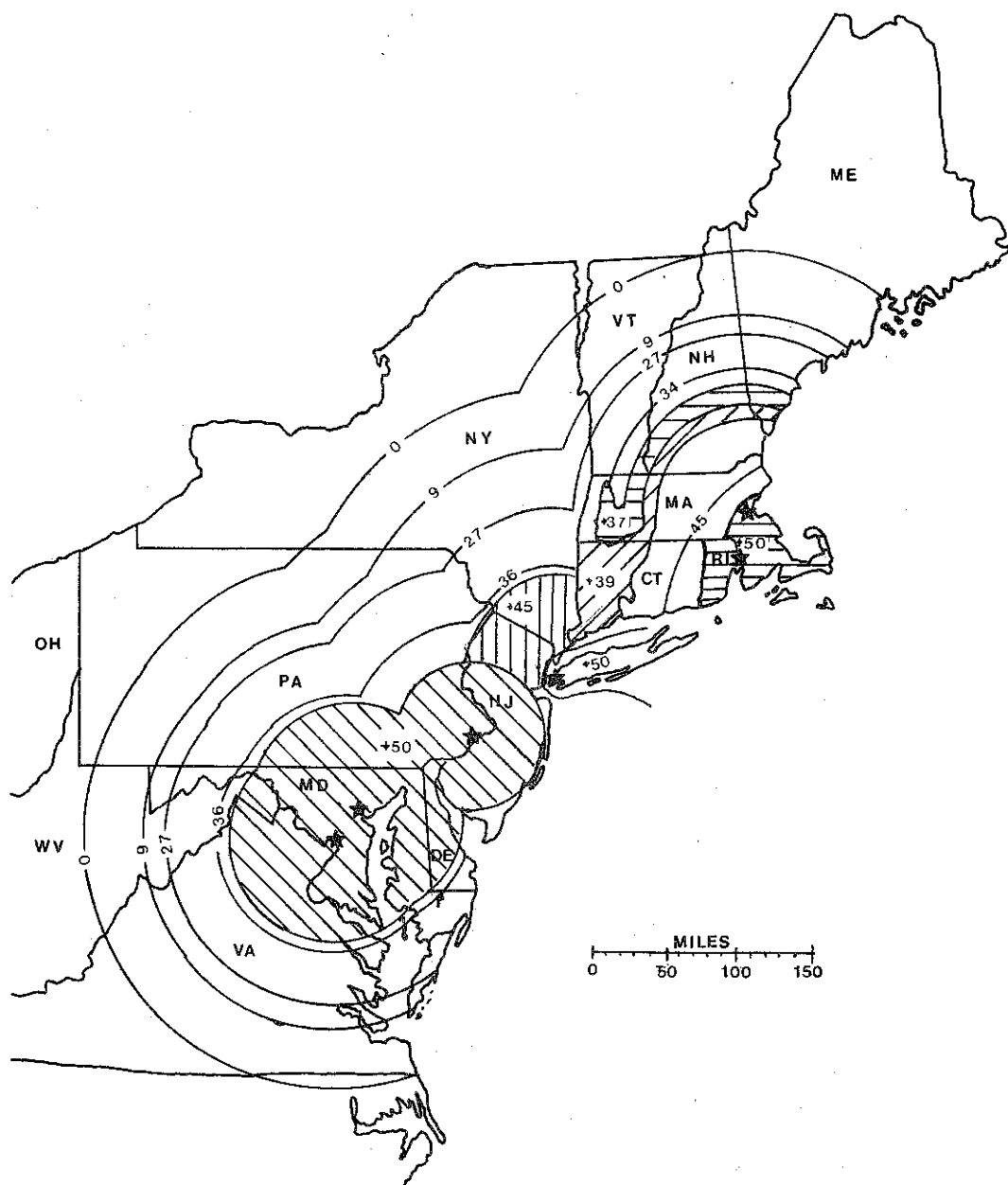


FIGURE 3

BLEND PRICE LOCATION DIFFERENTIALS, CITY ZONES AND SELECTED MILEAGE ZONES,  
FOR A CONSOLIDATED NORTHEAST FEDERAL MILK MARKETING ORDER UNDER SCENARIO A  
(cents per hundredweight)

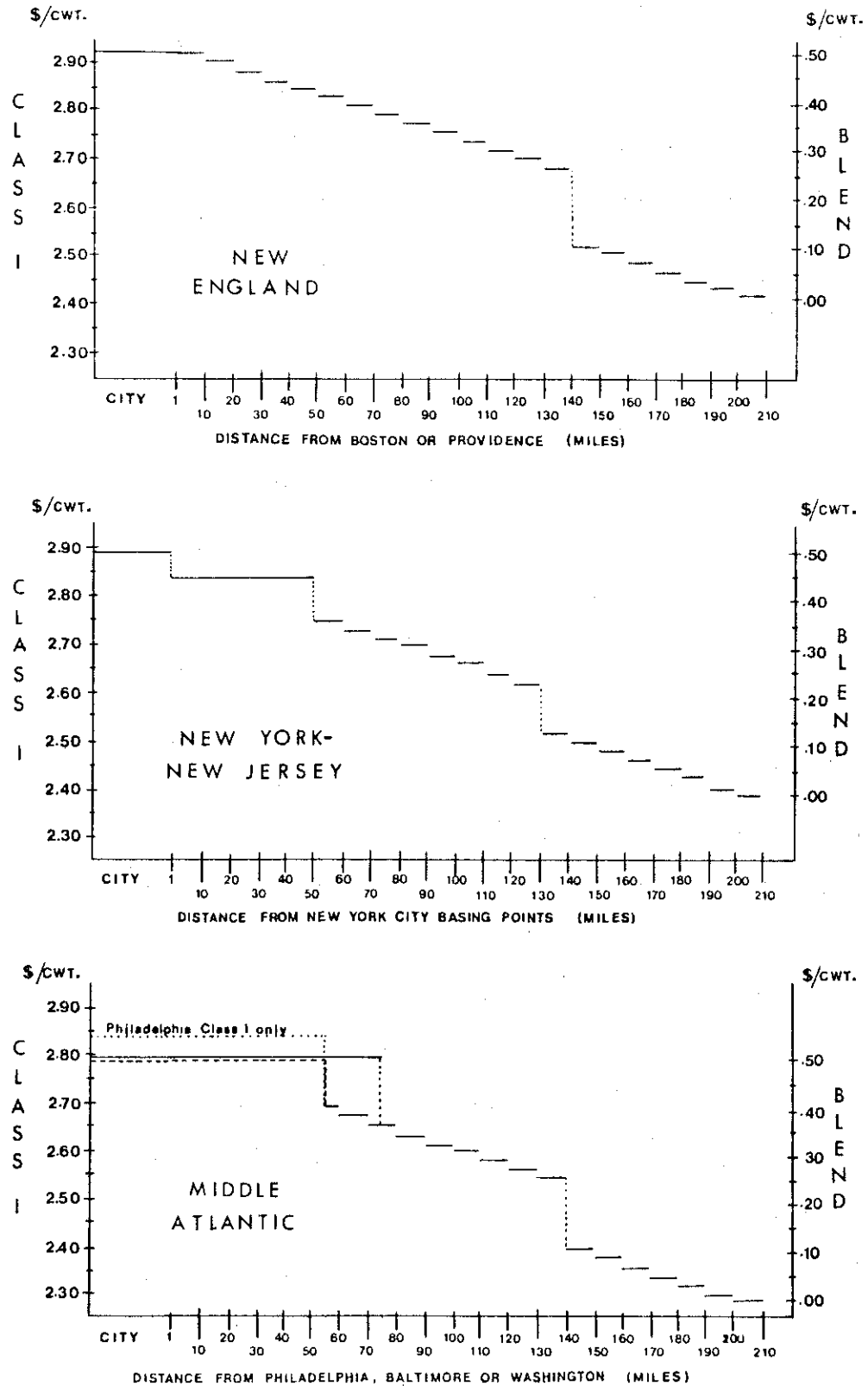


FIGURE 4

CLASS I AND BLEND PRICE LOCATION DIFFERENTIALS FOR THE THREE NORTHEAST FEDERAL MILK MARKETING ORDERS UNDER SCENARIO A

### Pricing Scenario B

This pricing scenario involved the use of the same Class I transportation differential in all city zones. The differential used was \$2.78, and was that in effect in Baltimore/Washington zones of Order 4 during the period of the study. Direct delivery differentials of varying amounts were used in addition to the Class I transportation differential as follows:

<u>City Zones</u>	<u>Direct Delivery Differential</u>
Boston/Providence (Zone 1-8)	\$0.14
New York City, Long Island	0.11
New York-New Jersey (0-50 mile zone)	0.06
Philadelphia (0-55 mile zone)	0.06
Baltimore/Washington	0.00

The Class I transportation differentials and direct delivery differentials combined resulted in the same level of price for Class I milk for each city zone as Pricing Scenario A. It thus involved only the manner by which the price was achieved and not the level of price in city zones. However, the effective levels of Class I prices beyond the city zones were different for Scenario B than for Scenario A (Figure 5).

The direct delivery differential was paid by handlers directly to producers on all milk received from producers, including both Class I and Class II milk; and this increased the level of Class II prices. The differential was not pooled but was paid to producers who delivered milk directly from their farms to city zone plants (see Figure 6).

The direct delivery differential in the Order No. 1 area extended to Zone 8, which included plants in the Springfield, Massachusetts area. The direct delivery differential in Order No. 2 applied to plants in the New York

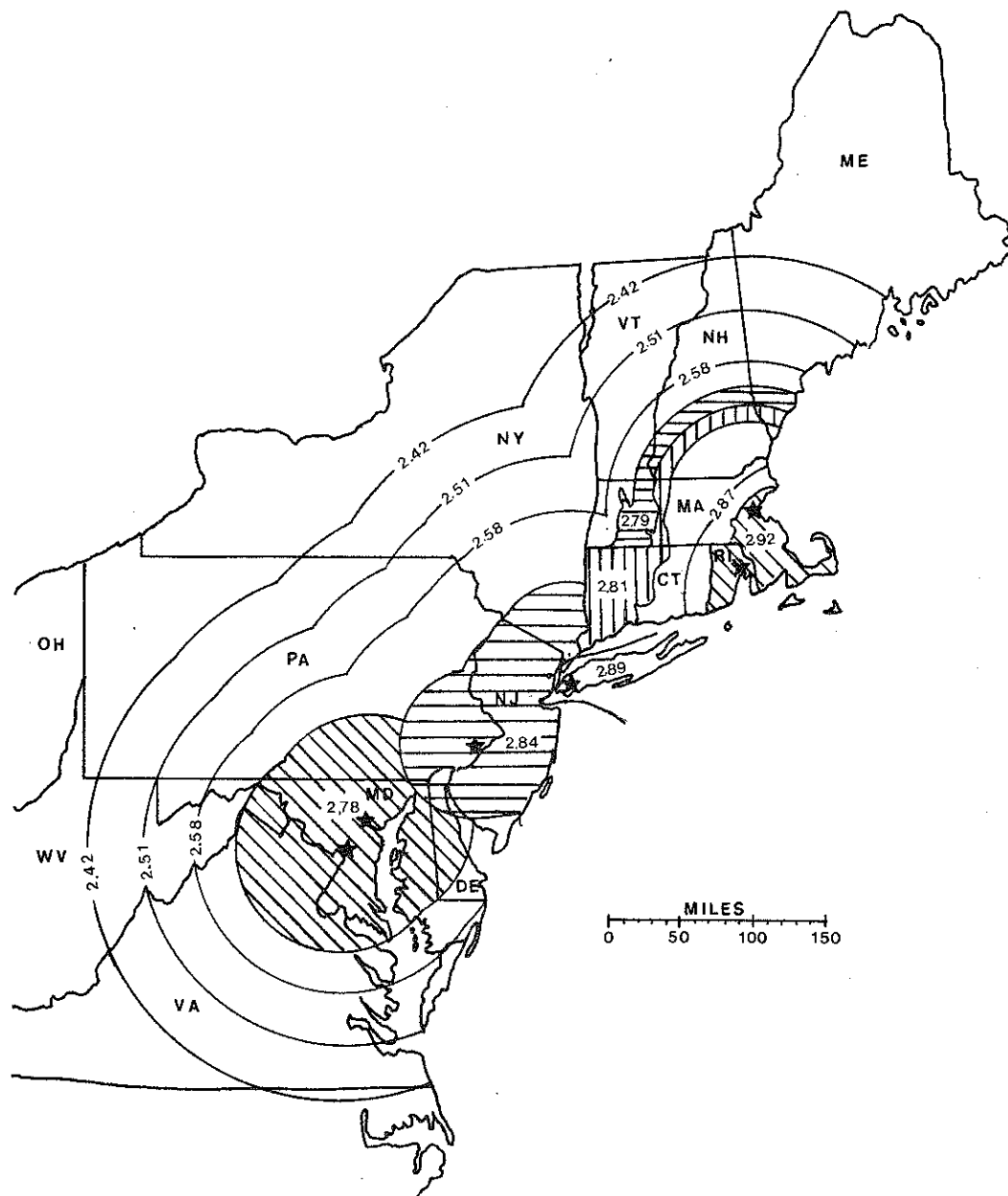


FIGURE 5

CLASS I LOCATION DIFFERENTIALS, CITY ZONES AND SELECTED MILEAGE ZONES,  
FOR A CONSOLIDATED NORTHEAST FEDERAL MILK MARKETING ORDER  
UNDER SCENARIOS B AND C  
(dollars per hundredweight)



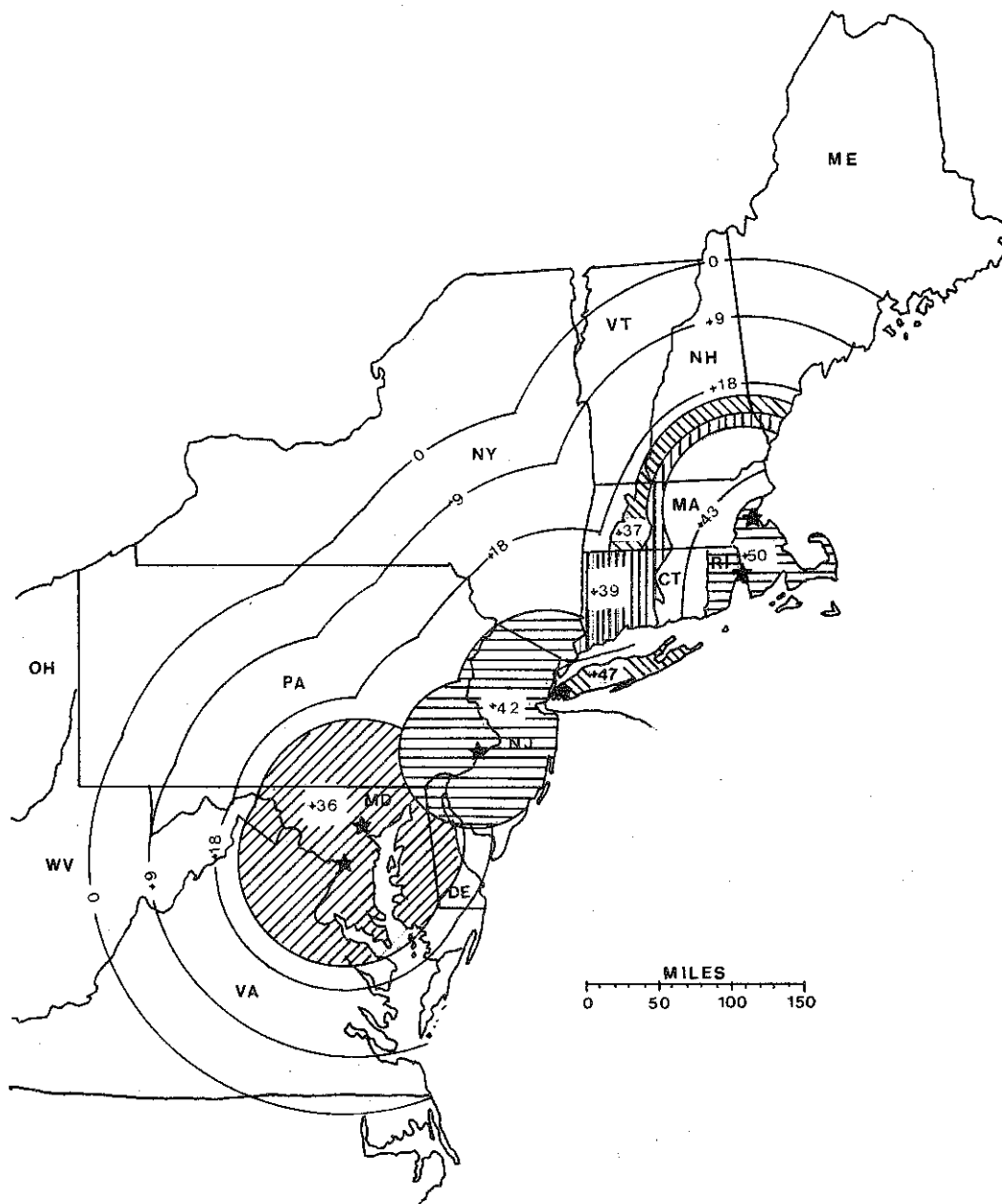


FIGURE 6

BLEND PRICE LOCATION DIFFERENTIALS, CITY ZONES AND SELECTED MILEAGE ZONES,  
FOR A CONSOLIDATED NORTHEAST FEDERAL MILK MARKETING ORDER  
UNDER SCENARIOS B AND C  
(cents per hundredweight)

City zone and in the 1-50 mile zone. The direct delivery differential for Order No. 4 applied only to the Philadelphia city zone.

With Pricing Scenario B, the direct delivery differential replaced the 14-cent price break at the 14th zone and applied to all producer milk delivered directly to city zone plants regardless of the distance the milk was shipped.

Because of the replacement of the 14-cent price break at the 14th zone in Scenario B, Class I prices to handlers and blend prices to producers were lower for Scenario B between the outer boundary of the direct delivery zones and the 14th zone (Figures 4 and 7).

The price of Class II milk direct delivered to city zone plants was higher than underpricing Scenario A by the amount of the applicable direct delivery differential.

Transportation differentials between Zone 21 and Zone 1 aggregated to 36 cents with pricing Scenario B.

#### Pricing Scenario C

Pricing Scenario C was the same as Scenario B except that the direct delivery differential was changed to a delivery area location differential which applied only to Class I and blend prices and not to the Class II price. The delivery area location differential applicable to Class I milk delivered directly to city zone plants is paid to the pool and the delivery area location differential applicable to the blend price is paid from the pool. Since handlers pay the differential only on Class I milk and producers receive the differential on all milk (both Class I and II), the payments by handlers into the pool are less than the payments to producers from the pool. This reduces the blend price paid to all producers. The amount of the blend price reduction depends on the quantity of Class II milk delivered directly to city

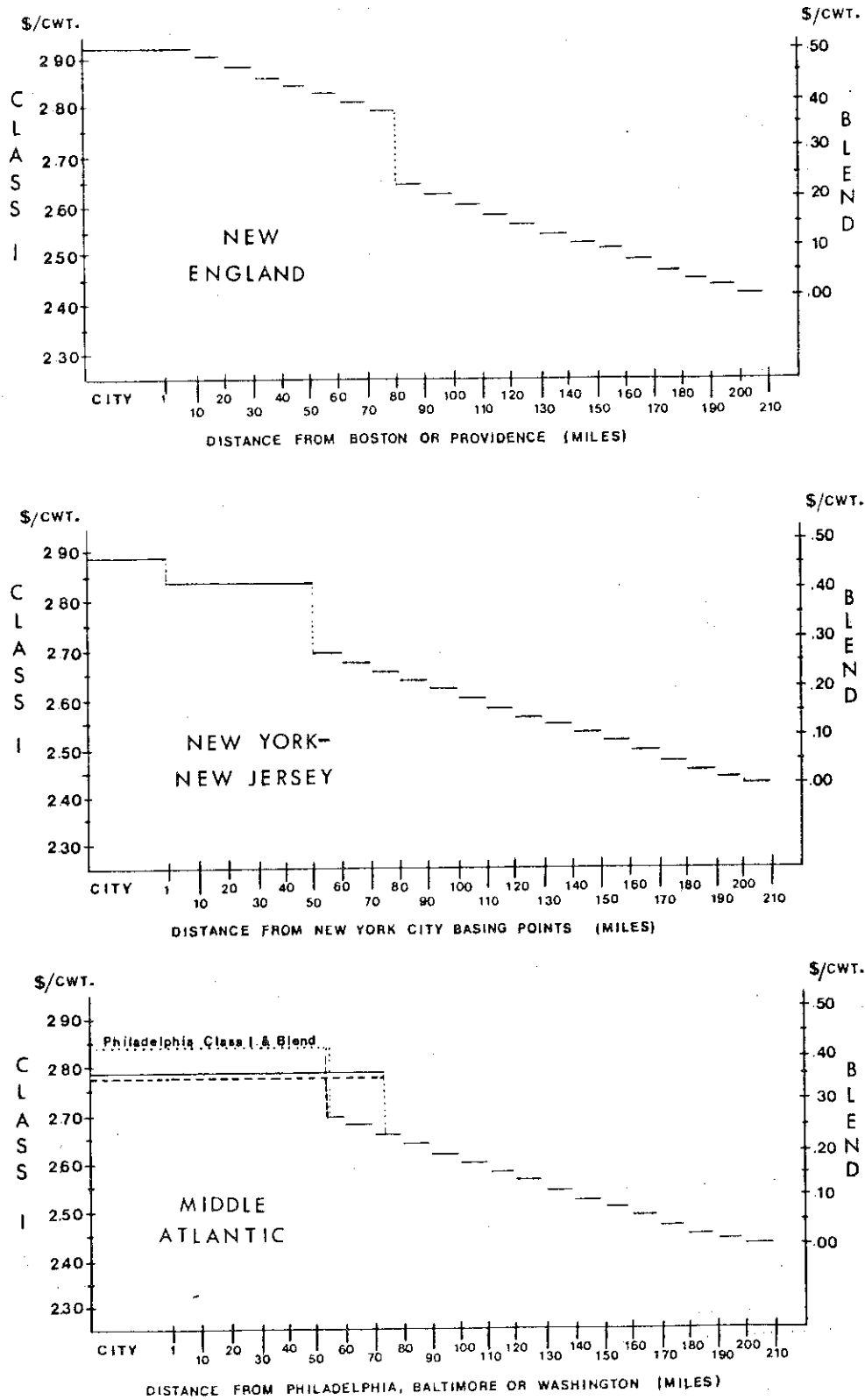


FIGURE 7

CLASS I AND BLEND PRICE LOCATION DIFFERENTIALS FOR THE  
THREE NORTHEAST FEDERAL MILK MARKETING ORDERS UNDER SCENARIOS B AND C

zone plants since handlers do not pay the differential on the Class II milk but producers receive the differential on this milk.

With this pricing scenario base, Class I transportation differentials were the same for all city zones--\$2.78. This was the differential in effect for the Baltimore/Washington city zones at the time the study was made.

The 14-cent price break is eliminated from the transportation differential schedule and the differential between Zone 21 and Zone 1 aggregates to 36 cents.

As with Pricing Scenario B, the delivery area location differential used in place of the direct differential is used to differentiate the price of direct delivery Class I milk from the price of Class I milk that is reloaded.

#### IMPACT OF DIFFERENT PRICING SCENARIOS IN BLEND PRICES IN THE THREE FEDERAL ORDERS

Pricing Scenarios B and C resulted in higher blend prices except for the Baltimore/Washington zones of Order No. 4 (Table 6). Pricing Scenario B resulted in the highest blend prices in Orders No. 1 and No. 2 and in the Philadelphia zone of Order No. 4. The Baltimore/Washington zone of Order No. 4 experienced the highest blend prices with Pricing Scenario A and the lowest with Scenario C.

The full pooling of Class I prices would yield the largest gains in blend prices in Order No. 4, particularly in the Baltimore and Washington zones. With this pricing mechanism in Order No. 4, producers would benefit from the higher Class I prices in Orders 1 and 2. The payment of a portion of the fluid differential in the form of a direct delivery or delivery area location differential results in higher blend prices in Order No. 1 and No. 2. Use of such a differential would distribute a portion of the effective Class I price to producers delivering milk to the city zones in these orders.

Conversely, a smaller proportion of the Class I milk value would be pooled and distributed proportionately to all producers. Direct delivery and delivery area location differentials do assist handlers in attracting Class I milk to city zone delivery points.

TABLE 6  
EFFECT OF RECALCULATING BLEND PRICES  
USING DIFFERENT PRICING SCENARIOS

Pricing Scenario	Federal Order 1		Federal Order 2	Federal Order 4	
	Zone 1	Zone 21	201-210 m.z.	Philadelphia	Baltimore- Washington
-----change from actual blend, dollars per hundredweight----					
<u>December 1977</u>					
A	-.005	-.105	+.250	+.031	+.091
B	+.015	-.085	+.269	+.059	+.059
C	-.003	-.103	+.267	+.051	+.051
<u>May 1978</u>					
A	+.413	+.313	+.645	+.030	+.090
B	+.436	+.336	+.662	+.068	+.068
C	+.415	+.315	+.661	+.061	+.061
<u>December 1978</u>					
A	-.002	-.002	+.248	+.019	+.079
B	+.019	+.019	+.268	+.061	+.061
C	-.001	-.001	+.266	+.054	+.054

### CONSOLIDATION AND EXPANSION ALTERNATIVES

Sixteen different consolidation and/or expansion alternates were studied. Seven alternatives involved consolidation only. Seven involved consolidation and expansion and two involved only the expansion of existing orders. The various alternatives for which blend prices were calculated are listed below.

#### Consolidation Alternatives

1. Orders 1, 2, and 4
2. Orders 1 and 2
3. Orders 2 and 4
4. Orders 1, 2, and New York State Orders
5. Orders 1, 2, 4, and New York State Orders
6. Orders 2, 4, and New York State Orders
7. Order 2 and New York State Orders

#### Consolidation and Extension

1. Orders 1 and 2, and Maine, New York unregulated and Pennsylvania Milk Control Area 2, Zone 2, and Area 3
2. Orders 2 and 4, and New York unregulated and Pennsylvania Milk Control Area 2 and Area 3
3. Orders 1, 2, and 4, and Maine, New York unregulated and Pennsylvania Milk Control Areas 2 and 3
4. Order 2 and New York State Orders and New York unregulated, and Pennsylvania Milk Control Area 2, Zone 2, and Area 3
5. Orders 1, 2, New York State Orders, and Maine, New York unregulated and Pennsylvania Milk Control Area 2, Zone 2, and Area 3
6. Orders 2, 4, New York State Orders and New York unregulated and Pennsylvania Milk Control Areas 2 and 3

7. Orders 1, 2, 4, New York State Orders and Maine, New York unregulated and Pennsylvania Milk Control Areas 2 and 3

Extension Only

1. Order 1 and Maine
2. Order 2 and New York unregulated and Pennsylvania Milk Control Area 2, Zone 2, and Area 3

Deliveries and Utilization for Order Consolidation and/or  
Expansion Alternatives

The 14 different consolidations and/or expansion alternatives considered in this study involved various combinations of eight different volumes of milk. The volumes of milk and utilizations for each of these categories in May and December 1978 are presented in Table 7. The three federal and two New York State Orders in both months accounted for about 95 percent of all the milk volume involved in this study. The Class I utilization percentages varied among the various marketing orders in both months. The percentages were higher for all of the nonorder categories, however, than for any of the milk orders. The nonorder categories accounted for about one percent of the total Class II milk volume, but accounted for more than eight percent of the Class I milk. The differences in Class I utilization among the various categories of milk accounted for a significant proportion of the blend price variation among the various consolidation and/or expansion alternatives that were analyzed.

THE IMPACT OF VARIOUS CONSOLIDATION AND  
EXPANSION ALTERNATIVES ON BLEND PRICES

The different consolidation and expansion alternatives had different impacts on blend prices. Gains and losses in blend prices varied by marketing

TABLE 7  
PRODUCER DELIVERIES AND UTILIZATION  
BY ORDERS AND EXPANSION AREAS

Orders and Areas	Producer Deliveries <sup>1/</sup>	Class I Utilization <sup>1/</sup>	Class II Utilization <sup>1/</sup>	Percent Class I
-----million pounds-----				
<u>May 1978</u>				
Order 1	462.9	248.2	214.7	53.6
Order 2	933.9	415.2	518.7	44.5
Order 4	474.3	246.8	227.5	52.0
New York State Orders	95.9	39.8	56.1	41.5
New York State, Unregulated	30.6	29.8	0.8	97.4
Maine, Regulated	33.1	25.3	7.8	76.4
Pennsylvania, Milk Control Areas				
Area 2, Zone 2, Area 3	26.8	24.0	2.7	89.6
Area 2, Zone 1	12.9	11.2	1.6	86.8
Total or Average	2,070.4	1,040.3	1,029.9	50.2
<u>December 1978</u>				
Order 1	408.1	245.9	162.3	60.2
Order 2	804.3	411.9	392.4	51.2
Order 4	450.8	248.8	202.0	55.2
New York State Orders	88.2	40.5	47.7	45.9
New York State, Unregulated	31.2	30.6	0.6	98.1
Maine, Regulated	29.6	24.8	4.8	83.8
Pennsylvania, Milk Control Areas				
Area 2, Zone 2, Area 3	24.6	22.2	2.4	90.2
Area 2, Zone 1	12.3	10.6	1.7	86.2
Total or Average	1,849.1	1,035.3	813.9	56.0

<sup>1/</sup> May not add to total due to rounding.



order, by month and by pricing scenario. Most alternatives resulted in lower blend prices in Federal Order 1 and in the Rochester and Niagara Frontier Orders, but most resulted in higher blend prices in Federal Order 2. The largest gains in blend prices under most alternatives were in the city zones of Order 4. The expansion of marketing orders significantly modified the impact of consolidation. Declines in blend prices in Order 1 and in the Rochester and Niagara Frontier Orders were smaller and gains in blend prices in Orders 1 and 4 were increased by the expansion of order regulation.

Producer deliveries have the greatest seasonal variations in Order 2 and the least in Order 4. Consequently, gains in blend prices in Order 2 were greater in May than in December for nearly all alternatives. Conversely, gains in Order 4 were greater in December than in May. The differences in seasonal deliveries between Orders 2 and 4 affected the blend price impact of consolidations involving these two orders.

The shift of a major processing plant from Order 4 to Order 2 in May of 1978 significantly influenced blend prices in these two orders. Blend prices were increased in Order 2 and decreased in Order 4 as the result of this plant shift. The increases in blend prices resulting from consolidations involving Order 2 were relatively greater in December 1977 than in December 1978. For consolidations involving Order 4, blend price increases were relatively greater in December 1978 blend price comparisons for essentially all alternatives.

The different pricing scenarios also affected the impact of the various alternatives on blend prices. The effects were different in different markets. Pricing Scenarios B and C which involved the use of direct and delivery area location differentials, were relatively more favorable for Federal Order 1, but less favorable for Order 4 than Pricing Scenario A. The use of direct delivery differentials retained more of the Class I price differential for Order 1

producers. Order 4 producers, particularly in the Baltimore and Washington markets, were most favored when the Class I differential was fully pooled. Order 2 also was favored by the use of direct delivery or delivery area location differentials rather than by fully pooling the Class I differentials as was the case with Scenario A.

The consolidation of the three federal orders could be achieved with a minimal impact on blend prices if the orders were expanded at the same time and if direct delivery differentials were used in pricing Class I milk. Losses in blend prices in Order 1 would not exceed 6 cents per hundredweight. Gains in Order 2 probably would not exceed 9 cents and gains in Order 4 probably would not exceed 10 cents.

The consolidation of Orders 1 and 2 would result in losses in blend price in Order 1 of not more than 2 cents per hundredweight on an annual basis if the orders were expanded at the same time and if direct delivery or delivery area location differentials were used in pricing. Gains in Order 2 probably would not exceed 10 cents on an annual basis under this alternative.

THE IMPACT OF CONSOLIDATION AND EXPANSION ALTERNATIVES  
ON BLEND PRICES IN FEDERAL ORDER 1

All of the consolidation and expansion alternatives analyzed, except the expansion of Order 1 to Maine, resulted in lower blend prices in that order (Table 8). The expansion of Order 1 to include Maine would increase blend prices in Order 1 about 3.5 cents to 5.5 cents on an annual basis depending on the method of pricing used. Reductions in blend prices with other alternatives ranged from about 14 cents on an annual basis to about 2 cents. Reductions were less with the consolidation of Orders 1 and 2 than with the consolidation of Orders 1, 2 and 4. Expansion along with consolidation resulted in significantly

TABLE 8  
IMPACT OF ORDER CONSOLIDATION AND EXPANSION ALTERNATIVES ON BLEND PRICES  
UNDER THREE DIFFERENT PRICING SCENARIOS, FEDERAL ORDER 1

Consolidation and/or Expansion Alternatives	Pricing Scenario A			Pricing Scenario B			Pricing Scenario C		
	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78
-----dollars per hundredweight-----									
<u>Consolidations</u>									
Orders 1, 2	-.128	-.112	-.073	-.109	-.094	-.053	-.116	-.101	-.061
Orders 1, 2, NYS Orders	-.128	-.111	-.072	-.109	-.093	-.051	-.116	-.101	-.060
Orders 1, 2, 4	-.169	-.145	-.137	-.123	-.102	-.089	-.130	-.109	-.097
Orders 1, 2, 4, NYS Orders	-.168	-.143	-.133	-.122	-.100	-.086	-.129	-.108	-.094
<u>Consolidations and Expansions</u>									
Orders 1, 2, NYS Orders, ME, NY, PA	-.079	-.058	-.030	-.059	-.040	-.009	-.066	-.047	-.017
Orders 1, 2, ME, NY, PA	-.075	-.056	-.027	-.056	-.037	-.007	-.063	-.044	-.016
Orders 1, 2, 4, NYS Orders, ME, NY, PA	-.125	-.096	-.094	-.081	-.054	-.049	-.088	-.061	-.056
Orders 1, 2, 4, ME, NY, PA	-.125	-.095	-.096	-.079	-.053	-.050	-.086	-.060	-.057
<u>Expansion</u>									
Order 1 plus ME	+.039	+.037	+.033	+.058	+.059	+.053	+.041	+.039	+.034

smaller declines in blend prices. Expansion tempered the decline more with the Order 1 and 2 consolidation than with the Order 1, 2 and 4 consolidation. There was more variation between May and December declines in blend prices in the Order 1 and 2 consolidations than with the Order 1, 2 and 4 consolidation. The difference in the May and December declines also were less if the orders were expanded along with consolidation.

The consolidation, including Order 1, resulted in smaller blend price declines in December 1978 than in December 1977. This was because of the shift of a major processing plant from Order 4 to Order 2 in May of 1978.

Blend prices in Order No. 1 would decline if that order was consolidated with other northeastern orders because fluid differentials and fluid utilization are higher in Order No. 1 than in the other orders. Expansion of the orders along with consolidation would offset a portion of the blend price decline because fluid utilization with the consolidated and expanded order would be close to the existing fluid utilization in Order No. 1. The use of direct delivery or delivery area location differentials would allocate a portion of the fluid differential to Order No. 1 producers rather than pooling this value over all producers in the consolidated orders.

The impact on Order 1 blend prices would not be a serious obstacle to order consolidation if the consolidated order was expanded and provided direct delivery differentials were used in the resulting order.

THE IMPACT OF CONSOLIDATION AND EXPANSION ALTERNATIVES  
ON BLEND PRICES IN FEDERAL ORDER 2

Most consolidation and expansion alternatives would result in increases in blend prices but the increases would be relatively modest, ranging from almost

no change to a maximum of about 10 cents (Table 9). Consolidation with Order 1 would yield the largest gains and consolidation with Order 4 the smallest. Expansion with consolidation would add significantly to the gain in blend prices. Because of the greater seasonal variation in producer deliveries in Order 2, order consolidation would increase blend prices relatively more to Order 2 producers in May than in December.

Increases in blend prices to Order 2 producers under essentially all alternatives were increased if a portion of the Class I differential was paid as a direct delivery differential. This portion of the Class I differential would be retained for producers delivering milk to the New York-New Jersey Metropolitan Area even though orders were consolidated. Without direct delivery or delivery area location differentials, all of the Class I differential would be pooled and shared proportionately among all producers in a consolidated order.

Of the various consolidation alternatives, the consolidation of Orders 1 and 2 would yield the largest increases in blend prices to Order 2 producers. Consolidation of Orders 2 and 4 would have very little effect on blend prices to Order 2 producers. Prices would be higher in the flush months, but would be lower in the short production months and on an annual basis would change very little. The consolidation of Orders 1, 2 and 4 would increase blend prices by 3 or 4 cents if direct delivery differentials were used but would have almost no effect on blend prices in Class I differentials were fully pooled.

The expansion of Order 2 would increase blend prices more than any of the consolidation alternatives. The consolidation of Orders 1 and 2 together with expansion would yield the largest gains in blend prices to Order 2 producers. The consolidation of Orders 1, 2 and 4 would increase blend prices to Order 2 producers 8 to 9 cents on an annual basis, provided the orders were expanded at

TABLE 9

IMPACT OF ORDER CONSOLIDATION AND EXPANSION ALTERNATIVES ON BLEND PRICES  
UNDER THREE DIFFERENT PRICING SCENARIOS, FEDERAL ORDER 2

Consolidation and/or Expansion Alternatives	Pricing Scenario A			Pricing Scenario B			Pricing Scenario C		
	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78
-----dollars per hundredweight-----									
<u>Consolidations</u>									
Orders 1, 2	-.067	+.056	+.037	+.086	+.074	+.057	+.079	+.067	+.049
Orders 1, 2, NYS Orders	+.067	+.057	+.038	+.086	+.075	+.059	+.079	+.067	+.050
Orders 2, 4	-.030	-.025	-.071	+.026	+.026	-.015	+.022	+.022	-.019
Orders 2, 4, NYS Orders	-.024	-.019	-.063	+.030	+.030	-.009	+.025	+.026	-.013
Orders 1, 2, 4	+.026	+.023	-.027	+.072	+.066	+.021	+.065	+.059	+.013
Orders 1, 2, 4, NYS Orders	-.027	+.025	-.023	+.073	+.068	+.024	+.066	+.060	+.016
Orders 2, NYS Orders	+.006	+.007	+.005	+.025	+.023	+.026	+.023	+.022	+.023
<u>Consolidations and Expansions</u>									
Orders 1, 2, ME, NY, PA	+.120	+.112	+.083	+.139	+.131	+.103	+.132	+.124	+.095
Orders 1, 2, NYS Orders, ME, NY, PA	+.116	+.110	+.080	+.136	+.128	+.101	+.129	+.121	+.093
Orders 2, 4, NY, PA	+.016	+.028	-.028	+.070	+.078	+.026	+.067	+.075	+.023
Orders 2, 4, NYS Orders, NY, PA	+.018	+.031	-.024	+.071	+.079	+.030	+.067	+.075	+.026
Orders 1, 2, 4, ME, NY, PA	+.070	+.073	+.014	+.116	+.115	+.060	+.109	+.108	+.053
Orders 1, 2, 4, NYS Orders, ME, NY, PA	+.070	+.072	+.016	+.114	+.114	+.061	+.107	+.107	+.054
Orders 2, NYS Orders, NY, PA	+.060	+.066	+.052	+.080	+.084	+.073	+.077	+.082	+.070
<u>Expansion Only</u>									
Order 2 and NY, PA	+.060	+.066	+.052	+.079	+.083	+.072	+.078	+.082	+.070

the same time and provided a portion of the Class I differential were paid as a direct delivery differential. Otherwise, the three federal order consolidation would increase blend prices to Order 2 producers less than the expansion of Order 2.

THE IMPACT OF CONSOLIDATION AND EXPANSION ALTERNATIVES  
ON BLEND PRICES IN FEDERAL ORDER 4

All of the consolidation and expansion alternatives resulted in higher blend prices in the city zones of Order 4 on an annual basis but some alternatives reduced blend prices in the 201-210 mile zone of that order (Table 10). A large proportion of the milk is delivered to city zone plants and thus most consolidation and expansion alternatives would result in higher blend prices to most Order 4 producers.

The shift of a major processing plant from Order 4 to Order 2 in May of 1978 increased the advantage of order consolidation to Order 4 producers. Blend price increases under most alternatives were 5 to 6 cents greater in December 1978 than in December 1977 because of the plant shift.

Blend price increases to Order 4 producers were substantially greater in December 1978 than in May 1978. The variation from December to May was somewhat less with the three federal order merger than with the merger of Order 4 with Order 2, but the variation was significant with the three-order merger. The variation was due to the relative evenness of production patterns in Order 4, particularly in comparison to Order 2.

The method of pricing had more impact on blend price changes in Order 4 than in the other markets. Larger gains in blend prices resulted in Order 4 when Class I prices were fully pooled. The use of direct delivery or delivery area location differentials reduced the gains in blend prices with some

TABLE 10  
IMPACT OF ORDER CONSOLIDATION AND EXPANSION ALTERNATIVES ON BLEND PRICES  
UNDER THREE DIFFERENT PRICING SCENARIOS, FEDERAL ORDER 4

Consolidation and/or Expansion Alternatives	Pricing Scenario A			Pricing Scenario B			Pricing Scenario C		
	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78
-----dollars per hundred weight-----									
<u>Consolidations</u>									
Orders 2, 4									
Philadelphia	+0.010	+0.010	+0.077	-0.014	-0.019	+0.053	-0.018	-0.023	+0.049
Baltimore-Washington	+0.070	+0.070	+0.137	-0.014	-0.019	+0.053	-0.018	-0.023	+0.049
201-210 M.Z.	-0.130	-0.130	-0.063	-0.074	-0.079	-0.007	-0.078	-0.083	-0.011
Orders 2, 4, NYS Orders									
Philadelphia	+0.016	+0.016	+0.085	-0.010	-0.015	+0.059	-0.015	-0.019	+0.055
Baltimore-Washington	+0.076	+0.076	+0.145	-0.010	-0.015	+0.059	-0.015	-0.019	+0.055
201-210 M.Z.	-0.124	-0.124	-0.055	-0.070	-0.075	-0.001	-0.075	-0.079	-0.005
Orders 1, 2, 4									
Philadelphia	+0.066	+0.058	+0.121	+0.032	+0.021	+0.089	+0.025	+0.014	+0.081
Baltimore-Washington	+0.126	+0.118	+0.181	+0.032	+0.021	+0.089	+0.025	+0.014	+0.081
201-210 M.Z.	-0.074	-0.082	-0.019	-0.028	-0.039	+0.029	-0.035	-0.046	+0.021
Orders 1, 2, 4, NYS Orders									
Philadelphia	+0.067	+0.060	+0.125	+0.033	+0.023	+0.092	+0.026	+0.015	+0.084
Baltimore-Washington	+0.127	+0.120	+0.185	+0.033	+0.023	+0.092	+0.026	+0.015	+0.084
201-210 M.Z.	-0.073	-0.080	-0.015	-0.027	-0.037	+0.032	-0.034	-0.045	+0.024
<u>Consolidations and Expansions</u>									
Orders 2, 4, NY, PA									
Philadelphia	+0.056	+0.063	+0.120	+0.030	+0.033	+0.094	+0.027	+0.030	+0.091
Baltimore-Washington	+0.116	+0.123	+0.180	+0.030	+0.033	+0.094	+0.027	+0.030	+0.091
201-210 M.Z.	-0.084	-0.077	-0.020	-0.030	-0.027	+0.034	-0.033	-0.030	+0.031
Orders 2, 4, NYS Orders, NY, PA									
Philadelphia	+0.058	+0.066	+0.124	+0.031	+0.034	+0.098	+0.027	+0.030	+0.094
Baltimore-Washington	+0.118	+0.126	+0.184	+0.031	+0.034	+0.098	+0.027	+0.030	+0.094
201-210 M.Z.	-0.082	-0.074	-0.016	-0.029	-0.026	+0.038	-0.033	-0.030	+0.034
Orders 1, 2, 4, ME, NY, PA									
Philadelphia	+0.110	+0.108	+0.162	+0.076	+0.070	+0.128	+0.069	+0.063	+0.121
Baltimore-Washington	+0.170	+0.168	+0.222	+0.076	+0.070	+0.128	+0.069	+0.063	+0.121
201-210 M.Z.	-0.030	-0.032	+0.022	+0.016	+0.010	+0.068	+0.009	+0.003	+0.061
Orders 1, 2, 4, NYS Orders, ME, NY, PA									
Philadelphia	+0.114	+0.107	+0.164	+0.074	+0.069	+0.129	+0.067	+0.062	+0.122
Baltimore-Washington	+0.174	+0.167	+0.224	+0.074	+0.069	+0.129	+0.067	+0.062	+0.122
201-210 M.Z.	-0.026	-0.033	+0.024	+0.014	+0.009	+0.069	+0.007	+0.002	+0.062



alternatives by nearly 10 cents in the Baltimore/Washington segment of the market and by nearly 4 cents in the Philadelphia segment of the market. Order 4 benefitted from the higher Class I differentials in Orders 1 and 2 when the differentials were fully pooled across the three orders.

The impact of order consolidation on blend prices would not be a deterrent to the merger of Order 4 with Order 2 or with Orders 1 and 2, provided the orders were extended at the same time.

The increases in blend prices that occur in Order 4 under the various consolidation and expansion alternates results primarily from four factors:

- 1) The Class I utilization percentage is higher than in the other orders except Order No. 1;
- 2) A higher proportion of the milk supply is delivered directly to city zone plants than in the other orders;
- 3) There is less seasonality in producer deliveries in Order No. 4 than in the other orders;
- 4) Fluid differentials are lowered in Order No. 4 than in the other orders.

THE IMPACT OF ORDER CONSOLIDATION AND MERGER ON BLEND PRICES  
IN THE ROCHESTER AND NIAGARA FRONTIER ORDERS

Nearly all of the order consolidation and expansion alternatives analyzed resulted in lower blend prices for Niagara Frontier and Rochester order producers (Tables 11 and 12). The consolidation of these orders with Orders 1 and 2 and their simultaneous expansion resulted in higher blend prices in the Niagara Frontier market but not in the Rochester market. The largest decreases occurred in both orders when consolidated with Order 2. The consolidation of the two state orders and the three federal orders resulted in relatively small

TABLE 11  
IMPACT OF ORDER CONSOLIDATION AND EXPANSION ALTERNATIVES ON BLEND PRICES  
UNDER THREE DIFFERENT PRICING SCENARIOS, NIAGARA FRONTIER ORDER

Consolidation and/or Expansion Alternatives	Pricing Scenario A			Pricing Scenario B			Pricing Scenario C		
	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78
	dollars per hundredweight								
<u>Consolidation</u>									
Order 2 and NYS Orders									
Orders 1, 2, NYS Orders	-.127	-.082	-.080	-.108	-.066	-.059	-.110	-.067	-.062
Orders 2, 4, NYS Orders	-.066	-.032	-.047	-.047	-.014	-.026	-.054	-.022	-.035
Orders 1, 2, 4, NYS Orders	-.157	-.108	-.148	-.103	-.059	-.094	-.108	-.063	-.098
Orders 1, 2, 4, NYS Orders	-.106	-.064	-.108	-.060	-.021	-.061	-.067	-.029	-.069
<u>Consolidations and Expansions</u>									
Orders 2, NYS Orders, NY, PA									
Orders 1, 2, ME, NYS Orders, NY, PA	-.073	-.023	-.033	-.053	-.005	-.012	-.056	-.007	-.015
Orders 2, 4, NYS Orders, NY, PA	-.017	+.021	-.005	+.003	+.039	+.016	-.004	+.032	+.008
Orders 1, 2, 4, NYS Orders, ME, NY, PA	-.115	-.058	-.109	-.062	-.010	-.055	-.066	-.014	-.059
Orders 1, 2, 4, NYS Orders, ME, NY, PA	-.063	-.017	-.069	-.019	+.025	-.024	-.026	+.018	-.031

TABLE 12

IMPACT OF ORDER CONSOLIDATION AND EXPANSION ALTERNATIVES ON BLEND PRICES  
UNDER THREE DIFFERENT PRICING SCENARIOS, ROCHESTER ORDER

Consolidation and/or Expansion Alternatives	Pricing Scenario A			Pricing Scenario B			Pricing Scenario C		
	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78	Dec 77	May 78	Dec 78
-----dollars per hundredweight-----									
<u>Consolidation</u>									
Order 2 and NYS Orders	-.079	-.105	-.142	-.060	-.089	-.121	-.062	-.090	-.124
Orders 1, 2, NYS Orders	-.018	-.055	-.109	+.001	-.037	-.088	-.006	-.045	-.097
Orders 2, 4, NYS Orders	-.109	-.131	-.210	-.055	-.082	-.156	-.060	-.086	-.150
Orders 1, 2, 4, NYS Orders	-.058	-.087	-.170	-.012	-.044	-.123	-.019	-.052	-.131
<u>Consolidations and Expansions</u>									
Order 2, NYS Orders, NY, PA	-.025	-.046	-.095	-.005	-.028	-.074	-.008	-.030	-.077
Orders 1, 2, NYS Orders, NY, PA	+.031	+.002	-.067	+.051	+.016	-.046	+.044	+.009	-.054
Orders 2, 4, NYS Orders, NY, PA	-.067	-.081	-.171	-.014	-.033	-.117	-.018	-.037	-.121
Orders 1, 2, 4, NYS Orders, ME, NY, PA	-.015	-.040	-.131	+.029	+.002	-.086	+.022	-.005	-.093

declines in blend in the Niagara Frontier market if the orders were also expanded, but the declines in the Rochester market were significant with this alternative, particularly in December. Declines in both state orders were greater in December than May under all alternatives.

Full pooling of Class I differentials resulted in greater blend price declines in both orders than when direct delivery or delivery area location differentials were used.

The decline in blend prices in the two state order markets results from several factors: 1) Class I prices in these orders are significantly higher than in the comparable zones of the other orders; 2) blend prices in the state orders prior to deducting for advertising and promotion are significantly higher than in the adjacent areas of Order 2.

Class I prices could not be adjusted to be comparable with the other orders without much greater downward adjustments in blend prices than would occur if these orders were consolidated with the other orders. Class I utilization percentages are relatively lower in the two state orders than in the other orders.

#### CONSIDERATIONS IN INTERPRETING BLEND PRICE CHANGES

A number of factors could alter the impact of order consolidations on blend prices from those reported in this study. The rezoning of plants in all three orders on the basis of the nearest city zoning point would decrease mileages to some plants and raise Class I and blend prices at those locations. Rezoning of the current Order 2 plants on the basis of a zoning point at Kew Gardens in Queens would increase mileages to most plants and would lower Class I and blend prices. Zoning from Kew Gardens would permit all of the price break in the transportation differential schedule in the Order 2 area to occur at the

140-mile zone. This would lower Class I and blend prices from Zone 1 to Zone 14. It is not possible from this study to determine the overall effect that rezoning would have on Class I or blend prices in a consolidated order.

It is impossible to determine the extent to which order consolidation would alter farm-to-plant milk-flow patterns. The Buccula-Connor<sup>3/</sup> study suggests that hauling distances could be reduced in a consolidated order setting. If this occurred it would increase blend prices to producers, but there is no basis for determining from this study if this would occur and, if it did, what the impact would be.

The development of a consolidated order on a plant-pricing basis could alter the classification of milk within the present Order 2 milkshed. Under Pricing Scenarios A and C there would be increased incentive for Class II milk volumes to increase in city zones. If this occurred, it would increase pool deductions for location differentials and reduce blend prices (Table 13). Use of direct delivery differentials that applied to both Class I and Class II milk (Scenario C) would reduce the incentives to utilize Class II milk in city zones.

Some specific terms and provisions of consolidated orders also could alter blend prices from those reported in this study. A number of provisions such as location differentials and allocation procedures have the potential for altering blend prices in base zones as well as the geographic variation in those prices.

This study does not permit precise determination on the impact of order consolidation and/or expansion on blend prices on an annual basis. The two

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<sup>3/</sup> Steven T. Buccula and M. C. Connor, Potential Efficiencies Through Coordination of Milk Assembly and Milk Manufacturing Plant Location in the Northeastern United States, Research Division Bulletin 149, Virginia Polytechnic Institute and State University, July 1979.

TABLE 13  
PERCENTAGE OF CLASS II MILK BY MILEAGE ZONE CATEGORIES

Mileage Zone Category	Federal Order No. 1			Federal Order No. 2			Federal Order No. 4			Consolidated & Expanded Order		
	May		Dec.	May		Dec.	May		Dec.	May		Dec.
	1977	1978	1978	1977	1978	1978	1977	1978	1978 <sup>1/</sup>	1977	1978	1978
-----percent of total-----												
Inside 201-210	56.9	52.3	56.9	24.0	22.5	22.4	97.3	96.5	100.0	47.6	44.5	47.8
201-210	18.4	16.1	18.4	1.4	3.1	2.3	0.0	0.0	0.0	4.3	4.9	4.8
Beyond 201-210	24.7	31.6	24.7	74.6	74.4	75.3	2.7	3.5	0.0	48.1	50.6	47.4

<sup>1/</sup> A small quantity of milk representing less than one percent of Class II volume in Federal Order No. 4 in December 1978 was delivered beyond the 201-210 mile zone but was included with the milk delivered inside the 201-210 mile zone to protect the confidentiality of the data.

months analyzed do not permit precise estimates of the annual changes in blend prices nor do they reflect the full range in seasonal variation in milk supplies. May represents the seasonal high in supplies but December does not represent the seasonal low. In 1978, milk supplies in December in the five order markets involved in this study were 3.6 percent higher on a daily basis than in November, which was the seasonal low month.

Changing production and market conditions also could alter the impact of order consolidation on blend prices. Relative changes in producer deliveries and Class I sales in the different orders, could alter blend prices in the respective orders and therefore the impact of order merger and expansion.

In spite of the limitations of this study, it did accomplish its intended purpose. It did indicate for the periods studied what the impact of order consolidation would be on blend prices. It also indicated the extent to which the expansion of orders and modest changes in pricing procedures would alter those impacts. The study also indicated generally the effects that differences in seasonal delivery patterns have on blend prices in the various markets.

#### Summary and Conclusions

The consolidation and expansion of federal milk orders in the Northeast has been a dynamic process extending over more than 40 years. The three contiguous federal marketing areas in the Northeast, the New England Marketing Area, the New York-New Jersey Marketing Area and the Middle Atlantic Marketing Areas all have undergone consolidation and/or expansion since their inception.

A major short-run impact of consolidation of federal marketing orders is on the blend price that dairy farmers receive for their milk. Consolidation usually changes the Class I utilization percentages as well as the average location of farms and plants relative to the specified city pricing zones. The

expansion of federal orders usually increases Class I utilization percentages and blend prices to order producers. Dairy farmers who become subject to order pricing through order expansion may or may not receive higher prices. This depends on whether the milk was previously regulated by state orders; marketwide pooling is used in those orders; and the producers involved were subject to cooperative reblending.

This study concerns the short-run impact on blend prices of various consolidation and expansion alternatives. Three months were selected for study, December 1977, May 1978 and December 1978. These selected months represent year to year and seasonal variability in producer receipts as well as utilization in the various classifications and thus illustrates how this variability impacts on order consolidation and the resulting blend prices.

Federal orders in the Northeast contain many provisions that are not common to all three orders. Some of these provisions impact directly on blend prices. While no attempt has been made in this study to develop the specific provisions of a consolidated order, all provisions that directly affect blend prices but were not common to all orders were eliminated and blend prices were recalculated for each order without these provisions. This was necessary in order to isolate the effects of order consolidation from the effects of the adjustments that had to be made to accommodate for the differences in these particular order provisions.

Three different pricing scenarios were analyzed in this study. All involved the same level of Class I prices in each city zone and were essentially those in effect in each order in December 1978. The city zone prices were achieved by adding various kinds and combinations of location differentials to base zone prices (Table 14).



TABLE 14

CLASS I LOCATION DIFFERENTIALS AT THE 201-210 MILE ZONE AND  
THE CITY ZONE FOR THE THREE NORTHEAST FEDERAL MILK MARKETING  
ORDERS UNDER SCENARIOS A, B AND C.

Pricing Scenario	Class I	Transportation	Direct	Class I
	Location	Differential	Delivery	Location
	Differential	to	or Delivery	Differential
	201-210 Mile Zone	City Zone	Area	City Zone
			Location	
			Differential	
			to City Zone	

<sup>1/</sup> Direct delivery differential applies to Class I, Class II and all  
producer milk.

<sup>2/</sup> Delivery area location differential applies to Class I and all  
producer milk, but not to Class II milk.

The transportation differentials used in all scenarios apply to Class I and blend prices. The direct delivery differential used in Scenario B apply to all producer milk delivered to city zone plants (Class I and II). This differential is paid directly by handlers to producers.

The delivery area location differential used in Scenario C is paid by handlers for all Class I milk delivered directly to city zone plants. Handlers make this payment to the market order pool. Producers receive the differential on all milk delivered directly to city zone plants (Class I and II). This differential is paid from the market order pool.

Altogether 16 different consolidations and expansion alternatives were analyzed in the study for the three specified months and for the three pricing scenarios.

The different consolidation and expansion alternatives had different impacts on blend prices. Gains and losses on blend prices varied by marketing order, by month and by pricing scenario. Most alternatives resulted in lower blend prices in Federal Order No. 1 and the New York State orders (Rochester and Niagara Frontier) and higher blend prices in Order No. 2 and Order No. 4. The inclusion of the federally unregulated areas of Maine, northern New York and eastern Pennsylvania increased blend prices due to the high Class I utilization in those areas. Therefore, the inclusion of these federally unregulated areas would lessen the blend price decline in Order No. 1 and the New York State orders and increase the blend price gain in Order No. 2 and Order No. 4.

Due to producer deliveries having the greatest seasonal variations in Order No. 2 and the least in Order No. 4, the gains in Order No. 2 blend prices were greater in May than in December for nearly all alternatives while the gains in Order No. 4 were greater in December than in May.

The different pricing scenarios also affected the impact of the various alternatives on blend prices. The effects were different in different markets. Pricing Scenarios B and C were relatively more favorable for Federal Order 1 and 2 and the State areas but less favorable for Order 4 than pricing Scenario A. The use of direct delivery differentials or delivery area location differential retained more of the Class I price differential for Order 1 producers. Order 4 producers, particularly in the Baltimore and Washington markets, were most favored when the Class I differential was fully pooled. Order 2 also was favored by the use of direct delivery differentials and delivery area location differentials rather than by fully pooling the Class I differentials as was the case with Scenario A.

The consolidation of the three federal orders could be achieved with a minimal impact on blend prices if the orders were expanded at the same time and if direct delivery differentials were used in pricing Class I milk (Table 15). Losses in blend prices in Order 1 would not exceed 6 cents per hundredweight. Gains in Order 2 probably would not exceed 9 cents and gains in Order 4 probably would not exceed 10 cents.

TABLE 15  
THE IMPACT OF CONSOLIDATING AND EXPANDING THE THREE FEDERAL ORDERS  
IN THE NORTHEAST AND TWO NEW YORK STATE ORDERS USING  
DIRECT DELIVERY DIFFERENTIALS IN PRICING MILK IN SELECTED CITY ZONES

	May 1978	December 1978
	dollars per hundredweight	
Order 1	\$-.081	\$-.054
Order 2	+.114	+.061
Order 4 (city zones)	+.069	+.129
Rochester	+.002	-.086
Niagara Frontier	+.025	-.024

The consolidation of Orders 1 and 2 would result in losses in blend price in Order 1 of not more than 2 cents per hundredweight on an annual basis if the orders were expanded at the same time and if direct delivery differentials were used in pricing. Gains in Order 2 probably would not exceed 10 cents on an annual basis under this alternative.

The gains and losses in blend prices resulting from the consolidation and expansions of milk orders in the Northeast could be narrowed by using somewhat larger direct delivery differentials or delivery area location differentials in Federal Order 1 or in the New York State orders. The use of a seasonal incentive program in a consolidated and expanded milk order also would alter the returns to producers in the various order markets because of the differences in the seasonal patterns among the orders.

Changing market conditions and changes in existing order provisions also would alter the impact of order consolidation on blend prices. Further analysis would be required to assess the impacts of order consolidation under changed conditions.

This study did not attempt to analyze the impact of order consolidation on blend prices over time or the effects on potential marketing efficiencies and costs. Over time it is likely that these factors would outweigh the short-run impacts of order consolidation on blend prices. This analysis would require assumptions about the specific provisions of a consolidated order.

APPENDIX A

TABLE A-1  
NUMBER OF PRODUCERS IN NORTHEAST COUNTIES SHIPPING MILK TO MORE THAN ONE FEDERAL ORDER, DECEMBER 1978

State & County	Federal Order No. 1	Federal Order No. 2	Federal Order No. 4	Total	State & County	Federal Order No. 1	Federal Order No. 2	Federal Order No. 4	Total
	-----number of producers on farms-----					-----number of producers on farms-----			
MARYLAND:					PENNSYLVANIA:				
Cecil	4		87	91	Adams		9	145	154
NEW JERSEY:					Bedford		1	204	205
Burlington	9		44	53	Berks	124	170	329	329
Cumberland	1		13	14	Blair	17	119	187	187
Hunterdon	70		19	89	Bucks	6	24	125	125
Mercer	2		7	9	Centre	221	359	420	420
Monmouth	3		6	9	Chester	61	6	86	86
Salem	10		66	76	Clinton	80	15	46	46
Sussex	122		4	126	Columbia	31	231	383	383
Warren	147		14	161	Cumberland	152	54	131	131
NEW YORK:					Dauphin	77	430	564	564
Albany	12	49		61	Franklin	134	158	180	180
Clinton	245	96		341	Huntingdon	22	71	198	198
Columbia	205	2		207	Juniata	127	1,122	1,941	1,941
Delaware	121	480		601	Lancaster	819	179	311	311
Dutchess	151	6		157	Lebanon	132	5	20	20
Franklin	43	345		388	Lehigh	137	25	162	162
Fulton	10	79		89	Lycoming	105	150	255	255
Greene	25	46		71	Mifflin	2	101	103	103
Montgomery	33	385		418	Montgomery	43	8	51	51
Orange	85	186		271	Montour	49	57	106	106
Otsego	3	628		631	Northampton	68	17	85	85
Rensselaer	176	18		194	Northumberland	89	80	169	169
Saratoga	86	53		139	Perry	16	10	26	26
Schenectady	5	18		23	Schuylkill	125	12	137	137
Schoharie	24	267		291	Snyder	111	24	135	135
Ulster	19	34		53	Union	28	241	269	269
Warren	1	1		2	York				
Washington	476	28		504					
					Total	1,720	5,888	4,492	12,092

Source: The Market Administrator's Bulletin, New York-New Jersey Milk Marketing Area, Quarterly Statistical Issue (A), Volume 39, Number 4, 1979, pp. 14-16. Monthly Statistical Report, New England Marketing Area, March 1979, p. 6. Annual Statistical Report, Middle Atlantic Marketing Area, 1978.

# APPENDIX A

## TABLE A-2 NUMBER OF PRODUCERS IN NORTHEAST COUNTIES SHIPPING MILK TO MORE THAN ONE FEDERAL ORDER, DECEMBER 1980

State & County	Federal Order No. 1	Federal Order No. 2	Federal Order No. 4	Total	State & County	Federal Order No. 1	Federal Order No. 2	Federal Order No. 4	Total
-----number of producers on farms-----									
MARYLAND:					PENNSYLVANIA:				
Cecil	2		80	82	Adams		6	146	152
NEW JERSEY:					Bedford		1	201	202
Burlington	7		40	47	Berks	134		213	347
Cumberland	1		12	13	Blair	17		165	182
Hunterdon	76		17	93	Bradford	702		16	718
Mercer	2		5	7	Bucks	7		111	118
Monmouth	3		6	9	Centre	191		41	232
Salem	8		63	71	Chester	66		358	424
Sussex	120		5	125	Clinton	57		18	75
Warren	139		22	161	Columbia	48		21	69
					Cumberland	159		232	391
NEW YORK:					Dauphin	83		55	138
Albany	15	42		57	Franklin	132		419	551
Chenango	502		4	506	Huntingdon	18		164	182
Clinton	123			322	Juniata	120		74	194
Columbia	185			188	Lancaster	856		195	1,992
Cortland	320		26	346	Lebanon	141		14	336
Delaware	462		7	594	Lehigh	5		1	19
Dutchess	140	5		145	Luzerne	8		9	9
Franklin	31	361		392	Lycoming	138		23	161
Fulton	8	81		89	Mifflin	113		159	272
Greene	25	44		69	Montgomery	2		90	92
Montgomery	45	379		424	Montour	20		14	34
Orange	58	208		266	Northampton	40		60	100
Ortsego	9	616		636	Northumberland	67		19	86
Rensselaer	164	15	11	179	Perry	88		86	174
Saratoga	71	66		137	Schuylkill	13		21	34
Schenectady	5	18		23	Snyder	132		26	158
Schoharie	14	260		274	Union	85		30	115
Tioga	234	243	9	243	Wayne	346		5	351
Ulster	19	31		50	Wyoming	115		13	128
Warren	1	1		2	York	14		245	259
Washington	466	35		501					
					Total	1,580	8,088	4,678	14,346

Source: The Market Administrator's Bulletin, New York-New Jersey Milk Marketing Area, Quarterly Statistical Issue (A), Volume 41, Number 4, 1981, pp. 14-16. Monthly Statistical Report, New England Marketing Area, March 1981, p. 6. Annual Statistical Report, Middle Atlantic Marketing Area, 1980.