

The Economic Importance of the Iowa Dairy Industry

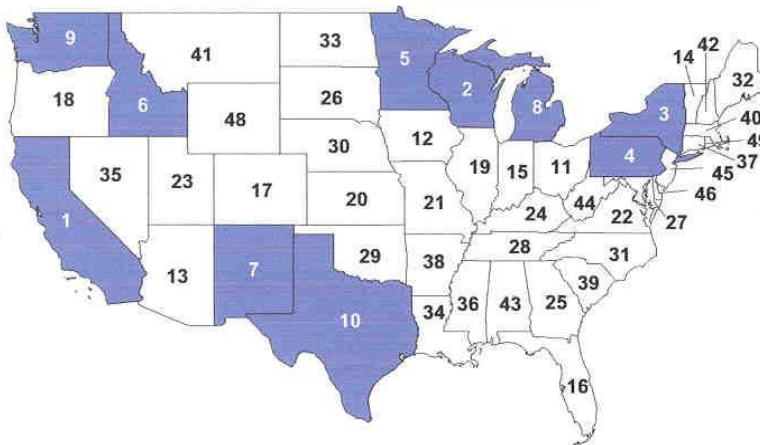
Like other sectors of the Iowa agricultural economy, the dairy industry is undergoing dramatic structural changes. Fewer dairy farmers are producing larger quantities of milk. Total value of processed dairy products continue to grow steadily and total jobs in the dairy processing industry remain fairly steady, although the composition of that processing has changed. Milk marketing orders and national dairy policy continue to be important factors affecting dairy production decisions in Iowa.

This report presents information on the composition and economic importance of the dairy industry to the Iowa economy. It also examines recent trends and issues affecting future prospects for growth and prosperity in the industry.

Iowa's Current Position -- Production and Trends in Production

Dairy production has historically been an important farm enterprise in Iowa. Iowa currently (2002) ranks 12th in U.S. production and has held that position for the past five years. (Figures 1 and 2). Although heaviest production occurs in the northeastern and northwestern portions of the state, there is some level of dairy production activity in 90 percent of Iowa counties. Iowa produces about 30 percent of the milk produced in the Central Order -- more than any of the six other states in the Central Market Order.

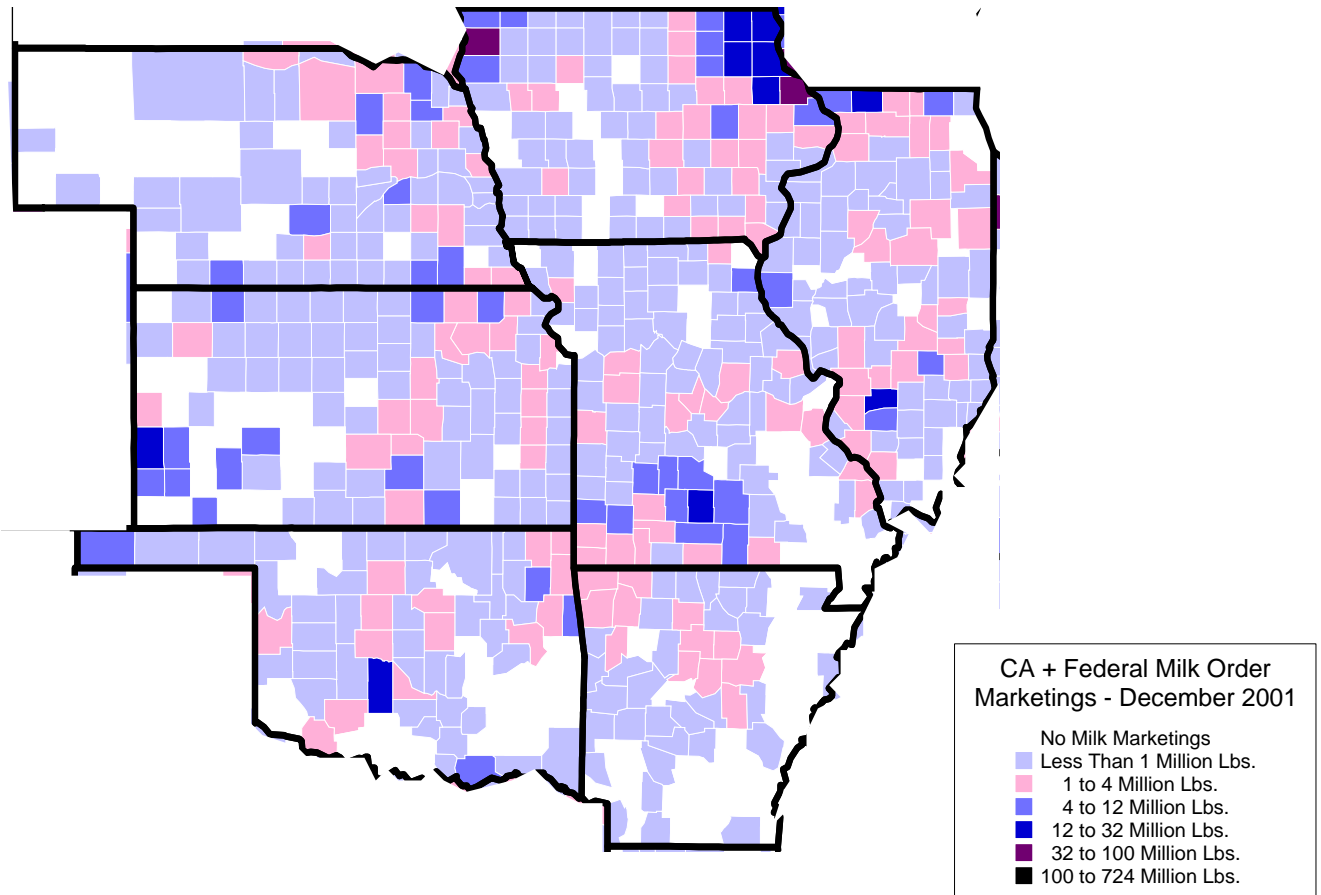
**Figure 1. 2002 Milk Production Ranking
Top Ten States Highlighted**



Source: USDA Federal Market Administration, Tulsa.

Prepared by Roger Ginder and Daniel Otto, Professors of Economics, Iowa State University, Ames, Iowa on June 25, 2003.

Figure 2. Central Federal Order Milk Marketings By County – December 2001

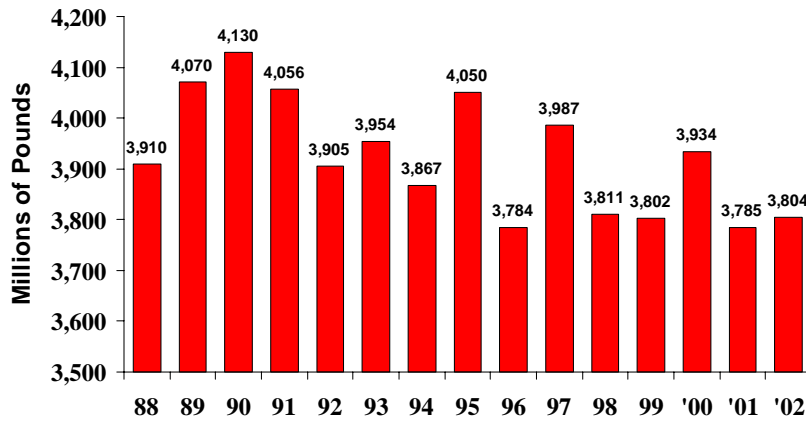


Source: USDA, Federal Market Administration, Tulsa.

Iowa has had remarkably stable milk production for the past decade. Annual production has remained in the 3.8 – 4.1 billion pound range. At the same time the number of producing dairy cows has been steadily declining. (See Figures 3 and 4). Steady increases in production per cow have permitted a smaller and smaller number of cow herds to produce a more or less constant quantity of milk.

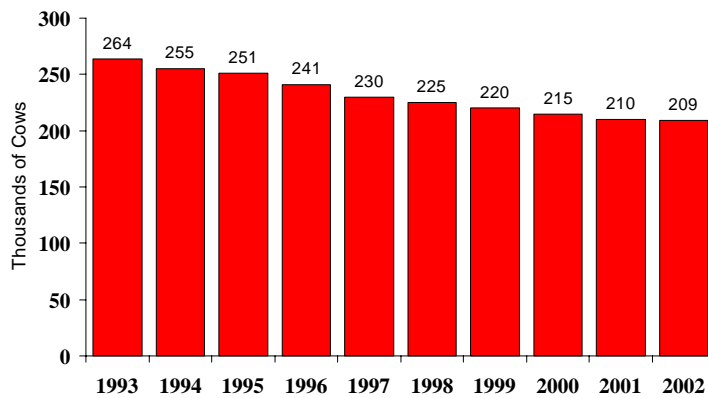
Iowa ranked 13th in the nation in average milk production per cow at more than 18,000 pounds per cow. This benchmarks quite favorably against virtually all of the surrounding states -- including important dairy states such as Minnesota and Wisconsin which ranks in the 20's. The steadily increasing production per cow has occurred as a result of changing technology and intensity of management in Iowa operations. (See Figure 5).

Figure 3. Total Milk Production in Iowa



Source: NASS, USDA, on-line database, 3/13/03

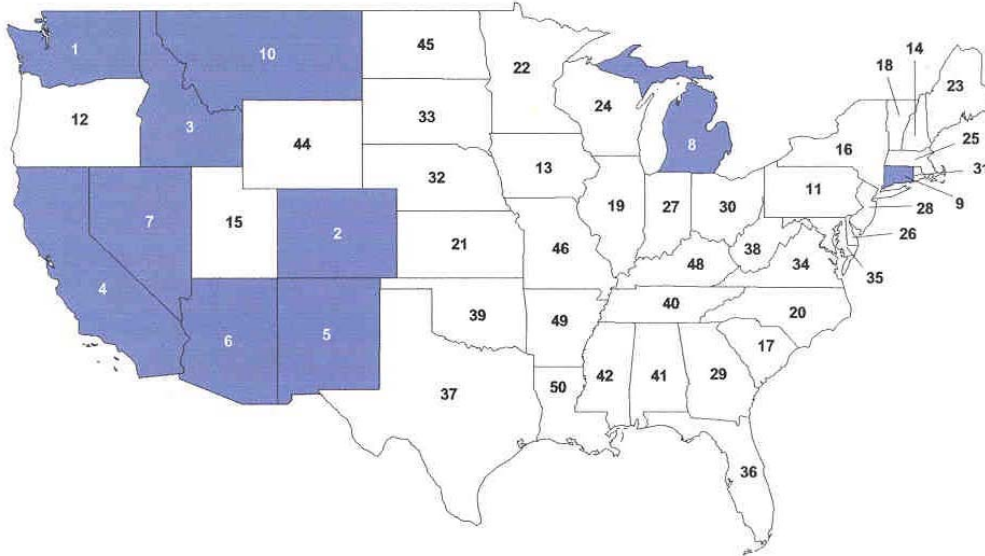
Figure 4. Number of Dairy Cows, Iowa



Source: NASS, USDA, on-line database, 3/13/03

Figure 5.

**2001 Milk Production Per Cow Ranking
Top Ten States Highlighted**

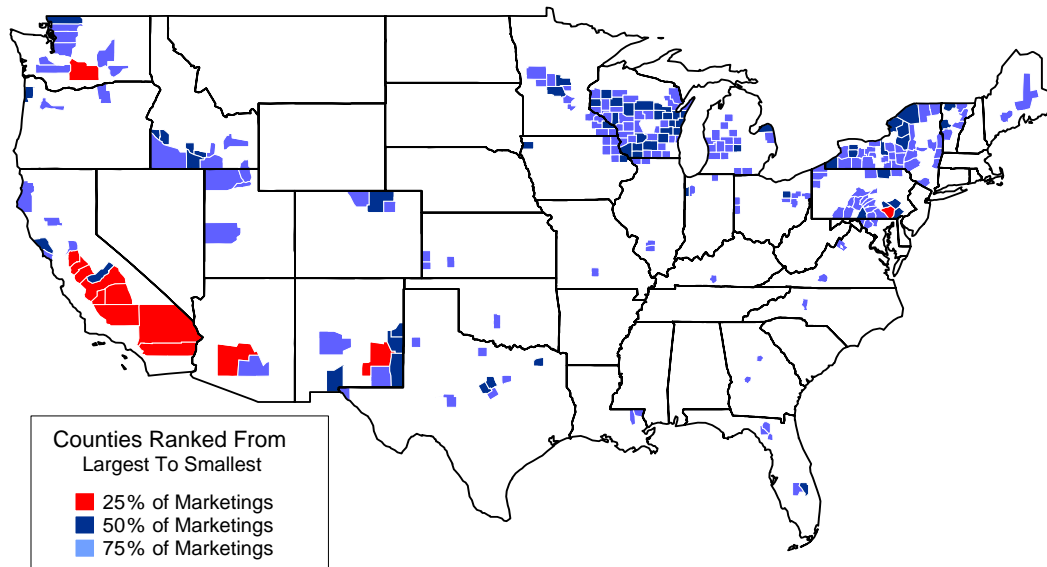


Source: USDA, Federal Milk Market Administrator, Tulsa, 2/2002

Nationally the most rapid dairy production growth has occurred in the western U.S. Larger scale specialized dairy farms with high production per cow have characterized western production. These operations differ markedly from the more traditional diversified dairy operations that have been more typical in the Midwestern and Eastern U.S. where operations tend to be smaller and sized to fit the use of family sourced labor.

Over the past 50 years U.S. dairy production has tended to become concentrated in fewer and fewer counties. Figure 6 shows the 250 counties that now produce 75 percent of the U.S. milk supply. It is also notable that fewer than 15 counties (shown in red) account for about 25 percent of all milk produced in the country and that only one of those counties (Lancaster County, PA) lies east of the Mississippi River.

Figure 6. The 250 U.S. Counties That Produce 75 Percent of The Milk



May 2002

Source: Federal Market Administration, Tulsa.

Like much of the U.S. dairy industry in the East and Midwest, Iowa's dairy industry is in transition. Traditional family farm herds with less than 100 cows have dominated the Iowa dairy production sector in the past. However, during the most recent decade the share of production originating on larger operations has grown rapidly. In 1999 farms with less than 100 cows produced about 60 percent of all Iowa milk with the remaining 40 percent produced on larger farms. By 2001 the fraction of Iowa milk produced on farms with less than 100 cows was roughly equal to the amount produced on larger farms.

The Economic Contribution of the Dairy Industry to the Iowa Economy

The Iowa Dairy Industry involves over \$550 million in sales of milk production and \$1.2 billion of processed dairy products making it one of the five largest commodity groups in the state. Including the secondary impacts of input purchasing and consumer spending by farmers and workers involved in the dairy industry brings the total economic effects to \$3.2 billion. Other indicators include \$732 million of earnings and 19,320 jobs.

The \$550 million of dairy marketings reported in 2001 represent one measure of the aggregate value of the dairy industry at the farm level. Because of close relationships with processing activities in the dairy industry, it is convenient to incorporate dairy processing activities as part of the direct or primary component of the Iowa Dairy Industry. In addition to these direct industry effects, the backward and forward linkages generate significant additional impacts throughout the Iowa economy. The backward linkages include purchased inputs, supplies and

services used by dairy producers. The forward linkages include further value-added activities occurring after the farmgate such as dairy processing and cheese and ice cream production.

The cost of production and input usage is calculated for the Iowa dairy numbers based on average costs of production in the ISU budgets. Based on statewide numbers on cows and milk production, totals of feed use, other direct inputs, annual depreciation on capital investments, labor requirements and returns to management and capital are generated. These aggregates are also depicted schematically in Figure 7.

The right hand side of the schematic in Figure 7 represents purchased cash inputs used by producers at the farm level. The prices and values in this section are intended to reflect long-run conditions and prices in the industry and are consistent with projections made by The Food and Agricultural Policy Institute (FAPRI). The estimated total value of direct inputs used in Iowa sum to \$242.4 million. Additional costs for depreciation of fixed assets and facilities total an estimated \$52.4 million. Labor and management expenses add an additional \$115.2 million of costs for a total of \$410 million of aggregate input costs used in dairy production in Iowa. The residual value between inputs and marketings can be described as returns to unpaid labor and management.

The largest single category of expenditure is feed costs. Annually, an estimated 20.1 million bushels of corn valued at \$44.2 million are used in the dairy industry. Other feeding costs include an estimated 2.9 million tons of hay and silage representing another \$135.1 million of value.

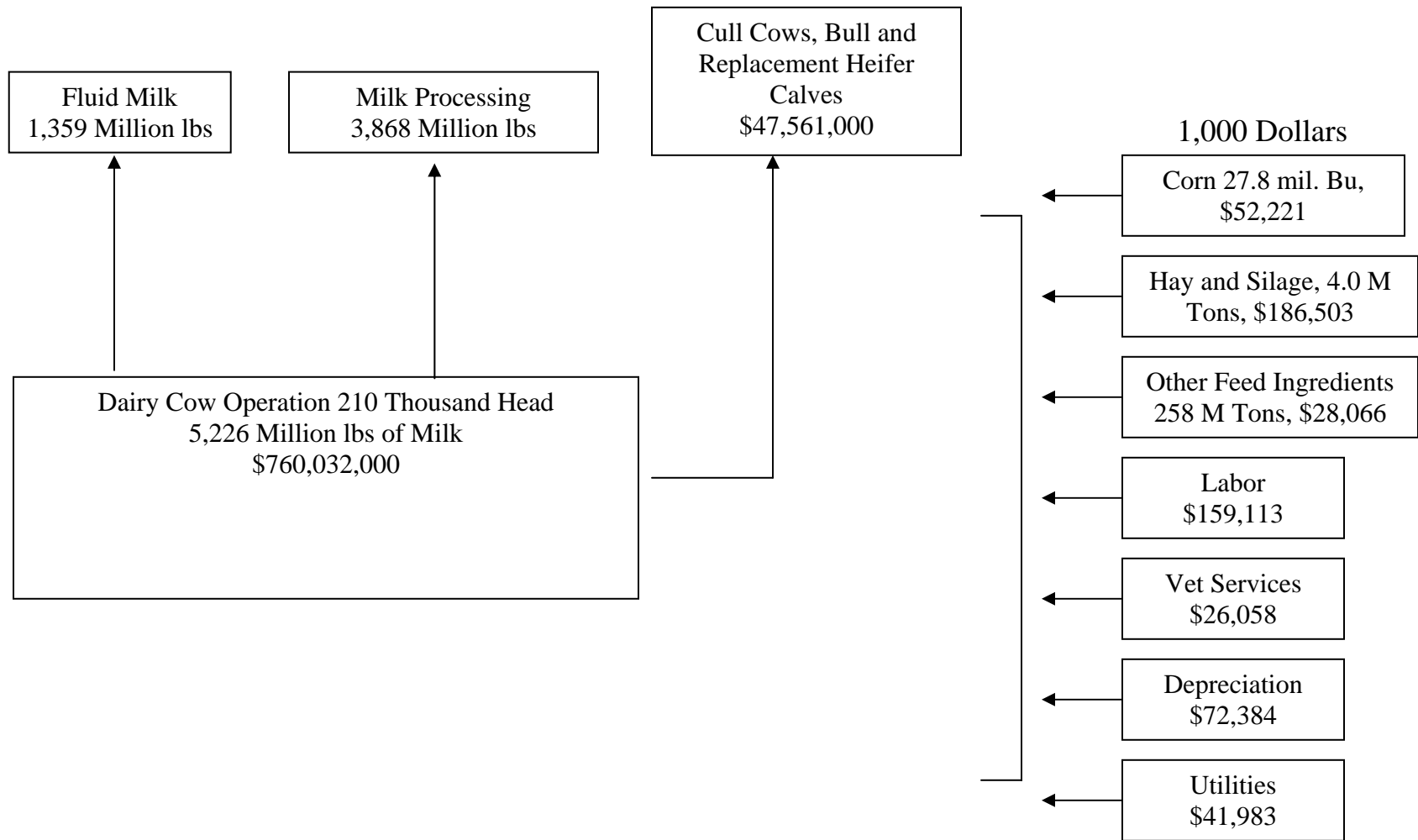
In addition to the backward linkage effects of inputs purchased by dairy producers, forward linkages can be traced to further processing activities in the form of cheese, butter, ice cream, dried milk and fluid milk. The upper portion of the schematic chart illustrates the flow of milk production into various forms of further processing.

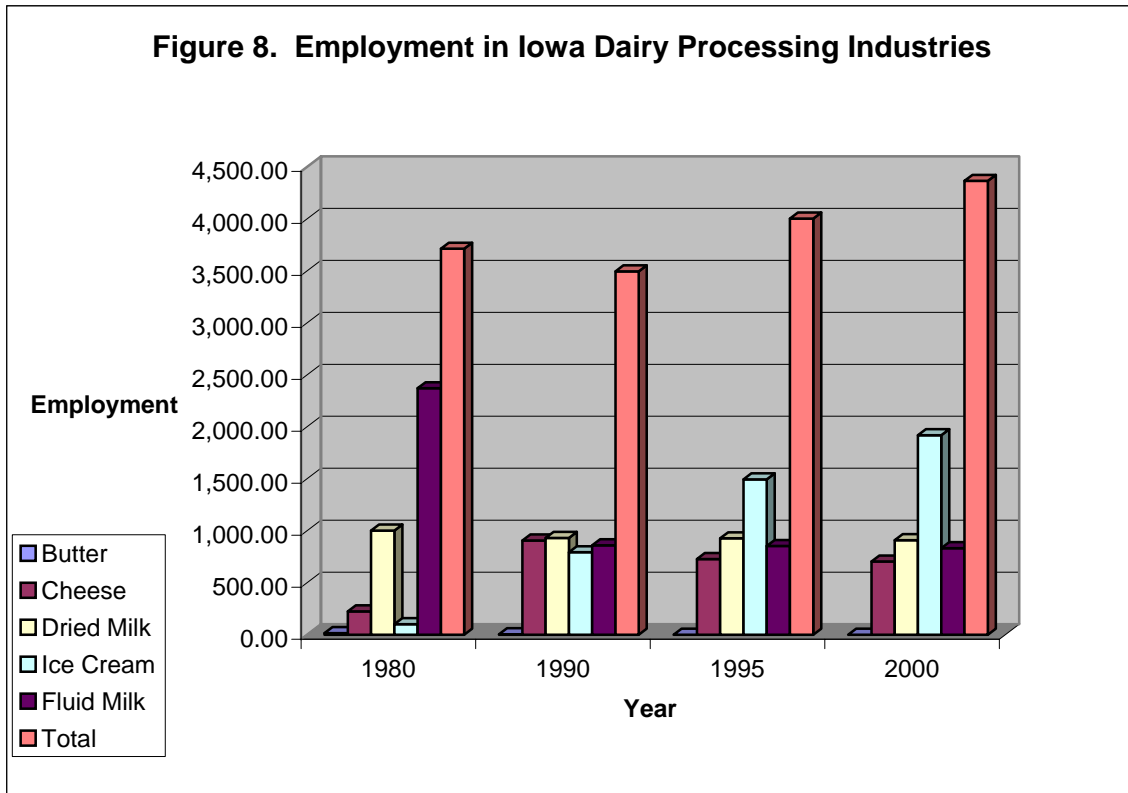
Data from the Iowa Workforce Development files can be used to track employment and earnings in these dairy processing sectors between 1980 and 2000. Total employment in dairy processing has stayed relatively constant over the past 20 years, although the composition of that employment has changed. Currently, 4,366 workers are employed in dairy processing activities with the majority of these workers in the ice cream production. Fluid milk processing, which used to be the largest category is currently the third largest employer of dairy processing workers. (Table 1 and Figure 8).

Table 1. Employment in Iowa's Dairy Processing Industries

	<u>1980</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Butter	14.92	4.50	0.00	0.00
Cheese	224.25	906.50	727.92	703.92
Dried Milk	1,002.00	930.75	926.83	909.58
Ice Cream	101.08	793.42	1,494.67	1,919.50
Fluid Milk	2,370.75	860.42	853.33	832.75
Total	3,713.00	3,495.59	4,002.75	4,365.75

Figure 7. Iowa Milk Production Flowchart, 2001

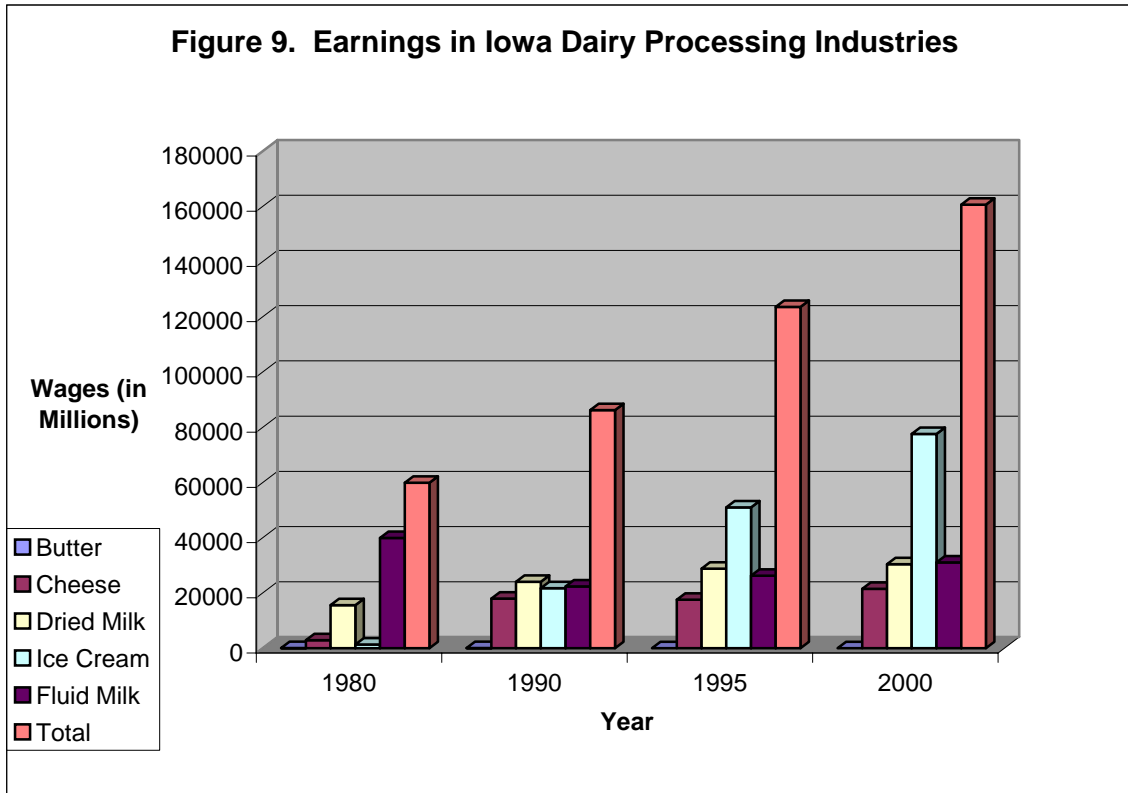




Total earnings in dairy processing, presented in Table 2 and Figure 9 reflect the same pattern as employment. Earnings per worker measured in current dollars have grown steadily, although earnings are relatively constant in current dollars. The overall earnings per worker average in 2000 was \$36,789.

Table 2. Earnings in Iowa Dairy Processing Industries

	<u>1980</u> (\$ Million)	<u>1990</u> (\$ Million)	<u>1995</u> (\$ Million)	<u>2000</u> (\$ Million)
Butter	.077	.076	0	0
Cheese	2.94	17.96	17.57	21.52
Dried Milk	15.59	24.07	28.79	30.41
Ice Cream	1.35	21.76	50.99	77.58
Fluid Milk	39.95	22.38	26.24	31.10
Total	59.90	86.25	123.59	160.61



Impacts to the General Economy

The estimates of income employment and sales by producers and processors in the Iowa dairy industry represent the direct effects of the industry. Production input purchases represent the indirect effects. In addition to the direct economic effects and input purchases, income earned in these agriculturally-related components of the dairy industry is spent in the rest of the economy. These expenditures stimulate a wide range of sectors, including consumer-related businesses in urban areas. To identify and estimate these multiplier effects, an Input-Output (I-O) model is configured for the state of Iowa and used in this portion of the study. An I-O model is essentially a generalized accounting system of a regional economy that tracks the purchases and sales of commodities between industries, businesses, and final consumers. Successive rounds of transactions stemming from the initial economic stimulus (such as a new plant or community business) are summed to provide an estimate of direct, indirect, induced (or consumer-related) and total effects of the event or scenario.

The I-O model used is based on the IMPLAN Input-Output modeling system, originally developed by the U.S. Forest system and currently maintained by the Minnesota IMPLAN Group. This modeling system is widely used by regional scientists to estimate economic impacts.

The basic scenario in this analysis looks at the overall importance and contribution of the dairy industry to the Iowa economy based on the 2001 situation and current levels of production in the Iowa dairy industry. This perspective is similar to asking what would be the impact of removing the industry from the state. As a result, the full set of linkages of dairy production to in-state

feed grain production and processing as well as the consumer effects are included as part of the total impacts.

The results of the I-O analysis are presented in Table 3 with estimates of total output, personal income, value-added, and employment presented at a 10-sector level of detail. The table for this baseline scenario presents estimates of the farm level employment and income effects separate from the rest of agriculture while the dairy slaughtering and processing effects are included in the manufacturing sector. The key indicators of economic activity reported include total industry output, total income, value-added, and employment.

Total industry output measures total dollars of goods and services produced by an industry, including government and non-government activity. The estimated \$550 million of gross output from dairy production activity is linked to approximately \$1.45 billion sales in the state's dairy processing sectors. The total sales from these direct components of the dairy production and processing sectors support additional input purchases, spending on transportation and other services, as well as the consumer-related purchases worth \$1.2 billion of direct and indirect sales throughout the Iowa economy.

This output, or gross sales number should be used with caution because the value of the dairy is counted twice -- at the farm level and as part of the total value of dairy products when it is sold from the processor. While much of the impacts are concentrated in the agricultural and input supply sectors, economic linkages beyond the farm gate capture additional activities such as transportation, handling, processing and the personal consumer spending effects. As a result, the effects of the dairy industry are distributed throughout the economy, benefiting rural and urban areas including the services and trade sectors.

Total personal income is a composite of wage and salary income and return to proprietors. This more comprehensive measure of income is chosen because most farm income is reported as proprietor income. The estimate of \$230 million of direct income to dairy producers is linked to an additional \$160 million of earnings to workers in dairy processing and to \$342.4 of additional income throughout the Iowa economy for a total impact of \$732.5 million of personal income. Again the service and retailing sectors receive strong stimulus from the initial effect of income earned in the dairy sector.

Total value added measures the total gain in economic activity to the economy resulting from production of goods or services. Wages, salaries, taxes, and profits are included in the value-added measure. The value-added measure is a good indicator of net economic activity as only the net incremental value is summed at each transaction to avoid double counting. The estimated \$253 million of value added for dairy production and \$335.1 million in dairy processing is linked to \$535.9 million of additional indirect and induced value-added activity in the state's economy for a total value added of \$1.124 billion. The distribution of these values among different sectors is presented in Table 3.

Employment is based on a per job unit consistent with the definitions used by the U.S. Commerce Department. The employment levels are likely to be nearly full-time equivalents for the manufacturing and production-oriented jobs. Retail and service sector positions tend to involve many part-time positions. The 4,208 farms in 1997 and 2,400 direct jobs in dairy producing activities involve farm workers as well as farm proprietors and can be interpreted as

full-time equivalent positions. These 2,400 direct jobs at the farm level along with the 4,365 at the processing level generate a chain of economic activity that supports an additional 12,555 jobs throughout the rest of the economy. The distribution of impacts is similar to the pattern for the other indicators in that effects are present in all sectors. The service sector provided the largest number of secondary jobs followed by Retailing. The higher number of jobs in services combined with the lower levels of income suggests that many of these jobs are less than full time.

The impacts to the manufacturing sector in this inclusive scenario include an estimated 4,365 employees (see Table 1) in the Iowa dairy processing sectors. An estimated \$160 million of wage and salary income is paid to workers in these sectors. Since dairy processing facilities tend to be located near the source of raw materials, this stage of the dairy industry has the additional benefit of providing well-paying jobs in rural labor markets.

Table 3. Economic Importance of the Iowa Dairy Industry, 2002

	<u>Total Sales</u> (\$)	<u>Labor Income</u> (\$)	<u>Value-Added</u> (\$)	<u>Jobs</u>
Agriculture	655,318,464	250,526,064	284,847,968	3,021.8
Mining	374,193	103,834	250,574	3.1
Construction	25,326,420	14,163,574	14,925,698	422.4
Manufacturing	1,859,907,072	212,281,408	381,583,584	5,287.8
Tran. Utilities	99,967,096	26,457,374	58,152,732	659.9
Trade	250,252,304	95,875,416	167,904,176	4,502.1
Fin.Ins.Real Estate	120,916,816	25,560,858	88,392,600	881.6
Services	192,968,592	100,531,520	119,451,144	4,296.5
Government	17,952,792	6,960,174	8,754,905	245.4
Total	3,222,983,749	732,460,222	1,124,263,381	19,320.6

Source: Iowa IMPLAN Model

Current Issues Confronting the Dairy Industry

The Iowa dairy industry (like the dairy industry elsewhere) is facing numerous policy issues. Some of the current issues are likely to have differential effects in the various production regions of the U.S. Three important issues are: (1) environmental permitting for production sites, (2) Federal Milk Market Order pooling/Class I utilization issues, and (3) Federal Farm Program issues. How these issues are addressed will affect the future growth and development of Iowa's dairy industry.

Production Site Environmental Permitting Issues

The permitting issue for large-scale livestock production facilities cuts across all sectors of the Iowa livestock production industry -- including the dairy sector. Environmental permitting at both the federal and state level must be obtained for larger operations. Federal regulations governing larger Concentrated Animal Feeding Operations (CAFO) will generally affect dairy production operations with more than 700 cows. The CAFO legislation is aimed primarily at the nutrient balance and the ability to apply the animal waste products without build up over time.

State regulations will also affect only confinement operations that are larger than 700 cows, but will deal with issues such as runoff, odor, and other factors that create potential conflicts in site selection. The state permitting process has been streamlined and in some ways made more flexible under recent legislation. The implementation of a point system for evaluating permit applications submitted by producers allows proposed projects to be more closely tailored to the specific circumstances and conditions existing at the site.

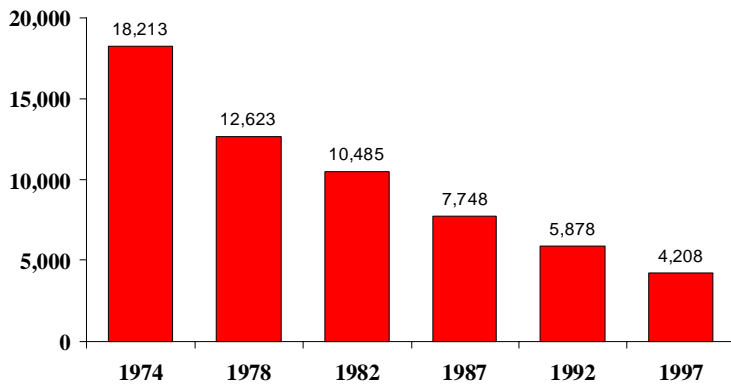
The ability to permit new sites and conduct expansions on existing sites cannot be underestimated as a force that will impact the future growth and success of the dairy industry in Iowa. The number of Iowa dairy farms has been declining for decades. The average size of an Iowa operation has had to increase to maintain total production. (See Figures 10 and 11). The existing producer demographics imply that these trends will accelerate going forward.

Many current producers will retire or exit production over the next decade and the number of new producers entering production has been consistently lower than the number of producers exiting. As this change accelerates, it will be necessary for at least some of the new entrants to produce on a larger scale and/or some of the existing producers to conduct significant expansions. Otherwise total Iowa production can be expected to decline. To the degree that permitting becomes a significant barrier to larger operations or expansions, current production levels will be difficult to maintain.

The CAFO regulations favor regions where there is less chance that there will be nutrient buildup in the soils when animal waste is applied over an extended time period. Such buildup is much less likely to occur in regions where significant quantities of grain is produced and exported for use outside the production area. Removal of grain and forage for shipment and use elsewhere requires that soil nutrients be replenished. This is currently the case for much of the grain produced in Iowa. Iowa, unlike production areas that import feedstuffs, will be able to apply animal waste to replenish nutrients in the harvested grains that is exported or shipped to domestic markets outside the state.

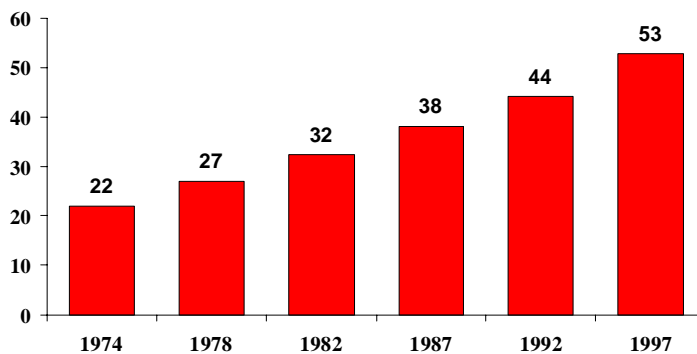
The increased flexibility in the state environmental permitting process provided by the point system should also make selecting and permitting sites more straightforward. This approach should provide applicants with the ability to better adapt, but it still requires that permits be re-evaluated if there are significant expansions to existing facilities.

Figure 10. Number of Iowa Dairy Farms



Source: *Census of Agriculture*, Bureau of the Census, U.S. Dept. of Commerce

Figure 11. Average Number of Cows Per Farm in Iowa



Source: *Census of Agriculture*, Bureau of the Census, U.S. Dept. of Commerce

Federal Milk Marketing Order Issues

Milk marketing orders are designed to promote orderly marketing of raw milk and to ensure that there are sufficient supplies of Grade A milk to meet the needs of fluid milk consumers. Farm producers are also expected to benefit from a more orderly market. Federal Milk Marketing Orders (FMMO's) are complex regulations that govern how Grade A milk is priced to producers. Federal orders regulate the plants that supply fluid milk within a specified marketing area.

Participating plants operating within the FMMO territory must pay minimum prices for the milk they process and sell. The minimum prices are based on the type dairy products the milk is used to produce. For example fluid milk used for beverage products is defined as Class I and receives a higher price than milk used to manufacture ice cream (Class II), hard cheeses (Class III), or Butter (Class IV). Producers who sell Grade A milk to any of the plants regulated by the FMMO receive a weighted average price sometimes called a "pool" price or "blend" price. In some cases over order premiums (OOP's) may be negotiated by cooperatives who bargain with processors.

Because the "blend" price in any given FMMO depends on: (1) how much of the milk is used in the various classes, (2) the Class I differential in the order different "blend" prices are paid in different orders. Those FMMO that include large population centers typically have higher levels of Class I utilization. Generally producers who pool in orders where a higher fraction of the milk is processed into Class I and Class II products receive a higher "blend" price. Thus there is a positive incentive to pool in orders that have higher Class I utilization.

Iowa is part of the Central FMMO along with Arkansas, Illinois, Kansas, Missouri, and Nebraska, and Oklahoma as illustrated by the map at the top of Figure 12 showing December 2001 marketings. About 38 percent of the 1.03 billion pounds milk produced in these states is used to produce Class I or beverage milk products. In contrast Minnesota and Wisconsin (both states that produce large quantities of milk) are part of the Upper Midwest FMMO. (See Figure 13). In the Upper Midwest FMMO only about 15 percent of the 2.413 billion pounds of milk produced in that geographic region is used for Class I beverage products. This implies that milk pooled in the Central order will receive a higher price because a higher percentage of it is used for Class I products.

The maps shown at the bottom of Figures 12 and 13 show the actual quantity of milk pooled marketed in both FMMO regions in December 2001. Note that while only 1.03 billion pounds of milk was produced in the Central FMMO there was 1.5 billion pounds pooled on the order. More than 0.5 billion pounds of milk from other geographic regions had been pooled on the order. The added milk reduced the percentage of the pool used for Class I beverage products from 39 percent to approximately 27 percent and thereby reduced the "blend" price paid to those pooled on the order. At the same time in the Upper Midwest FMMO about 2.4 billion pounds was produced but only 1.8 billion pounds was pooled on the order. This reduced the amount of milk pooled and increased the percentage of the pool used for Class I beverage products to 19 percent thereby increasing the "blend" price received by producers in the UMW pool.

Figure 12.

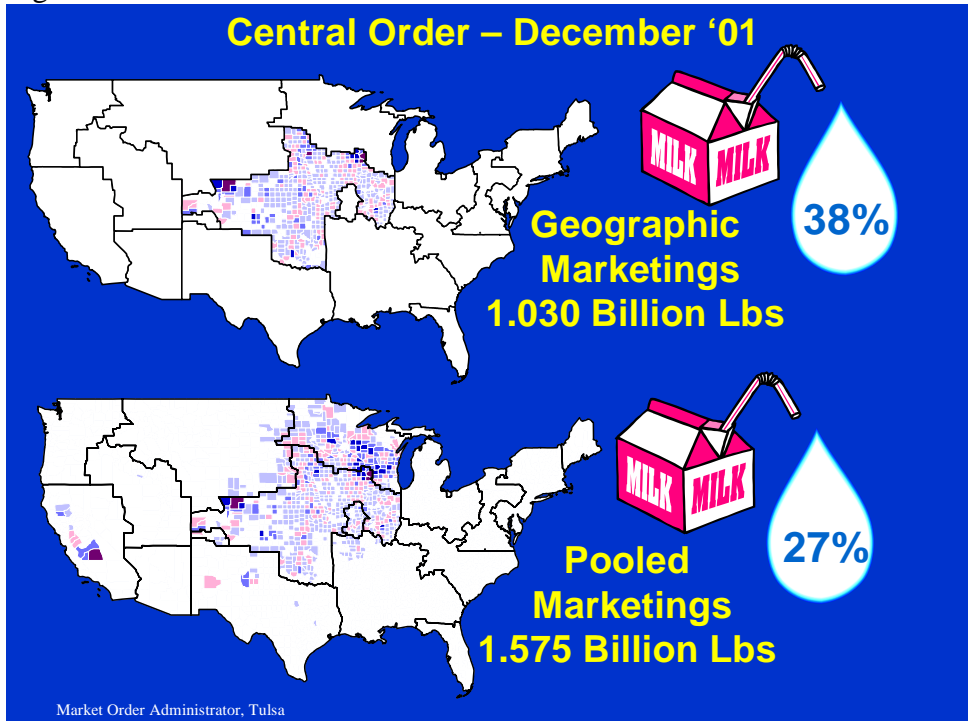
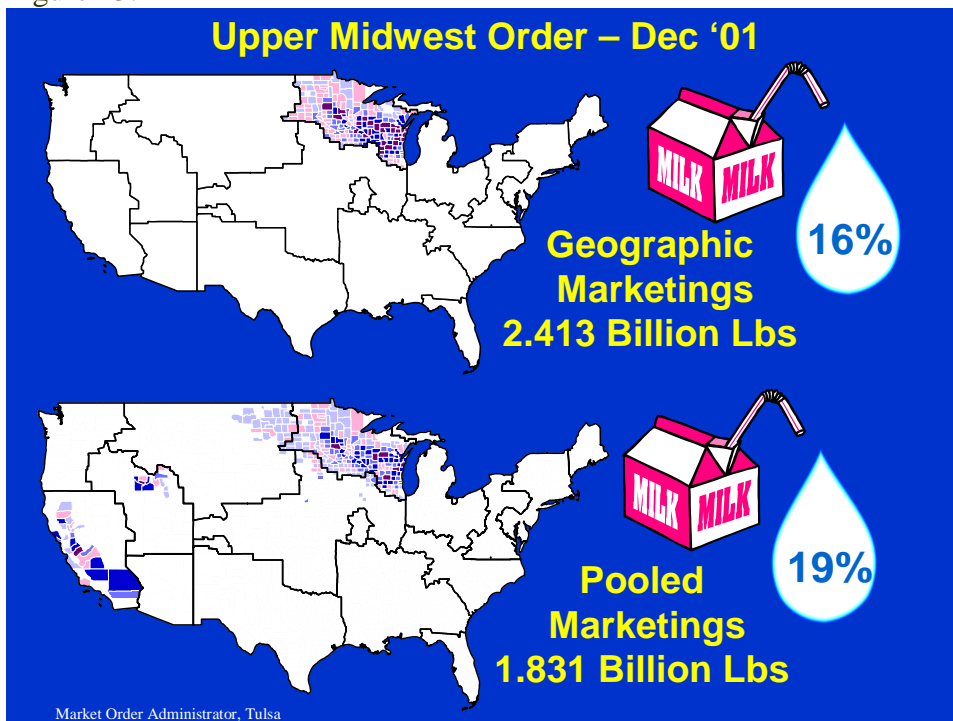


Figure 13.



This net effect of this pooling pattern is to reduce the “blend” prices received in the Central FMMO and increase “blend” price received in the Upper Midwest FMMO. Pooling milk produced in one geographic FMMO region in another FMMO region is permitted and contributes to orderly marketing so long as the sellers who pool from outside contribute to the goal of providing an adequate supply of Grade A milk for Class I uses. However, the FMMO where outside suppliers are pooling can establish performance standards such as minimum amounts of milk that must be physically delivered or in some cases seasonal delivery requirements. The performance standards for the Central FMMO required only that a physical delivery be made once in order to qualify for participating in the pool. This was a very low standard.

Prior lax performance standards in the Central FMMO have resulted in milk produced as far away as California being pooled on the Central order. California does not have a FMMO, but is instead regulated under a state marketing order. Some California milk was being pooled both on the California state order and on the Central FMMO -- a practice that has been questioned as “double dipping”. The issue of stricter performance standards has been the subject of Central FMMO hearings during 2002. A USDA ruling has stopped the practice of pooling the same milk on more than one order.

To the degree that less outside milk is pooled on the Central FMMO, “blend” prices can be expected to rise for producers located within the actual geographic boundaries of the order. Higher “blend” prices would provide greater profitability and incentive for expansion of production in Iowa and other states in the order. It is reasonable to expect that the tightening of performance standards would benefit producers and communities in Iowa and other Central order states. It should be noted that subsequent to implementing the new performance standards a lawsuit has been filed to overturn these new standards.

New standards adopted by the Central Federal Milk Market Order in March of 2003 increase the requirements that handlers from outside the order must meet in order to pool on the order and share in the Central Order Class I differentials. While this will not (and should not) prevent handlers who substantially contribute to the Central Order fluid market, it will reduce the drag on Class I differentials in the Central Order. It is currently estimated that the Class I utilization in the Central Order will rise from current levels of 26-27 percent to levels in the 32-33 percent range.

This change can be expected to increase Central Order producer “blend” prices somewhat. Certainly other factors such as the level of milk components and the relative prices of components are still important in determining the actual mailbox prices received by individual producers. But all other things equal, the higher Class I differentials should improve the prices Central Order producers receive and make production in the Central Order states more attractive. Such small differences become even more critical in times of very low prices and cash flow.

Federal Farm Policy Issues

Federal Farm Policy toward the dairy industry has historically used a variety of programs including: price supports, herd “buy-out” provisions, assessments on producers who increase production and product promotion as tools to maintain prices and create a balance between supply and demand. The current farm bill uses price supports and deficiency payments (a

mechanism not previously used for dairy) as its primary instruments. The deficiency payment approach pays producers the difference between market price and a target price when prices fall below the target price level. The current farm bill also has provisions for more traditional price support activity by way of manufactured dairy product purchases.

The deficiency payment is designed to give producers 45 percent of the difference between the Class I mover and \$13.69. (The Class I mover is defined as the higher of either the Class III (cheese) price or the Class IV (butter) price for milk.) Historically the Class I mover has exceeded the \$13.69/hundredweight (cwt.) target price for only brief periods during the past 20 years so it is likely that there will be payments in most months. (See Figure 14). The volume of milk eligible to receive payments is limited to the output that might be expected from operations with 125-175 cows -- depending on the average production per cow. Thus smaller scale producers (about 85 percent of Iowa farm would be included in that category) will receive payments on all of the milk marketed and larger scale producers will receive payments only up to the volume eligibility limit.

The impact of this program on the future growth of the Iowa dairy industry is unclear at this time. Many of the producers in Iowa produce less than the volume eligibility limit and would therefore be able to receive the deficiency payment on all of their production when Class III/IV prices fall below the \$13.69. This would provide a relative price advantage (everything else equal) compared to larger scale producers who produce well beyond the volume eligibility limits. Once the volume eligibility threshold has been reached the effective average deficiency payment per cwt. of milk produced declines steadily as the number of cwt. produced increases. Analysis by Ed Jesse of the University of Wisconsin Madison Department of Agricultural Economics shown in Figure 15 illustrates the declining payment per cwt. as volume marketed increases.

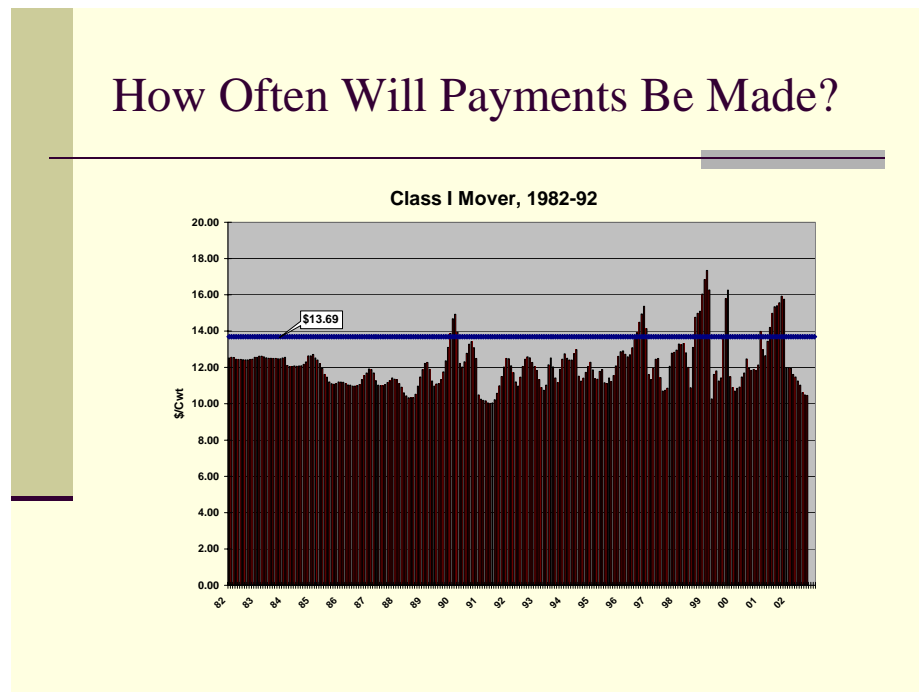


Figure 14. Frequency Class I mover exceeded the \$13.69 target price in the 20 year period 1982-02.
Source: Ed Jesse, University of Wisconsin, Madison.

Monthly Payment Rates for FY2002

Month	Class I Mover	Payment Rate	Herd Size	Total Payment	Payment per Cwt.
Dec '01	11.98	0.7695			
Jan '02	11.96	0.7785	50	9,069	1.08
Feb	11.95	0.7830	75	13,603	1.08
Mar	11.62	0.9315	100	18,138	1.08
Apr	11.47	0.9990	200	22,782	0.68
May	11.26	1.0935	500	18,639	0.22
Jun	11.03	1.1970	1000	23,983	0.14
Jul	10.62	1.3815			
Aug	10.48	1.4445			
Sep	10.46	1.4535			

10-month average = \$1.08 per Cwt.

Figure 15. Monthly deficiency payments for selected herd sizes with average payment per cwt. marketed
Source: Ed Jesse, University of Wisconsin, Madison.

The number of producers in Iowa and surrounding states with annual production below the volume eligibility threshold is larger than the number in some other regions -- especially those in the West. Thus many believe that the program would favor Iowa over at least some competing areas. However at least some of the recent production capacity built in Iowa during the past several years exceed the production eligibility level. These operations would receive payments but because the produce beyond the threshold they would receive payments at a lower average rate per cwt.

In July 2003, the National Milk Producers Federation (NMPF) initiated a program to reduce supply and increase price. One part of the program is a "buy-out" offer for entire dairy herds. The goal would be to reduce the total production and bolster the relatively low milk prices experienced the past 18 months by encouraging some producers to exit production. The program would be similar to the Federal Buyout program used in the mid 1980's but with some major exceptions. In this case it would be financed by a check-off on milk to be financed mostly by participating dairy cooperatives rather than the government and there are no limits on producers who wish to reenter production. While this is not a federal program, it could be expected to have the effect of reducing the number of producers and the number of herds producing milk in much the same way the federal program of the mid-1980's did. Another provision of the NMPF program would offer incentives to reduce production below last year's levels.

The impact of the proposed NMPF program would have on Iowa is not certain, but at least some analysts believe that the buyout would be more appealing to the smaller scale producers in the Midwest and Eastern states who are approaching retirement age than it would be to the larger scale producers in the Western states. The program as currently discussed proposes to use

regional limits to prevent the entire reduction coming from a single or small group of regions. The permitted level of participation for a region would be limited to the lower of the amount of production increase since 2000 or one-half of 1 percent (0.5 percent). In the case of Iowa where the production has been stable 0.5 percent would be the limit. A relatively small erosion of volume in Iowa and the surrounding states would tend to weaken the processing sector and the benefits it produces for remaining producers and rural communities. Currently milk supply is tight particularly in northeast Iowa where demand from processors in Wisconsin pulls milk over the state line. Even a modest reduction on supply could reduce processing capacity. To maintain existing processing capacity, Iowa and Upper Midwest supply will need to increase rather than decrease.

Summary and Conclusions

The Iowa Dairy Industry is one of the five largest commodity groups in the state involving over \$550 million in sales of milk production and \$1.2 billion of processed dairy products. Including the secondary impacts of input purchasing and consumer spending by farmers and workers involved in the dairy industry brings the total economic effects to \$3.2 billion. Other economic indicators include \$732 million of earnings and 19,320 jobs. Like other sectors of the Iowa agricultural economy, the dairy industry is undergoing dramatic structural changes. Productivity trends are resulting in fewer dairy farmers producing larger quantities of milk. Total value of processed dairy products continues to grow steadily and total jobs in the dairy processing industry remain fairly steady, although the composition of that processing has shifted from butter and fluid milk and into more ice cream production.

Several important policy issues will impact the future growth and development of the Iowa Dairy Industry. As a result of the significant quantities of grain that are exported from the state to supply domestic feeding and international markets, Iowa is expected to have the capacity to effectively utilize the animal waste generated by an expanded dairy production base. Concentrated Animal Feeding Operations (CAFO) regulations as they are presently configured would allow added manure application to replace the plant nutrients removed in the grain exported to other states or countries.

New pooling requirements will make it more difficult to pool milk on the Central FMMO without actually diverting milk to Class I uses. This combined with a rule prohibiting pooling on both a state order and a federal order is expected to raise Class I utilization percentage in the Central FMMO. These changes in the FMMO pooling requirements have not been implemented long enough to document their impact, but it is estimated that they will increase producer prices by 10-15 cents per cwt.

Current federal farm policy appears to favor states where average herd size is smaller. The average payment per cwt. under the deficiency payment program would be much higher for herds with fewer than 200 cows. This would tend to benefit many of the smaller existing herds and smaller scale start-ups or small-scale expansions. While this is favorable for many current producers it may be of much less benefit for some of the larger operations that are attempting to expand, operations that have already expanded, and large-scale start-ups. The potential impacts of non-government voluntary herd buy-out are uncertain at this time. There are provisions for regional caps on the buy-out to gear the production growth since 2000 to the participation rates in different regions. Current milk supply is tight thus even relatively modest reductions in production in Iowa under the proposed plan, could disadvantage Iowa in the longer run.

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