Policy Analysis

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Executive Summary

Current U.S. dairy policy has evolved from legislation passed during the 1920s and 1930s. In 1922, Congress passed the immensely influential Capper-Volstead Act, with the apparent legislative intent of allowing farmers to form associations that gave them the advantages of corporate structure free from the threat of prosecution under the Sherman Antitrust Act.[1] Congress had perceived an imbalance of market power and wished to permit farmers to organize into cooperatives, so as to equalize their economic power vis-a-vis the corporations with which they did business. Rep. Andrew Volstead described the farmers' predicament:

> Business men can combine by putting their money into corporations, but it is impractical for farmers to combine their farms into similar corporate forms The object of this bill is to modify the laws under which business organizations are now formed, so that farmers may take advantage of the form of organization that is used by business concerns.[2]

Congress did not anticipate, however, that the cooperatives could develop such a degree of market power that competition and consumer interest would be adversely affected. It is clear from congressional testimony that farm interests hoped to increase the percentage of the farm-commodity dollar going into the farmers' pockets, but Congress did not expect that this increase would be accomplished by raising retail prices or by the use of market power. Rather, it was to be accomplished through the efficiencies of vertical integration into marketing and distribution.[3]

By 1928, farmers' organizations had begun developing means to control the total production of milk in their markets. These efforts were largely unsuccessful because the cooperatives were unable to induce all the farmers in a region to join them; therefore, when the cooperative succeeded in raising the price of milk, the production of nonmembers would increase, dragging the price back down. This caused the cooperatives to turn to the federal government for help. Between 1929 and 1932, programs were introduced that aimed at assisting the farm sector in general and dairy producers in particular through various schemes of export promotion, import restriction, and production allotments. But by 1932 no significant action had been taken, and the continuous decline in dairy and other farm prices forced a shift in the legislative goals of farm groups. The result was the Agricultural Adjustment Act of 1933, which attempted, through processing taxes, allotment plans, and licenses and marketing agreements, to put agriculture back on a sound basis.[4]

The processing tax permitted the assessment of taxes on processors of agricultural products. The tax was regulated by the secretary of agriculture in amounts sufficient to pay for untilled land leased from farmers. The objective was to reduce production. For its part, the allotment plan also included a tax on processors for the purpose of supporting the

price of farm products at a 1909-14 parity price level. The third major provision, licenses and marketing agreements, is vague, but it gave the secretary of agriculture broad powers to approve agreements and issue licenses "to effectuate the purposes' of the allotment program.[5] The bill did not set out clearly what provisions would be contained in those agreements and how they might further the purpose of the act. Partly because competitive price cutting was viewed in the early 1930s as an unfair trade practice, the foundation was laid for the evolution of licenses into price-fixing devices. Thereafter, with the passage of a series of amendments in 1935, the marketing order system, essentially as it is known today, was authorized. The key features of the order system--voting by producers, fixing of minimum prices, bloc voting, payments to cooperatives, and the various provisions for price differentials, both seasonal and geographical--were all provided for in the 1935 act.[6]

In addition to the Capper-Volstead Act and the various agricultural adjustment acts, another important type of market intervention whose roots can be traced to the conditions of the depression era is the price-support program. Price-support operations have been carried out for certain commodities by the Commodity Credit Corporation (CCC) since the passage of the Agricultural Adjustment Act of 1933. Through the years, CCC purchases of dairy products periodically reached high levels and were often blamed for artificially raising dairy prices.[7]

The CCC offers to buy carlots of butter, cheese, and nonfat dry milk at announced prices. Thus, when necessary, the CCC removes milk from the market by purchasing dairy products that cannot be sold in commercial markets at prices that correspond to the support price for manufacturing milk. The effect, of course, is to put a floor under the price of manufacturing milk and indirectly under virtually all dairy products. Table 1 shows the pattern of purchases by the CCC since the 1967-68 marketing year. Clearly, this pattern has been highly variable, with the low point in 1973-74 and the high point in 1982-83.

Table 1
Milk Production and Government Purchases under the Price-Support Programs

Marketing Year	Total Production(Billions of Lbs	Net Purchases, Mild-Equivalent(Billions of Lbs	Net Expenditures on Price-Support and Related Programs($ Millions)	Production Purchased(%)
1967-68	118.2	7.0	417.7	5.9
1968-69	116.6	4.8	329.6	4.1
1969-70	116.2	4.4	273.1	3.8
1970-71	117.4	7.1	383.5	6.0
1971-72	119.4	6.6	369.9	5.5
1972-73	119.1	4.9	264.6	4.1
1973-74	114.9	0.7	77.0	0.6
1974-75	115.6	2.4	318.7	2.1
1975-76	116.4	0.9	258.9	0.8
1976-77	120.9	3.4	302.4	2.8
1977-78	122.0	3.2	451.4	2.6
1978-79	122.8	1.1	250.6	0.9
1979-80	127.0	8.2	1,279l8	6.5
1980-81	131.6	12.7	1,974.8	9.7
1981-82	135.0	13.8	2,239.2	10.2

1982-83	139.0	16.6	2,600.4	11.9
1983-84	137.4	10.4	1,597.5	7.6
Summation	2,089.5	108.2	13,389.1	5.2

Source: Harlan J. Emery et al., Dairy Price Support and Related Programs 1949-1968, Department of Agriculture Agricultural Stabilization and Conservation Service, Agricultural Economic Report 165 (Washington: Government Printing Office, July 1969); ASCS Commodity Fact Sheets (various issues).

Government purchases in recent years, however, have tended to be considerably higher than in years prior to the 1979-80 marketing year. Since 1967-68, American taxpayers, through the CCC, have subsidized the dairy industry by purchasing 108.2 billion pounds of milk-equivalent dairy products at a total expense of $13.4 billion. Of course, this $13.4 billion subsidy is only a part of the social cost of the price-support program. There is also the cost of administering the program at both the federal and state levels. If the price-support program results in consumer prices that are higher over the long run than they would be in a free market, then the social cost is still greater.

Along with federal legislation, statutes to effect the same general objectives have been enacted in several states. In April 1933, New York became the first to pass a state law regulating minimum producer, wholesale, and retail milk prices, and 25 other states had taken similar action by the end of the 1930s. Most of the states regarded milk-price fixing as a temporary measure to relieve economically depressed farmers. At least 10 wrote clauses into their original bills that fixed a date beyond which the law could not be extended without legislative review and renewal. Milk control was a controversial subject in several states, and some state supreme courts declared the laws unconstitutional. By mid-1943, 11 of the original 26 states had revoked the authority to control retail milk prices.[8]

Through subsequent years, state regulation has gradually evolved into two major categories: (1) state laws that fix minimum prices at the retail level and (2) state laws that regulate such trade practices as sales below cost, discriminatory pricing, and milk promotion. State laws vary considerably in how they set prices, which trade practices they regulate, and so on. Five states regulate minimum retail prices, 33 regulate selected trade practices, several do both, and 12 states do neither.

The Arguments for Regulation

The Capper-Volstead Act, the agricultural adjustment acts, the price-support programs, and the various state milk laws were for the most part intended to improve the incomes of farmers and were justified mainly in terms of equity rather than efficiency. But an equity justification for market intervention is difficult to make persuasively. Equity is notoriously subjective: its evaluation depends upon who does the evaluating. In addition, an appeal to equity generally means forcing one group in society to subsidize another group, which limits market intervention's political appeal. Therefore, proponents of intervention in the dairy market formulated additional justifications. These generally rest on the premise that milk is different from other products and that this difference is sufficiently important to justify regulation in milk production, processing, distribution, marketing, and pricing.

The arguments for regulation can be summarized as follows: First, because milk is an important part of everyone's diet, especially that of children, regulations are necessary to ensure adequate supply of it. Second, because milk is perishable, local demand for milk must be satisfied by local suppliers. Third, in the short run, milk production is not very responsive to price changes because the number of producing cows cannot be changed quickly. In addition, the technology of dairy farming is such that the optimum production per cow is not very responsive to changes in the milk-feed price ratio. This unresponsiveness to relative prices, along with the extremely decentralized nature of dairy farming, places producers at a disadvantage in bargaining with processors. Fourth, milk is naturally susceptible to being used as a "loss leader,"[9] which causes destructive competition that does not allow producers, processors, and retailers to receive a "fair" price for the product. Unchecked, such competition drives local producers out of business and interrupts the supply of a necessary and important product. Then the price returns to a level higher than before.

Whatever the original validity of these arguments, they have been weakened severely by developments since the depression. It is useful, therefore, to consider the rebuttals to the arguments for regulation.

Although milk is an important part of a healthy diet, it does not follow that regulation is necessary to ensure an adequate supply of it. Experience shows that if there is a demand for a product at a price sufficient to cover its cost of production, a supply will be forthcoming.

In the years when much of the dairy legislation was passed, transportation and storage were indeed serious problems. Since then, however, improved technology has made the concept of a local, isolated market obsolete. Bulk milk can be moved more than 2,000 miles and packaged fluid milk can be moved 200-250 miles or more.[10] Furthermore, new developments in ultrahigh-temperature processing may cause the problem of perishability to virtually disappear. But even if perishability were a problem, it would still not justify market intervention. Many of the goods that we enjoy and depend on are perishable, and yet most of those are reliably supplied without extensive market intervention.

It is certainly true in the short run that milk production cannot be easily controlled. Cows must be milked twice a day, 365 days a year. But the production data for the nation show that the fluctuation of milk production is no greater than that of many other products. In 1983, for example, the lowest production occurred in February, at 10,707 million pounds, while the highest production occurred in May, at 12,616 million pounds, a variation of 18 percent. Variations in other years are close to this figure and appear to be highly predictable, as indicated in Table 2.[11] And although consumption patterns do not coincide

Table 2
Months of High and Low Milk Production, 1976-80

	Low	High	
Year	Millions of Pounds		Difference (%)
1980	9,970 (Feb.)	11,664 (May)	17.0
1979	9,281 (Feb.)	11,243 (May)	21.1
1978	9,242 (Feb.)	11,141 (May)	20.7
1977	9,285 (Feb.)	11,358 (May)	22.3
1976	9,210 (Nov.)	11,107 (May)	20.6

with production patterns, the variation is not excessive, as shown in Table 3.[12] In any industry where consumption and production patterns are so predictable, there can be little basis for the contention that price regulation is needed. If storage problems limit the balancing of production patterns with consumption patterns, then price movements will clear the market. When supply exceeds demand, the price will fall; when demand exceeds supply, the price will rise. In short, with highly predictable patterns of production and consumption, the pattern of prices is likely to be highly predictable as well.

The second part of this argument--that producers have a bargaining disadvantage in dealing with processors--may have been true before the passage of the Capper-Volstead Act in 1922, but it is hardly true today. In 1973, the cooperative share of the Grade A milk supply was reported to be 81 percent, and the cooperative share of non-Grade A supply was placed at 55 percent. Furthermore, cooperatives have moved into the processing and

Table 3
Months of High and Low Fluid Milk Sales in Marketing Areas Covered by Federal Milk Orders, 1976-80

	Low	High	
Year	Millions of Pounds		Difference (%)
1980	2,583 (June)	3,110 (Oct.)	20.4
1979	2,722 (June)	3,148 (Jan.)	15.7
1978	2,660 (July)	3,076 (Mar.)	15.6
1977	2,675 (July)	3,076 (Mar.)	15.0

1976	2,636 (June)	3,117 (Jan.)	18.3

manufacturing of dairy products; in 1973 they had 28 percent of that market.[13] Even without price regulation, cooperatives would seem to have adequate bargaining power with processors.

The "loss-leader issue" has traditionally arisen out of either of two situations. The first, no longer a serious problem, is when processors, facing an excess supply in their home market, "dump" their surplus milk into other markets at low prices, regardless of the impact of that action on the price structure of the receiving markets. The second is when low retail milk prices are used to build customer traffic. Some argue that large supermarket chains buy milk products at low prices through handling economies or market power and then charge low prices to attract customers, customers who will not buy much milk because of its perishability but who will buy other items while they are in the store.[14] Special sales on milk products are a very low cost way of building customer traffic, it is argued, and one that can be used with predatory intent.

Both of these situations have occurred from time to time in the dairy industry as well as in other industries. Dumping would have become a much more serious problem, due to the trends increasing the supply of milk relative to demand, had it not been for the price-support program for manufacturing milk. This program absorbs milk surpluses that might otherwise be dumped.

Two observations are relevant with regard to the use of milk as a loss leader. First, the possibility of predatory intent is so remote that it can be disregarded. If large retail chains decided to put their competitors out of business, they would not have to use milk prices to do it. A wide range of products are not covered by any law or regulation on pricing, and any combination of these could be used for a predatory pricing strategy. Second, a law that prevented the use of milk as a loss-leader would tend to raise the average level of retail milk prices, resulting in a transfer of wealth from milk consumers to the dairy industry. It is impossible to objectively evaluate the desirability of such a transfer. Political considerations, however, usually lead policymakers to favor the loud demands of the relatively few in a favored industry, whose per capita benefits from intervention are large, over the muted and disorganized complaints of the many consumers, whose per capita costs from intervention are small

In summary, current dairy policy stemmed from a desire to improve the income of dairy farmers during the depression and from a belief that milk has certain characteristics that justify such policies. In the next section we look at some of the economic legacies of dairy policies since the depression era.

Economic Legacies of Past Dairy Policies

Legacy 1: Policymakers face the dilemma of having to decide whose welfare should be considered more important.

Many important economic issues are "zero sum" issues. Zero-sum regulation, for example, is regulation that gives one group benefits that are exactly offset by the costs the regulation imposes on some other group. Proponents of current dairy legislation often argue that dairy regulations offer the public benefits equal to those they provide the dairy industry, but in most cases that is simply not true. There are several zero-sum issues in the current dairy controversy.

Producers vs. Consumers. If government regulation results over the long run in higher dairy prices than would exist in a free market, then the consumers of dairy products are subsidizing the producers. If all the costs of regulation, including storage costs, are fully reflected in the prices of dairy products, then dairy consumers bear virtually all the costs of the subsidy. If some regulatory costs are paid out of the public purse, then nonconsumers of dairy products bear part of the subsidy as well. The preponderance of research literature, some of which is cited later in this paper, supports the conclusion that the average prices of dairy products over the years have been higher than they would have been in a free market.

Price stability is a second issue. Proponents of dairy regulation often argue that regulation introduces price stability into the dairy market, benefiting consumers as well as producers. This argument rests on the assumption that violent price fluctuations would occur in the absence of regulation and would have undesirable consequences for both producers and consumers. But relatively predictable supply and demand conditions make violent price fluctuations unlikely. It has

been so long, however, since the milk market has been free of intervention that the data needed to predict potential price fluctuations in a free milk market are not available

Local Producers vs. Outside Producers. Market intervention often favors local producers over outside producers by erecting barriers to the importation of milk into local markets. In markets with no such barriers, outside producers can often pay transportation costs and still put heavy competitive pressure on local producers. The barriers, thus, lead to higher prices locally and lower prices in other markets, favoring local producers and outside consumers at the expense of local consumers and outside producers.

Producers vs. Resource Owners. When an industry is subsidized, the incomes of that industry's producers are usually enhanced in the short run. In time, however, the subsidy may well be capitalized into the industry's resource prices, enhancing the incomes of resource owners. These owners may or may not be the producers for whom the subsidy was intended.

This price effect will be most pronounced for those resources that are most limited in supply. But the sizable and increasing surpluses of milk generated by artificially high prices indicate either that abundant supplies of needed resources are available to the industry without substantial in- creases in their prices, or that dairy farmers have generally managed to increase support prices in line with their increased costs. Because there are no significant artificial barriers to the entry of milk producers into the market or to expansion by established producers, the maintenance of enhanced milk prices has required that surplus milk be taken off the market at taxpayers' expense. Thus, it is probably true that the subsidy implicit in enhanced milk prices has largely remained with the milk producers for whom it was intended. It may be, however, that where milk production is most extensive, land for increased milk production must be drawn from other uses at increasing cost. In this case, part of the value of the subsidy will be enjoyed by landowners who may or may not be milk producers.

Large Retailers vs. Small Retailers. Research on the trade-off that might occur between small and large retailers is almost nonexistent. To gain some insight into the perceptions of retailers on this issue, we mailed a questionnaire to retail grocery stores selected at random from local telephone directories in towns throughout Kentucky. Each store manager was asked to place his store in one of four categories with respect to size and chain affiliation. Each was also asked to describe his experience with representatives of the Kentucky Milk Marketing Commission and to give his opinion of the state milk marketing law.[15] Kentucky s milk marketing law stipulates that retailers not sell milk below "cost," which is defined to include such indirect costs as labor, rent, interest, and depreciation. The Kentucky Milk Marketing and Antimonopoly Commission is charged with enforcing the law.

Eighty-seven usable replies were returned, over half of them from small independent stores. Twenty-two of the 87 had been visited by a representative of the commission. As might be expected, nearly half of the commission's visits were made to national or regional chain supermarkets, although these represented only slightly over 10 percent of the survey stores. Eleven replies came from chain convenience stores, which reported no visits from the commission.

The managers of all of the stores visited by the commission stated that the comments of the representatives indicated that the commission indeed monitors the retail prices of certain products and has the power to control these prices. However, only 2 violation citations were reported issued in these 22 visits. Despite the perception of these retailers that the commission has the power to set, or at least strongly influence, retail prices for milk, Kentucky law expressly denies this power to the commission:

The right of private enterprise to determine and establish the price or prices for sales of its products shall not be affected by KRS 260.675 to KRS 260.760, and nothing contained herein shall be construed to authorize or permit the Commission to set, fix, or establish any price or prices, for sale of any milk, cottage cheese, or frozen dairy product, or any other product.[16]

When store managers were asked if they believed that the state milk marketing law and the Milk Marketing Commission restricted their freedom in pricing dairy products, 56 percent of large chain supermarkets, 45 percent of small independent grocers, and 46 percent overall replied yes. The reason for the disparity between the responses of the large chains and the small independents is twofold: First, large chain supermarkets are visited more often by the commission's representatives. Second, the lower cost structures of the chains would permit them to charge lower retail

prices under the Kentucky law but would also result in more complaints to the commission from small retailers. This, in turn, would cause the influence of the state law to be felt more strongly by the large chains.

Store managers were also asked to make open-ended comments, which we classified as either generally favorable or unfavorable to the milk marketing law. The managers of the largest store category, national chains, were about equally divided. Managers of the next-largest stores--regional chains, independent supermarkets, and convenience stores--were uniformly favorable to the law. The most surprising response was that of the small independent retailers: 11 of 20 were unfavorable to a law that was especially designed to protect them.

Unfavorable comments tended to focus on three points: (1) that the law was objectionable as a matter of principle (though four or five store managers indicated that while they were against such laws in principle, this particular one was needed); (2) that the way the law was enforced was not good (including some complaints that the commission did not have enough authority to do a good job of enforcement); and (3) that some large stores have been able to turn the law to their own advantage. The typical favorable comment indicated a belief that the law protected smaller stores from price competition with larger stores, especially chains.

If there is a welfare transfer between large and small retailers, the questionnaire did not clearly demonstrate it. To the extent that milk prices are elevated above free-market levels, there is a transfer from consumers to both large and small retailers, with large retailers probably receiving the greatest relative benefit if they enjoy economies of scale. But the questionnaire did not elicit strong evidence that retailers see the commission as having significant power to set milk prices. We infer that such a perception would have an inhibiting effect upon pricing behavior.

Current Producers vs. Future Producers. One type of welfare tradeoff that is frequently ignored by policymakers is the intergenerational tradeoff: policies beneficial to current producers may be detrimental to future producers. This is a nebulous tradeoff, but its long-run effects may not be negligible.

Most market-intervention measures, such as price regulation, are based on the assumption that what is beneficial today will continue to be beneficial tomorrow. But there are at least two ways that market intervention in the dairy industry could be harmful to the industry in the future. First, if prices are maintained at levels higher than what they would be in a free market, then consumption will be restricted below what it would be in a free market, and consumers will be encouraged to substitute other beverages for milk. Although the short-run effects of such substitution may be minimal, the long-run cumulative impact on the public's consumption patterns and preferences might have serious consequences for the dairy industry. Second, market intervention might reduce the industry's competitive flexibility over a period of time. This would manifest itself through a lack of innovativeness, a decline of research and development, the preservation of inefficient operators, etc. According to one study of market performance in the fluid milk industry:

It is fairly clearly demonstrated that in 1969 fluid milk markets in which both producer prices and retail prices were regulated by state authority had significantly higher marketing margins and were less innovative than were fluid milk markets not so regulated. . . . Apparently, the competitive process was more effective at maintaining low marketing margins and at encouraging innovativeness than was the state regulatory process which set minimum and/or maximum prices.[17]

Consumers of Fluid Milk vs. Consumers of Manufactured Dairy Products. Class I, or fluid, milk that cannot be sold at the established Class I price must be channeled into manufacturing, or Class II, uses--that is, non-fat dry milk, butter, and cheese, for example. Though the government supports the price of Class II milk, the support price is probably lower than it would be in a free market.[18] Then again, because the determination of the Class II support price may include political considerations, this price may be adjusted to prevent the surplus of manufactured dairy products from reaching politically unacceptable levels. All things considered, it is probably true that the price of fluid milk has been enhanced relative to the prices of manufactured dairy products, with consequent distortions in the consumption patterns for these products. In short, consumers of manu- factured dairy products are probably being subsidized at the expense of consumers of fluid milk.

The preceding discussion was intended not so much to identify the groups that have benefited from dairy policy as to point out some of the welfare tradeoffs that must be made by policymakers who engage in market intervention. The

dilemma they face is that there is usually no way to make one group better off without harming another group. Market activity also requires welfare tradeoffs, but markets distribute costs and benefits impersonally, without regard to the factors that often encourage political intervention--the political power of special interests, for example. Interventionist policies may also have sociopolitical objectives, like income redistribution, that are not registered by free markets. Generally, the free market "helps" consumers and those who produce what consumers want, at the lowest prices.

Dairy prices are indeed higher than they would be in a free market. This artificial elevation arises from three basic sources: (1) federal marketing order prices, in conjunction with the price-support program for Class II milk, (2) over-order premiums, and (3) the various state milk marketing laws.

Price Enhancement and the Federal Order Prices. A federal marketing order is a legal instrument issued by the secretary of agriculture to regulate the terms under which processors within a specified area can purchase milk from producers (dairy farmers). Any group of producers may petition the secretary for an order. There are 45 milk marketing orders in effect in the United States today, covering about two-thirds of all U.S. milk produced.

Under each order, a market administrator sets a legal minimum farm-level price for milk going into fluid use (Class I). Milk processors then route as much milk into fluid use as the market will take at the order, or farm-level, price. The rest is diverted to manufacturing uses. The price of milk going into manufacturing uses, including fluid-eligible milk diverted from fluid use, is supported at a level specified by the secretary of agriculture under legislative authorization. The Commodity Credit Corporation provides the actual price support by purchasing manufactured dairy products in whatever amounts are necessary to keep the manufacturing-milk price at the support level. The diversion of fluid-eligible milk from fluid use means that milk of a higher quality and cost than necessary is used for manufactured products. Each producer within a federal order market receives the same price, called the "blend price," regardless of whether his milk goes to fluid or manufacturing uses. The blend price is a weighted average of the fluid and manufacturing prices. The weights are the marketwide percentages of the quantities going into each of these uses.

A pricing scheme such as this is a rather straightforward application of the theory of price discrimination, which holds that if a market can be divided into two (or more) submarkets having different price elasticities of demand, the optimal pricing strategy is to charge a higher price in the submarket having the lowest price elasticity. For each submarket, the profitmaximizing price is established at the point where marginal revenue equals marginal cost. If buyers in the lower-priced market can resell the product in the higher-priced market, price discrimination is not profitable. An additional source of profit in the dairy market is the government's purchase, required by law, of sufficient quantities of products in the lower-priced (Class II) market to maintain the minimum Class II price.

In short, the artificially high Class I price encourages an overproduction of fluid milk, which then flows into the Class II market, where the government intervenes to purchase products made with Class II milk in order to maintain the minimum Class II price. Indeed, government warehouses are brimming with cheese and other dairy products purchased for this purpose.

Several studies have attempted to estimate the amount that dairy prices are raised by the federal order price system, but they have produced widely varying estimates. All agree, however, that there is some artificial price enhancement; none support the argument that regulation actually reduces the long-run price. According to Hallbert and King:

A number of studies have demonstrated that farm, and hence retail, prices would be somewhat lower in the absence of government regulations of the type presently operative on the assumption that the demand and supply conditions of the industry would remain unchanged under the alternative structure. . . . The only point of contention among these studies is the extent to which prices would be lower.[19]

A study by Kwoka estimates that aggregate transfers from consumers to producers amounted to $750 million in 1970, with $179 million of additional efficiency losses due to milk regulation.[20] Ippolito and Masson estimate gross transfers to farmers of $210 million, with efficiency losses of an additional $60 million.[21] Gruebele estimates that between 1950 and 1975, dairy prices were about 7 percent, or $410 million per year, higher than they would have been without the price-support programs.[22] Higher marketing margins were found by Shaw, Hallbert, and Pierce:

All markets with state regulation have, on the average, higher marketing margins but only those markets in which

minimum and/or maximum resale prices are regulated have statistically significant higher margins.[23]

Manchester also found that markets with resale price control were somewhat less innovative than other markets.[24] Bartlett found higher distributors' gross margins in controlled markets:

The DGM's (distributors' gross margins) of controlled markets have exceeded those of uncontrolled markets during the entire period of state regulation. For the 29 year period, 1934 to 1962, the DGM's of the 14 controlled markets averaged 8.35 cents, or .8 cents a quart above the average of the 33 uncontrolled markets.[25]

Price Enhancement and Over-Order Premiums. Another potential source of price enhancement is the over-order premium, a price increment above the Class I price that producer cooperatives receive from processors through negotiation. The simple annual averages, in cents per hundredweight (cwt), received in 32 cities by the most important cooperatives in each city were as follows: for 1979, 53; 1980, 63; 1981, 64; 1982, 61; 1983, 58; 1984, 64.[26]

Many cooperatives argue that their premiums are justified by the services the cooperatives provide, but this assertion is strongly denied by several studies, providing further evidence that cooperatives do not lack market power in dealing with distributors. A 1977 American Enterprise Institute paper argued:

Characterization of premiums as service charges is a ruse. The charges have been consistently in excess of the cost of services provided, and the principal "service" provided, balancing surplus, is not a service; rather, it is a means of controlling Class I eligible milk to the market, a key to market power.[27]

Masson elaborates on this "key to market power":

To monopolize the milk markets and get a Class I premium requires control over the milk that can most logically serve the market. The key to getting the power necessary to charge a Class I premium is control over the milk which can undercut a premium price when one is imposed. Since Class II milk sales will seldom obtain a premium, substantial uncontrolled milk going into Class II use is a threat to the ability to charge premiums [on Class I milk]. Dairy economists and coops cite supply control as crucial to "bargaining power." . . . Supply control means controlling enough of the Grade A milk, both Class I and Class II, so as to assure that a processor facing a Class I premium cannot turn to a co-op losing money on Class II operations and get a more than willing alternative to 'market power. Thus, control of the market surplus is crucial to monopoly control.[28]

A Department of Justice study for the years 1973-75 made a similar point:

This correlation between the market share held by the dominant cooperative and the size of the premium extracted strongly indicates that over-order charges relate more to market power, which essentially amounts to control of Class I eligible milk in an order, than to the level of services provided.[29]

In a more recent study, Babb, Bessler, and Pheasant found somewhat less conclusive results.

The relationship between over-order payments and measures of cooperative concentration was generally positive, as expected. The coefficients for cooperative concentration were most often statistically significant prior to 1971 and were significant more frequently for the largest cooperative than for the four largest cooperatives. The size of the coefficients declined after 1970. . . . In sum, the relationship between concentration and over-order payments is highly tenuous because concentration is only one of several factors that affect market power and there are many considerations which might influence the decision to exercise market power.[30]

In summary, it is clear that over-order premiums, whether due to the elusive "market power" of the cooperatives or to the regulation of the milk market, play at least a small part in the enhancement of milk prices in the retail market.

Price Enhancement and the State Milk Marketing Laws. As indicated earlier, 38 states either set minimum retail prices for milk, prohibit selected trade practices, or both. The question is, does such market intervention further raise the price of milk? In this section, we present our findings in the case of the Kentucky milk marketing law.[31] Our conclusions rest, first, upon a commonsense consideration of the law in itself, and second, upon a price survey taken in Kentucky

and surrounding states.

As one reads the Kentucky law, it is clear that various features of it could well contribute to increasing milk prices. First, some paragraphs in the law conflict with KRS 260.710(1), which states:

The right of private enterprise to determine and establish the price or prices for sales of its products shall not be affected by KRS 260.675 to KRS 260.760, and nothing contained herein shall be construed to authorize or permit the Commission to set, fix, or establish any price or prices, for sale of any milk, cottage cheese, or frozen dairy product, or any other product.

It is difficult to see how "the right of private enterprise to determine and establish the price" can be preserved under the milk marketing law. The reasons for this contradiction are laid out in what follows.

Every dealer or handler must file schedules with the commission on all dairy products (KRS 260.710, Item 2). According to the State Department of Agriculture, the requirement to file price schedules and price changes is currently applied only to wholesalers, but as the law is written, it could also be applied to retailers

Price schedules can be superseded, changed, or withdrawn only on forms prescribed and furnished by the commission and by filing a copy of the new or modified price schedule with the commission when and in the manner the commission prescribes (KRS 260.710, Item 3). According to one source, such changes by processors must be filed 20 days in advance,[32] thus seriously impairing a processor's competitive flexibility.

A seller must charge the same price in all locations, after allowing for differences in grade or quality and transportation costs (KRS 260.705). This stipulation is a denial of the existence of different demand functions across geographical areas.

A seller's behavior is subject to the interpretation of the commission as to whether or not he is engaging in "any marketing practice established to be unreasonable by the Commission" (KRS 260.705).

A seller's behavior is subject to the interpretation of the commission as to whether he is "doing any act injurious to public health or welfare or doing any act injurious to trade or commerce by disruption of the orderly marketing of dairy products" (KRS 260.735).

The cost of defense and the burden of proving that the ambiguous requirements listed above are not being violated fall squarely on the seller--creating yet another obstruction to free enterprise under the milk marketing law. Free enterprise cannot truly exist in this environment.

A second reason to suspect that the Kentucky milk marketing law might lead to artificially high prices is the potential "harassment factor" implied in the law's empowerment of the commission to investigate any person suspected of violating the provisions of the law. The commission can issue subpoenas for testimony and for the books and records of anyone believed to have information relevant to an investigation. The cost of such an investigation to a retailer in time and out-of-pocket expenses could easily outweigh any benefits he might gain through competition deemed "unreasonable" by the commission.

A third reason is that the true cost of any one item a retailer sells cannot be accurately and precisely calculated because of the difficulty of allocating such overhead costs as rent, interest, depreciation, utility expense, and executive salaries, on a product-by-product basis. Fictitious figures can be generated using a multitude of different formulas, but these no more represent the true cost of a single product than do any other figures. Hence, there is no way for a retailer to "prove" that he is not selling "below cost," for the costs that the Kentucky milk law requires simply cannot be reliably calculated.[33]

Fourth, the law permits the members of the Milk Marketing and Antimonopoly Commission to have connections with the dairy industry. All five current members of the commission do in fact have such an affiliation. With no reflection on their integrity, it is naive to expect them to be consistently objective in matters affecting that industry.

Price Enhancement: The Empirical Evidence. We cannot but conclude that the Kentucky Milk Marketing Law and its enforcement are likely to result in a bias toward artificially high prices for consumers. Have we in fact experienced higher prices? To find out, we sampled dairy prices in 144 grocery stores in Kentucky, Tennessee, West Virginia, Ohio, Indiana, and Illinois. Tennessee has had a law similar to Kentucky's since 1965; the other states sampled do not regulate dairy product prices. If the effect of dairy regulation is to raise retail prices, then prices in Kentucky and Tennessee should be higher than prices in unregulated states by an amount that cannot be fully explained by other factors. After subjecting the data from the 144 stores to a regression analysis and controlling for store type, Kentucky and Tennessee were in fact found to have higher retail dairy prices, by 10-12 percent, or 18-23 cents, per gallon. See Table 4. [34]

In the two years during which the Kentucky law has been inoperative, it is clear from casual observation and news reports that milk prices have fallen. We have made no systematic inquiry to determine the extent of the price reduction, however.

Table 4
Price Elevation of Milk in Regulated vs. Unregulated States*

Gallons	Price(cents)	Half-Gallons	Price(center)
Whole milk	18.5	Whole milk	7.8
Two-percent milk	18.5	Two-percent milk	8.4
Low-fat milk	22.5	Low-fat milk	10.5

*Regulated states are Kentucky and Tennessee; unregulated states are West Virginia, Ohio, Indiana, and Illinois.

Legacy 3: Current dairy policy encourages an overproduction of dairy products.

If regulation raises the price of a product higher than its free-market level, a surplus of the product will be created. This simple economic principle, often overlooked or forgotten by the policy community, can best be explained by Figures 1-3. The demand curve in Figure 1, labeled D, depicts consumer behavior. At price P1, consumers will purchase Q1 units of the product. If the price falls to P2, they will purchase more of the product, say, Q2 units. In other words, more of the product will be sold at a low price than at a high price, if other factors affecting sales remain constant. The supply curve, Figure 2, depicts supplier behavior. At price P1, suppliers will want to sell a quantity Q1. If the price falls to P2, less of the product will be offered for sale. In other words, more of the product will be offered for sale at a high price than at a low price, if other factors remain constant. Both curves are likely to be steeper in the short run than in the long run. For milk, the short-run supply curve may be almost vertical, meaning that the short-run supply response to a price change is very small. In the longer run, however, supply response to a price reduction would be greater, as farmers reduce the size of their herds and/or exit the industry.

Equilibrium, where the two curves intersect, is shown in Figure 3. The equilibrium price is represented as Pe and the equilibrium quantity as Qe. At price Pe, suppliers bring to market the same quantity that consumers wish to purchase. When policymakers attempt to alter this equilibrium outcome, a misallocation of resources results. Consider Figure 4, for example.

DEMAND Figure 1 [Graph omitted]

SUPPLY Figure 2 [Graph omitted]

EQILIBRIUM Figure 3 [Graph omitted]

INTERVENTION Figure 4 [Graph omitted]

The same equilibrium point has been depicted, but suppose that policymakers wished to impose a minimum price of Pd. At price Pd, consumers will be willing to purchase only Ql units of the product, but suppliers will bring to market Q2 units. A surplus will therefore develop in the amount of Q2 minus Q1 units of the product. In a free market such a

surplus would cause the price to gradually converge on Pe, where demand is equal to supply, but this convergence cannot occur when the price is artificially maintained at Pd. Something must be done with the surplus. Typically the government buys it and then stores it, sells it at a loss, gives it away, or converts it into cheese, butter, dried milk, or other products. All of these disposal methods create a transfer of wealth from the public to the dairy industry through the higher price of the product and the cost of managing the surplus.

The outcome predicted by Figure 4 is shown in Table 5. In the period 1980-84, for example, the milk-utilization rate for the nation was 45.7 percent. This means that out of each 100 pounds of Class I milk produced, 54.3 pounds were surplus. The surplus was channeled into manufacturing uses. Since the cost of production is higher for Class I milk than for manufacturing-grade milk,

Table 5
Producer Deliveries in Federal Market Areas and Surpluses, 1950-84

Years	Total	Used in Class I	Surplus(%)
1950-54	22,962	14,000	39.0
1955-59	34,058	21,709	36.4
1960-64	50,514	31,430	37.7
1965-69	55,737	35,897	35.6
1970-74	67,140	40,216	40.1
1975-79	75,862	40,874	46.0
1980-84	89,881	40,993	54.3

the net result for the economy was that resources were used to produce a more expensive product than we needed or wanted.

The surplus figures in Table 5 vividly illustrate that the original government intention of providing only temporary assistance to the dairy farmer during an adjustment period has failed. The "temporary" measures became permanent, and the surplus milk problem has gotten steadily worse. This always happens, sooner or later, when the government attempts to thwart the laws of supply and demand. Groups that have special interest in maintaining the regulated price will go to great lengths to disguise the workings of this simple economic principle, but the growing surpluses cannot be indefinitely hidden or rationalized. Their very existence is irrefutable evidence that the regulated price is above the free-market price.

Legacy 4: Current dairy policy encourages an underconsumption of dairy products.

Artificially high dairy prices also lead to lower consumption of dairy goods. At the regulated price Pd in Figure 4, consumers will purchase Ql units of the product, which is less than they would purchase if the free-market price of Pe prevailed. Since demand is usually more responsive to price changes in the long run than in the short run, the quantity of milk products that consumers buy may even diminish further over time in response to regulated dairy prices. Research findings on this vary widely, but all agree that it is sure to happen to some extent. Indeed, per capita consumption of dairy products in terms of milk-equivalent, fat-solids basis, has fallen from 620 pounds in 1965 to 578 pounds in 1983.[35] Although the decline in the proportion of children in the population and the cholesterol health scare have no doubt restricted the market, artificially high milk prices must also have contributed to the decline in per capita milk consumption.

Legacy 5: Current dairy policy creates an overproduction of manufacture d airy products.

Surplus Grade A or Class I milk must go somewhere. Under current dairy policies, the surplus is used for such manufactured dairy products as cheese, butter, and dried milk. The surplus production of Grade A milk tends to reduce the price of manufacturing-grade milk, but the price of this milk is still not allowed to fall to its free-market level because of the price-support program for manufactured products. A surplus of manufactured dairy products is the

result.

Legacy 6: Current dairy policy creates a misallocation of the nation's resources.

Government interference in the milk market results in too many of the nation's resources being used for the production of milk, a large portion of which is not needed or wanted. Consequently, these resources are unavailable for the production of other goods and services that are needed and wanted. The beleaguered consumer, of course, picks up the cost. First, he pays higher prices for milk. Then, through his tax dollars, he pays for the higher milk prices. Finally, he pays higher prices for other products because resources are restricted from their highest-valued uses.

The "Life Cycle" of Market Intervention

The "life cycle" of market intervention in an industry like the dairy industry can be summarized in five phases:

Phase 1: The Setup. A special-interest group is visited by hard economic times. On the basis of equity or other arguments the members of the group entreat their elected representatives to pass laws that will insulate them from the economic laws of supply and demand. If they are successful, they move into phase 2.

Phase 2: The Sting. When intervention is begun, most firms in the favored industry benefit at the expense of consumers. Capital values in the industry are enhanced initially, based on the increased profits of the initial market participants. In the longer run, however, costs to the industry rise because of reduced pressure to keep them down and perhaps because of higher resource prices as the industry expands. Consumption of the product also falls, gradually reducing industry profits and creating a demand for additional subsidies.

Phase 3: The Shakeout. The insulation from competition provided in phase 2 makes it unnecessary for the industry to make the difficult structural changes needed to survive on its own. The subsidy increases to offset the decline in profits caused by rising costs and becomes permanent. Other social costs, such as product storage and the maintenance of the bureaucracy, typically rise as well. Net gains to the industry from regulation may gradually disappear if subsidies are not increased fast enough to offset the growing inefficiencies and rising costs of the industry.

Phase 4: The Revolt. At some point, the taxpayers revolt against the high cost of the subsidy, and the industry is deregulated. Some firms may leave the industry as prices become determined by supply and demand conditions, and there may be a loss of capital values roughly symmetrical to the increase that occurred early in phase 2. Eventually, an equilibrium is established that is approximately the same as what would have existed if policymakers had not intervened in the first place.

Phase 5: Normalcy. Competition restores strength to the industry without guaranteeing survival to each and every firm. Industry profits return to normal. Consumers pay a free-market price for the product, a price determined by supply and demand.

To conclude, the distinction between "good intentions" and "good results" should be stressed. Regulation is usually introduced with the best of intentions, but policymakers seldom have the prescience to understand and predict all the consequences of regulation. More often than not, undesirable and unpredicted consequences nullify or destroy the regulation's original objectives. This has clearly been the case in the dairy industry, where the government's purchases of manufactured dairy products and the consequent strain on the federal government are reaching crisis proportions. And dairy producers, saddled with high costs and an overinvestment in land and capital, continue to find it increasingly difficult to survive.

Therefore, policymakers should employ three general principles when considering market-interfering regulation of any kind. First, evidence of the need for regulation should be overwhelming. "When in doubt, do not interfere" should be the guideline. Second, regulation that insulates some special group from competition should be avoided. In the long run, each industry or producer must thrive or perish on its own ability to compete. Third, market-intervening regulation should incorporate a strict time limit to prevent it from becoming a permanent subsidy. A regulation should expire automatically after its time limit has been reached, and the burden of proof for its reinstatement should be increased. The application of these principles, while subjective and imprecise, would nevertheless help to avoid much

regulation detrimental to the public interest.

FOOTNOTES

[1] Remarks of Rep. Andrew J. Volstead (R-Minn.), Congressional Record 61 (1921): 1033.

[2] Ibid.

[3] House, Report of the National Agricultural Conference, 67th Cong., 2d sess., 1922, H. Doc. 115, pp. 24-25.

[4] Senate, 73d Cong., 1st sess., 1933, S. Rept. 16, pp. 1-4.

[5] Ibid.

[6] Paul W. MacAvoy, ed., Federal Milk Marketing Orders and Price Supports, Ford Administration Papers on Regulatory Reform, American Enterprise Institute Studies in Governmental Regulation 176 (Washington: American Enterprise Institute, 1977), p. 21.

[7] J. W. Gruebele, "Effects of Removing the Dairy Price-Support Program," Illinois Agricultural Economics 18, no. 2 (July 1978): 1.

[8] Roland W. Bartlett, Is State Control of Consumer Milk Prices in the Public Interest? University of Illinois Agricultural Experiment Station Bulletin 705 (January 1965), p. 2.

[9] The term "loss leader" does not necessarily mean that a financial loss is taken on the product. Rather, it is used in a general sense to refer to a low-price strategy at retail to build customer traffic. Such a strategy might result in increased profit for the retailer through increased sales volume of dairy and/or nondairy products.

[10] C. N. Shaw and S. G. Levine, Government's Role in Pricin Fluid Milk in the United States, Department of Agriculture Economics, Statistics, and Cooperatives Service, Agricultural Economic Report 397 (Washington: Government Printing Office, March 1978), p. 3.

[11] Richard F. Fallert and Boyd M. Buxton, The Current Dair Industry Setting--Evolving Problems and Issues, Department of Agriculture Economics and Statistics Service, National Economics Division Staff Report AGESS810121 (Washington, Government Printing Office, January 1981), p. 6.

[12] Federal Milk Order Market Statistics, Department of Agriculture Marketing Service (Washington, Government Printing Office, various issues).

[13] Dairy Outlook and Situation, Department of Agriculture and Economic Research Service (Washington: Government Printing Office, September 1981), p. 9.

[14] Of course, the strategy need not be limited to large, chain supermarkets, which are usually depicted as the culprits. Any retailer can play this game if he feels it will enhance his overall profitability.

[15] Details are available from the authors.

[16] KRS 260.710.

[17] C. N. Shaw, M. C. Hallbert, and C. W. Pierce, Impact of State Regulation on Market Performance in the Fluid Milk Industry, Pennsylvania State University Agricultural Experiment Station Bulletin 803 (July 1975), p. 28.

[18] MacAvoy.

[19] M. C. Hallbert and R. King, Pricing of Milk and Dairy Products, Pennsylvania State University Agricultural Experiment Station, Agricultural Economics and Rural Sociology Study 150 (1980), pp. 46, 47.

[20] J. E. Kwoka, "Pricing Under Federal Milk Market Regulation," Economic Inquiry 15, no. 3 (1977).

[21] R. A. Ippolito and R. T. Masson, "The Social Cost of Government Regulation of Milk," Journal of Law and Economics 21, no. 1 (1978).

[22] Dairy Outlook and Situation, Department of Agriculture Economics and Statistics Service (Washington: Government Printing Office, March 1981).

[23] Shaw, Hallbert, and Pierce, p. 20.

[24] Alden C. Manchester, Pricing Milk and Dairy Products: Principles, Practices, and Problems, Department of Agriculture Economic Research Service, Agricultural Economics Report 207 (Washington: Government Printing Office, June 1971).

[25] Bartlett, p. 24.

[26] Dairy Market Statistics, Annual Summaries, Department of Agriculture Agricultural Marketing Service (Washington: Government Printing Office, various issues).

[27] MacAvoy, p. 96.

[28] Robert T. Masson, Some Issues of Cooperative Market Power, Cartelization, and the Capper-Volstead Act, paper presented at the P.L.I. Conference on Cooperatives, December 1976, p. 7.

[29] Statistical Analysis of Market Share and Over-Order Charges, Department of Justice Antitrust Division, Economic Policy Office, p. 88. Quoted in MacAvoy, p. 12.

[30] E. A. Babb, D. A. Bessler, and J. Pheasant, Analysis of Over-Order Payments in Federal Milk Marketing Orders, Purdue University Agricultural Experiment Station Bulletin 235 (1979), p. 26.

[31] After this study was completed, the Kentucky law was found by Fayette County Circuit Court to be in violation of the Kentucky constitution, and that ruling was affirmed by the Kentucky Supreme Court. The law is now inoperative, pending further litigation.

[32] Robert Beck, Milk Marketing Prices and Fair Trade on Distilled Spirits, Testimony before the Interim Committee, Kentucky General Assembly, March 3, 1975.

[33] Proponents of the milk marketing law often argue that the law preserves competition because it encourages cost reductions as a means of reducing ultimate consumer prices. This is true, of course, but the law is not unique in this respect. The free market also encourages cost reduction without the concommitant costs of government enforcement and the cost imposed on suppliers to prove that they are not selling below cost. Furthermore, research by Shaw et al. (see footnote 17) suggests that the free market is superior in this regard. Therefore the position that an added incentive to reduce costs is provided by the state law appears spurious.

[34] Detailed results of the study are available from the authors

[35] Dairy Outlook and Situation (September 1981), p. 15.