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THE ACCOMPLISHMENT OF DAIRY PROGRAM OBJECTIVES

(By Emerson M. Babb and Robert D. Boynton, Department of Agricultural Economics, Purdue University)

Current views of the effectiveness of dairy programs cover a wide range. Some believe that current programs are working well. Some think there are temporary or transitory problems which require, at most, fine-tuning of current programs. Some think the current situation requires drastic alteration or abandonment of current programs. In the absence of an understanding as to whether we have a problem, a discussion of alternative policy approaches may not be very productive. It is easy for the current situation to shape one's perceptions of the problem and one's views toward programs. For this reason, we decided to devote our attention to a consideration of what existing dairy programs have brought us in the past 10 years. We believe a longer run assessment of program consequences is a necessary foundation for instituting policy changes. We will thus focus on an assessment of (1) the extent to which programs have accomplished stated objectives during the 1970's and (2) factors which adversely affected accomplishment of those objectives.

Another reason we elected not to discuss alternative dairy policies is that this has been thoroughly done in recent reports [3, 4, 6, 7]. The consequences of alternative price support policies were projected into the early 1980's in three reports [8, 9, 10]. While these three studies were designed to compare the consequences of alternative policy approaches, as opposed to projecting actual results, the 1980 projected results under 80 percent of parity were rather accurate. The current dairy situation should not have come as a surprise.

Performance of the dairy industry is influenced by a number of programs and policies including Federal milk marketing orders, dairy price supports, restrictions on dairy produce imports and policies toward cooperatives. All of these programs and policies have been under fire at one time or another, but the critics have been more numerous and more vocal during the 1970's. During the 1970's, the debate on Federal orders was intense. More recently, attention has been focused on the dairy price support program. Given the current and prospective costs of that program, it will likely be the centerpiece of dairy policy debate in the immediate future.

That the dairy price support program will occupy this central position in the 1980's is further justified by the dominance it has held over other dairy programs in the past decade. Consequences of other dairy programs, such as Federal milk orders, have mostly been the result of support price actions [3]. Yet a great deal of effort has been spent on tilting with windmills during this period, diverting attention

away from the one program which has been the fountainhead of performance in the dairy sector—the price support program. While its importance in the decade of the 1970's has been so crucial, the price support program has had a strong influence on dairy policy for several decades. Consider that the average market price for manufacturing grade milk has exceeded the support price by more than 10 cents in only 15 of the past 30 years [9]. We think the evidence clearly shows that the current dairy situation is more a product of the price support program than of other dairy programs. For this reason, we have chosen to emphasize it here. Other programs are discussed only to the extent that they are affected by the support program.

ACCOMPLISHMENT OF OBJECTIVES

The Agricultural Act of 1949, which created the dairy price support program, specified three objectives: (1) to assure an adequate supply of pure and wholesome milk to meet current needs, (2) to reflect changes in the cost of production, and (3) to assure a level of farm income adequate to maintain production capacity sufficient to meet anticipated future needs [4]. Other objectives which are often mentioned for dairy policy, which apply to Federal milk orders and at least indirectly to the support program, are: (1) to stabilize prices and production, and (2) to increase efficiency and orderly marketing. We now provide some assessment of the extent to which each of these five objectives were accomplished during the 1970's.

Adequate supply

In the 1970's production was at times inadequate and at other times excessive. USDA removals on a milk equivalent basis varied from 1.2 to 7.3 billion pounds during 1970-79 (table 1). They will be over 8 billion pounds this year. Net Government expenditures varied from \$31.4 to \$709.8 million during 1970-79 [1]. Expenditures were about \$1.3 billion for the fiscal year ending September 30, 1980. We have seen a reversal this year of a long-term downward trend in cow numbers. During 1973 and 1974, imports of dairy products were greatly expanded due to high retail dairy product prices caused by low levels of domestic milk production. The support program cannot be given high marks for generating only an adequate supply.

Federal orders also have the objective of assuring an adequate supply of milk, but many milk orders have excessive milk supplies. This can be attributed to price support policy. Federal order price increases since 1968 have been induced by price support actions [9]. While differentials applied to the basic formula price in Federal orders have been constant, the basic price, which is directly influenced by support price actions, increased 147 percent during 1969-79. Federal orders cannot balance production and consumption in the face of price support policies which generate excessive supplies [3].

Cost of production

Costs of milk production on a national basis are available only for 1974-79. During this time, total cost of production increased from \$9.01 in 1974 to \$10.50 in 1979 or by 16.5 percent [5]. Support prices were increased over 50 percent during this period. Other evidence that support prices did not reflect changes in production costs are con-

tained in table 2. Net income from dairy farming varied from $-\$0.62$ per hundredweight in 1974 to $\$1.89$ in 1980. It appears that price supports were low relative to production costs in 1973-75 and were high relative to production costs in 1978-80.

Level of income

During the 1970's, the support program has not prevented dramatic swings in dairy farmers' income. We have seen years when income was inadequate and others when it was more than adequate (table 3). Family income from dairying in the past decade probably reached its low point in 1974. In that year, the $\$4,842$ family income from dairying for a farm with 48 cows was below the threshold poverty level for a family of four ($\$5,038$). Off-farm income may have brought the average dairy farm family up to or above the poverty threshold. At the other extreme, family income from dairying in 1980 for a 54 cow herd ($\$28,983$) will exceed the income of the average nonfarm family. This farm-nonfarm difference would be wider if off-farm income were added. The price support program has not achieved its dairy farmer income goal during much of the 1970's.

Price and production stability

Milk prices trended up throughout the 1970's (table 1). When adjusted for inflation, the average price for manufacturing milk increased 26 percent. There were only brief periods of price stability. Production varied from 115.3 to 123.6 billion pounds and there were two production cycles during the 1970's. Production will exceed 127 billion pounds this year. A more stable production would have been desirable from a public standpoint.

Retail prices for dairy products during the 1970's were slightly more stable than were the prices for all food and the consumer price index (CPI). The increase in the retail dairy price index during 1969-79 was also slightly less than the increase for all food and for the CPI. The minutes of labor required to purchase dairy products during the 1970's were relatively constant.

Efficiency

The price support program has probably induced desirable technical change. In recent years, however, it has been responsible in large measure for the commitment of excessive resources to dairying. Prices have been set above longer run equilibrium levels.

In addition to the current excessive levels of production overall, there are efficiency problems related to the location of milk production. The cost-price changes during 1974-80 have provided a strong incentive for increased milk production in all regions [2]. Increased production outside of the Upper Midwest has resulted in some costly movements of excess grade A milk to manufacturing facilities; for example, from Pennsylvania to Minnesota and from California to Utah. There has also been construction and expansion of facilities to process excess grade A milk into manufactured products in areas which will not be able to support those facilities when production more nearly matches consumption. There has essentially been no change in price relationships among regions during 1974-80, just a large increase in the level of price [2]. The price support program is thus responsible for most of the increased spatial inefficiency.

Summary

The 1970's was a decade in which there was low achievement in dairy policy objectives. We do not know the extent to which the policy objectives would have been achieved in the absence of the price support program. While we cannot blame the policy successes or failures on that program alone, it must bear some responsibility for the less than desired performance in the dairy sector. Beyond this, the support program was clearly unable to cope with the many shocks that adversely affected achievement of objectives.

REASONS FOR LOW ACHIEVEMENT

There are probably many factors that contributed to the low achievement of dairy policy objectives in the 1970's. We identify some of these factors for purposes of assessing obstacles to goal accomplishment in the 1980's.

Natural causes

During the 1970's, there were droughts, corn blights, shortfalls of grain production in other countries, and other uncontrollable events which introduced shocks to the dairy sector. There is no indication that these shocks will be less frequent or less severe in the 1980's.

Other agricultural policy

Farm programs for grains and some other commodities were dramatically changed in the 1970's. The new programs were more market-oriented and introduced more volatile feed prices to the dairy sector. Commodity price relationships among commodities likewise became more variable. Shocks to the dairy sector from this source may be more severe in the 1980's.

Macroeconomic policies

Foreign currency exchange rates, inflation, two recessions, tax policy, trade policies, energy policies, and the like have all had major impacts on the dairy sector. In fact, these events probably had greater impacts on the dairy industry than did dairy programs. After the wild 1970's, it is hard to visualize another 10 years of such dramatic change. But we may have more crises, disruptions, and macroeconomic policy changes in the 1980's than in the 1970's. The dairy industry has traditionally focused almost exclusively on dairy programs and policies. Events of the 1970's suggest that the industry will need to broaden its interest to include policies in other sectors of agriculture and to those relating to the general economy.

Parity formula

The current parity formula which guides price support decisions does a poor job of reflecting forces which affect production and consumption. For example, there is poor correspondence between the cost structure of dairy farms and items in the parity index. Feed costs are about half of the total cost of milk production, but are given a weight of only 12 percent in the parity index. Such incongruities lead to poor correspondence between a particular parity percentage and a particular supply-demand relationship in the dairy sector. Indeed, under varying conditions, the support price as a percentage of parity

which would balance production and consumption may range from 70 to 85 percent. The range could even be greater.

If the parity formula was only a guide to support price decisions, the current procedure might have better odds of achieving desired performance. But, parity prices are value-laden and contain strong political undercurrents. Even if decisionmakers had greater flexibility in setting support prices, it may be politically infeasible to set them at 70 or at 85 percent of parity, if such levels were appropriate. The disparity between the parity formula and factors that affect the dairy sector will not narrow in the 1980's.

Lack of flexibility

During much of the 1970's, minimum price supports at 80 percent of parity were mandated by Congress. Some have felt that program results would have been more favorable had there been greater flexibility in setting support prices. This may be true. The results for the last 25 years, however, do not indicate whether the Congress or the Secretary of Agriculture is in a better position to exercise an increase in flexibility. In some respects, the question turns on whether human judgment or mechanical formulas can do the better job in setting support prices. Perhaps a combination of human judgment which is disciplined by a trigger mechanism of the type under consideration this year deserves more attention. Given the adjustment lags in the dairy sector and the shocks from outside the sector, it is unreasonable to suppose that any system of setting price supports will approach perfection.

CONCLUDING COMMENTS

Most of the factors which gave rise to problems in achieving dairy policy objectives in the 1970's will carry over into the 1980's. As a consequence, there is no basis for believing that performance of the dairy sector will be improved in the 1980's if current programs are continued without change. In addition, the current public mood demands that programs have a greater market orientation. We believe there will be a continuing need for dairy programs which will accomplish public policy objectives. The challenge to design dairy programs that effectively cope with instability while increasing the exposure of prices to market forces will be formidable. But, it is time to search for new approaches which better achieve policy objectives in the face of instability and shocks.

There is a strong interrelationship among dairy programs. This is recognized to some extent, but administration of the programs will require greater coordination. The administration of dairy programs will also require greater knowledge of how nondairy policies and external events will interact with dairy programs. Dairy programs have always seemed unduly complex and mysterious to those outside of the dairy establishment. Now, the tables are turned. The dairy establishment will have to gain a better understanding of what makes the rest of the economy tick.

We strongly believe that the dairy price support program dominates other dairy programs. This has been true in the past and will continue to be the situation in the 1980's. The design of that program must be carefully examined and modified to insure that 10 years from

now we will be giving high marks to dairy policy and programs in the 1980's.

TABLE 1.—DAIRY PRODUCTION, CONSUMPTION, REMOVALS, AND PRICES, 1969-79¹

	In billion pounds			Manufacturing milk		Retail dairy price index ⁵
	Production	Consumption ²	Removals ³	Average price	Percent of parity ⁴	
1969	116.1	113.2	4.5	\$4.45	86	106.7
1970	117.0	113.2	5.8	4.70	85	111.8
1971	118.6	113.9	7.3	4.86	82	115.3
1972	120.0	115.9	5.3	5.08	80	117.1
1973	115.5	115.5	2.2	6.20	91	127.9
1974	115.6	114.0	1.3	7.13	78	151.9
1975	115.3	115.4	2.0	7.63	84	156.6
1976	120.6	116.7	1.2	8.56	82	169.3
1977	122.7	118.2	6.1	8.70	80	173.9
1978	121.6	120.4	2.7	9.65	80	185.6
1979	123.6	122.6	2.1	11.10	76	207.1

¹ Source: E.S.C.S. "Dairy Situation", U.S.D.A.

² Domestic disappearance for civil consumption.

³ Milk equivalent removals by U.S.D.A.

⁴ Average manufacturing milk price during marketing year as a percentage of parity equivalent.

⁵ Retail price index for dairy products, 1967=100.

TABLE 2.—PRICE, COSTS AND INCOME PER HUNDREDWEIGHT OF MILK, AVERAGE U.S. DAIRY FARM, 1974, 1977, AND 1980¹

Item	1974	1977	1980 ²
Milk price received	\$8.39	\$9.77	\$13.22
Total cost	³ 9.01	10.55	13.07
Less: income from cull cows and calves	NA	(.85)	(1.74)
Total net cost	9.01	9.70	11.33
Net income	(.62)	.07	1.89
Additions to net income:			
Unpaid operator and family labor	1.04	1.50	1.81
Management ³	.56	.69	.86
Family income from dairying	.98	2.26	4.56

¹ Source: Economic Research Service, "Cost of Producing Milk in the United States," Committee on Agriculture, Nutrition, and Forestry, U.S. Senate, committee print for 1976, 1979, and 1980.

² Projected.

³ Total cost excluding land allocation plus land allocation for dairy farm lots based on current land values. Feed prices are based on prices received by farmers.

⁴ Adjusted indirectly through inclusion as hundredweights of milk produced in 1974.

⁵ Based on 7 percent of dairy sales in 1974 and 7 percent of total cost in 1977 and 1980.

TABLE 3.—DAIRY FARM PRODUCTION AND INCOME FOR 3 HERD SIZES, UNITED STATES, 1974, 1977, 1980

Item	1974	1977	1980 ¹
Milk production/cow (hundredweight/year) ²	102.93	111.94	117.92
Herd size (number of cows):			
Small	20	20	20
Average ³	48	50.5	53.9
Large	80	80	80
Gross dairy sales (amount/year): ⁴			
Small	\$17,271	\$23,776	\$35,282
Average	\$41,452	\$60,035	\$95,084
Large	\$69,087	\$95,104	\$141,127
Family income from dairying (amount/year): ⁵			
Small	\$2,017	\$5,060	\$10,754
Average	\$4,842	\$12,776	\$28,983
Large	\$8,070	\$20,239	\$43,017

¹ Projected.

² Source: Dairy Situation, ESCS, USDA.

³ Based on 1974 "Cost of Producing Milk in the United States" and adjusted to other years by the reported number of cows and number of farms. Herd sizes are for commercial farms and not all farms reporting milk cows.

⁴ Income from the sale of milk, cull cows, and calves.

⁵ Family income from dairying is computed as the per hundredweight family income from dairying in table 1 multiplied by the production per cow and number of cows per farm. The family income from dairying does not include income from off-farm sources.

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