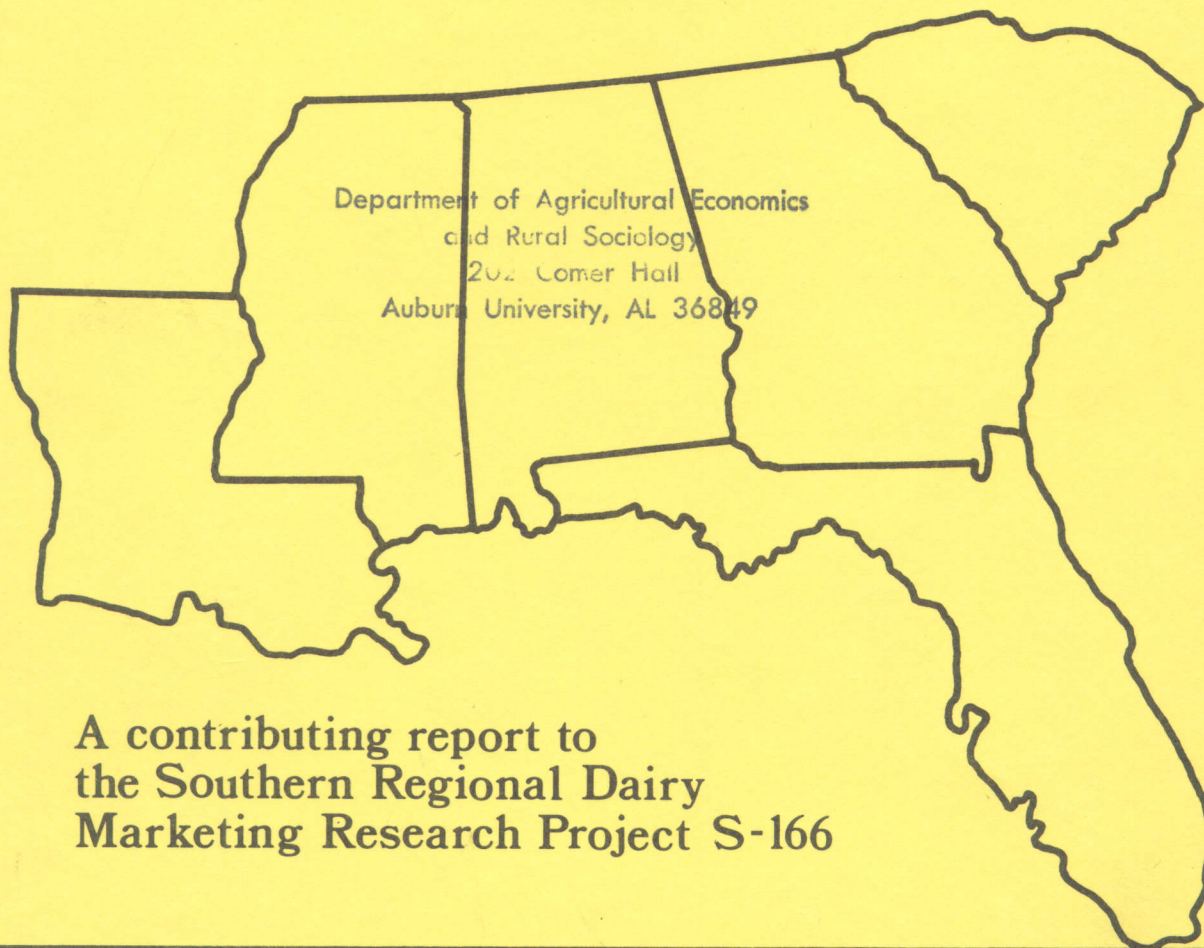


The 1982 Dairy Legislation

—Impact on Six Southern States—

—Some Program Alternatives—



A contributing report to
the Southern Regional Dairy
Marketing Research Project S-166

*Department of Agricultural Economics and Rural Sociology
Alabama Agricultural Experiment Station
Auburn University, Alabama
Agricultural Economic Series 34*

January 1983

CONTENTS

	Page
Preface	ii
Summary and Conclusions	iii
Background	iii
Scope	iv
Conclusions	iv
Introduction	1
Purpose and Procedure	5
Milk Production and Marketing in the Southeast	7
Milk Production	7
Marketings	12
Supply Adequacy	14
Effect on Consumers and Producers of the Assessment Versus a Support Price Reduction	20
Consumer Considerations	20
Consumer as User	20
Consumer as Taxpayer	24
Producer Considerations	25
Producer Supply Responses	26
Regional Impacts Differ	28
Dairy Price Alternatives for the Southeast	31
Program Impacts	32
Impacts on the Southeast	34
Some Policy Alternatives to the Assessment Plan	43
Cull Cow Incentive Program	48
A Modified Base-Excess Plan	51
Literature Cited	60
Appendix	61

PREFACE

The 1982 dairy legislation provides for deductions from dairy farmers' marketings of milk to help pay the high and growing costs of the price support program and to bring about reductions in milk supply. Dairy leaders in several southern states objected to this approach to reduce supply because no milk surplus problem exists within this region. The impact was seen to be a price reduction in an area where milk supply is already short. Most milk marketed in the South is Grade A eligible for fluid use with most of it used in fluid products. Practically no manufactured products produced in the region are removed from the market through price support programs.

Discussions between state dairy leaders and several university dairy marketing economists led to a meeting in Atlanta, Georgia, in October 1982 to discuss the impact of the legislation on the dairy industry in the South. At that meeting, the authors agreed to make an analysis of the legislation and alternative programs.

The study area selected was Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina. Common milk marketing characteristics among the six-state area suggest that the 1982 dairy legislation or alternative programs would have similar impacts.

Since initiation of this study, the assessment program has been contested by dairy farmers in Federal District Court. However, the impacts on producers and consumers in the Southeast of the assessments and alternatives presented in this study remain as relevant dairy policy issues.

This report is provided to dairy leaders, policy makers and others interested in appraising the impact of dairy program alternatives on the Southeast.

SUMMARY AND CONCLUSIONS

Purposes of this study were to analyze the impact of the 1982 dairy legislation on the Southeast and to present some program alternatives. The summary and findings are reported in three sections: background for the study, scope and conclusions.

Background

In response to growing dairy surpluses and support price program costs exceeding \$2 billion a year, Congress in September 1982 passed legislation authorizing the Secretary of Agriculture to levy an assessment of \$0.50 per hundredweight on all milk marketed effective October 1, 1982. An additional assessment of \$0.50 was authorized effective April 1, 1983, subject to refunds for producers who reduced marketings.

Secretary Block announced that the initial assessment was to become effective December 1, 1982. Despite the near universal recognition that changes were needed in the dairy price support program, both the new legislation and the Secretary's decision to implement the assessment drew criticism from many fronts. Legal action was attempted in a number of states. A civil suit was brought in December 1982 in Federal Court by South Carolina dairy interests. Groups representing dairy farmers in one-third of the country joined South Carolina in the case against the government as interveners.

In January 1983 after a hearing in Federal Court in South Carolina, a temporary injunction was ordered barring the collection of the assessment from milk producers. In the interim, the industry, Congress and the

Administration have been afforded time to develop alternatives to the assessment plan. This study, which was begun only a few days after announcement of the assessment program, addresses the assessment issue and some alternatives relevant to the dairy industry in the Southeast.

Scope

The study focuses on a six-state area in the Southeast--Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina. The dairy industry in these six contiguous states has a number of similar characteristics. National impacts of the assessment program are not projected nor are those of alternative programs. While this focus limits some of the conclusions that can be drawn to a relatively narrow area of the country, it points out the uniqueness of the industry in the region and the unequal impact of the assessment program on various producing areas.

Only short-run effects of the current legislation and alternatives are projected. Longer term impacts of the assessment program on the dairy industry are likely to be greatly magnified.

Conclusions

There are three broad conclusions drawn from this study and a number of specific findings supporting the conclusions.

I. The dairy industry in the Southeast has unique characteristics with respect to milk production, consumption and marketing. Because of these characteristics, the assessment program and some alternative plans will have much more dramatic consequences on the Southeastern industry than on other producing regions.

A. Milk production costs tend to be higher in the Southeast.

- B. While blend prices are higher in the region, higher costs lead to net returns from dairying that are lower than returns in most other regions.
- C. Production in the region has increased at a slower rate since 1978 than nationally.
- D. Virtually all milk produced in the region is Grade A eligible for use in the fluid market.
- E. Hard manufactured products (Class III) represent only a small fraction of marketings in the region. Few, if any, sales of these products are made to the CCC.
- F. The Southeast is a milk deficit area with respect to total dairy products consumption. In two of the six states, production falls short of fluid use.

II. Based on economic logic, direct support price cuts are a superior alternative for both producers and consumers than an assessment program.

- A. Under an assessment program, consumer prices remain constant. If so, no increase in consumption would occur. However, negotiated producer Class I prices to handlers may increase, resulting in higher consumer prices.
- B. A decrease in the support price of \$1.00 compared to a \$1.00 assessment would reduce manufactured product prices by about seven percent and stimulate an increase in consumption of about three percent. Fluid consumption would also increase slightly--less than one percent if the support price was reduced by \$1.00.

- C. The impact of a \$1.00 assessment on producer incomes would be similar to that of a \$1.00 price reduction. Income and prices would be somewhat higher in the case of a price cut, since quantity demanded of milk products would increase.
- D. CCC purchases and stocks would decline faster with a price reduction, since it would increase consumption and decrease production.
- E. The major advantage of the assessment program would be a reduction in government program costs. Benefits to consumers as taxpayers would be negligible. Benefits to consumers as users of milk would be zero, or negative if negotiated Class I prices were increased following the implementation of the assessment.

III. In addition to a straightforward reduction in the support price, there are a number of program options preferable to the assessment program. Among the alternatives considered were:

- A. Maintain the Class I price, but decrease Class II and III prices \$1.00. This alternative would result in the most production, price and income stability in the Southeast of all programs studied. Aggregate production would decrease only 21 million pounds, while producer income would decrease \$14 million. Blend prices would decline an average of \$0.17 per hundredweight. With lower Class II and III prices, milk product consumption increases. Such a program would be advantageous to Southeast milk producers since they would not be penalized for producing needed milk for Class I uses.

- B. Decrease Class II and III prices \$1.00 (and \$1.50) and decrease Class I price \$0.50 per hundredweight. These options result in larger reductions in production (66 and 73 million pounds), producer income (\$45 and \$51 million) and blend prices (\$0.55 and \$0.63 per hundredweight). From the viewpoint of producers in the Southeast, these options, where Class I price is reduced, along with Class II and III prices, are less attractive than the first phase of the assessment plan, but more attentive than the full application of the assessment program.
- C. Assess \$0.50, decrease support price \$0.50 and pay to cull cows. This program could effectively decrease production in a short period and reduce government costs for buying surplus milk products. Blend prices would be reduced \$0.79 and dairy income reduced \$69 million. Problems in administering a cow culling plan could greatly reduce its effectiveness. There is a danger that the impact on reducing milk production would be short-term and not produce the desired longer-term supply adjustments. Also, an increase in dairy cow culling would have an adverse producer price and income effect on the beef cattle industry.
- D. Base-excess plan with assessment for producing excess milk. There are many versions of base plans. Only one was considered in the study. Each producer would be assigned a base equal to 96 percent of the dairy farmer's marketings in the last marketing year. For production above the base and market needs, the producer would pay an assessment. The support price would remain at \$12.80 (3.5% bf)

but would be adjusted upward as the supply-demand balance improved. Producers in the high utilization markets such as Florida would not be penalized. If producers marketed only their base, which is an unlikely possibility, income loss would be relatively small.

Any program that reduces producer prices for milk will reduce producer income and milk supply. However, some programs are more equitable than others on all producers. An assessment program appears to be inequitable by endangering supply adequacy in those areas where milk is produced primarily for the fluid milk market, such as the Southeast. An assessment program would not serve the public interest, as price reductions cannot be passed on through the marketing channel to consumers. Milk price policy designed to adjust milk supply should also affect the consumer side of the market. Therefore, programs that affect consumer prices, as well as producer prices, are more in line with sound economic principles of supply and demand relationships.

Programs that alleviate surpluses through consumption would probably generate more taxpayers support because they would maximize consumers' welfare. Therefore, programs that provide for support price reductions appear to be more consistent with decreasing production in surplus regions and encouraging consumption of surplus milk products through lower consumer prices. Surplus alleviation through discouragement of milk production in the surplus regions of milk production and encouragement of consumption through nationwide product price reduction offer the greatest promise of distributing the adjustment on the basis of contribution to the problem while providing for the greatest consumer satisfaction.

THE 1982 DAIRY LEGISLATION

- IMPACT ON SIX SOUTHERN STATES -

- SOME PROGRAM ALTERNATIVES¹ -

Dale H. Carley, Lowell E. Wilson, Wayne M. Gauthier,
and Harold M. Harris²

Over the past four years, the United States dairy industry has experienced record increases in milk production resulting in large holdings of surplus dairy products by the Commodity Credit Corporation (CCC). Since the end of 1978, milk production has risen 11.1 percent from 121.5 billion pounds to an estimated 135.2 billion pounds in 1982. With domestic consumption rising only modestly, price support purchases amounted to more than 10 percent of production in 1982. On October 1, 1982, about 16 billion pounds of milk equivalent were in CCC holdings of supported products. The near-term outlook is for the amount of government held dairy stocks and program costs to continue to increase.

To alleviate the problems of growing price support costs and public criticism, Congress enacted a new dairy program in September 1982. The 1982 legislation provides for maintenance of the existing support price of \$13.10 per hundredweight of milk. Also, the Secretary of Agriculture was

¹ This report contributes to the Southern Regional Dairy Marketing Research Project S-166, The Impact of Changing Costs, Institutions and Technology on the Southern Dairy Industry.

² Professor, Department of Agricultural Economics, University of Georgia; Professor, Department of Agricultural Economics and Rural Sociology, Auburn University; Assistant Professor, Department of Agricultural Economics and Agribusiness, Louisiana State University Agricultural Center; and Professor, Department of Agricultural Economics, Clemson University.

authorized to apply a 50 cents per hundredweight deduction on all milk marketed by farmers. Initiation of the 50 cents deduction was scheduled to begin on December 1, 1982. In addition, the 1982 legislation authorized the Secretary to apply a second 50 cents deduction to begin in April 1983. Revenues from the dairy farmer assessments are to be used to offset some of the costs of the dairy price support program.

The initial deduction would reduce dairy farmers' income about three to four percent depending on price levels in various regions of the country. The second 50 cents deduction in April 1983 bringing the total assessment to \$1.00 per hundredweight, will cause dairy farmers to experience a six to eight percent loss in revenue. However, there are provisions in the April deduction for refunds to farmers who adjust production downward by the fully prescribed percentage from their two-year average that began October 1, 1980. Refunds would be paid annually (1).

In December 1982 in South Carolina, the Attorney General, the Consumer Advocate, the Commissioner of Agriculture, the Farm Bureau and three dairy farmers brought suit against the U.S. Secretary of Agriculture asking that the USDA be barred from collecting assessments from producers. After hearing testimony and arguments on behalf of the plaintiffs (including interveners representing dairy farmers in about 18 states) and the USDA, Federal Judge Matthew Perry issued an injunction on January 10, 1983, forbidding the making of deductions from producers' milk checks until further notice (2). In the meanwhile, government purchases of supported milk products continue to grow.

The Agricultural Adjustment Act of 1949 requires the Secretary of Agriculture to support the price of milk at 75 to 90 percent of parity. Temporary legislation in 1977 and 1979 raised the minimum support level to 80 percent of parity and required semi-annual adjustments to reflect changes in prices paid by farmers. Milk production increased substantially. In February 1981, in the first act of the 97th Congress, legislation was passed to eliminate the support price increase scheduled for April 1981.

Since that time, the support price has remained at \$13.10 per hundred-weight, which was 69.1 percent of parity in the third quarter of 1982. Still, milk production has increased and will likely continue to increase into 1983 because of the productive capacity inherent in the largest replacement herd on record, low feed prices and poor alternative opportunities outside the milk business.

The USDA supports milk prices through purchases of specified manufactured milk products by the CCC. Prices paid for butter, cheese and non-fat dry milk, the supported products, are calculated to return the support price to producers. However, adjustments in the "make allowance" result in a pay price that is often different from the support price. The pay prices become the Minnesota-Wisconsin manufacturing milk prices (M-W price). Under conditions of shortages the M-W price is greater than the support price. Conversely, under conditions of surpluses the M-W price is lower than the support price. The M-W price has been below the support price for many months. The support price undergirds prices of both manufacturing grade (Grade B) and fluid (Grade A) milk.

Purchase of manufactured dairy products by the CCC is not national in scope. Most government purchases occur in a few of the major milking producing states where farmers have expanded production in excess of commercial market needs. In some of these areas the government, as the residual buyer, is also the major buyer. In some cases, direct sales to the government are the most profitable because such sales eliminate the need for a commercial sales organization. By contrast, in the South most marketings of milk are for fluid uses.

Utilization of milk in the six-state area of Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina for the 12-month period of July 1, 1981 through June 30, 1982, was approximately 81 percent Class I, 8 percent Class II and 11 percent Class III. Regardless of grade, only Class III products can be sold to CCC at the announced price. The volume of these manufactured products in the six states sold to the CCC is not reported, but is known to be very small. Within this area, the supply-demand balance for milk is tight and in many local markets, particularly in Florida and Alabama, milk is regularly imported to meet fluid market needs. Essentially no milk is used for manufacture other than for soft products (Class II) such as ice cream and cottage cheese in the several federal order markets in the region.

Prices received for milk at the farm level tend to be higher in the South, but so are production costs. Studies by the USDA indicate that in the South costs were higher and net returns lower than other regions in 1979, 1980 and 1981 (3).

With the exception of feed, interest and fuel costs, all other major items of milk production costs continued to rise for Southern dairy farmers in 1982. However, prices received by farmers for milk have declined about 30 cents per hundredweight between 1981 and May-August 1982. Another three to four percent reduction in milk prices from the impending 50 cents assessment would further threaten the economic well-being of dairy farmers in the region. To offset as much as possible the price loss due to the 50 cents assessment, producer cooperatives will be under pressure to announce price increases to milk processors. Thus, it is possible that the impact of the producer assessment in the South would be lower effective prices to producers, higher raw milk prices to processors and higher fluid milk product prices to consumers.

PURPOSE AND PROCEDURE

This study was undertaken to develop economic information about the effects of program changes on the dairy industry in the six southern states of Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina. These states were selected for analysis since they are contiguous and have many common milk production and marketing characteristics. Specifically, the objectives were:

1. To measure the impact of the 1982 dairy legislation on the dairy industry in the six states, including effects on milk supply, prices and dairy farmer income, as well as consumer demand.

2. To present program alternatives and to measure the impact of these alternatives on dairy farmers and consumers, with emphasis on producer prices and income.

National impacts of the assessment program are not projected nor are those of alternative programs. While this focus limits some of the conclusions that can be drawn to a relatively narrow area of the country, it does point out the uniqueness of the dairy industry in the region and the unequal impact of the assessment program on various milk producing areas.

The report was developed using information from several sources including USDA and land-grant universities. In developing the three major parts of the report, there is some repetition. This serves to clarify and bridge the sections of the report. The report is presented in the following sections: 1) an overview of milk production and marketing in the Southeast; 2) an identification of gains and losses to consumers and producers of the assessment versus a support price reduction; and 3) analysis of selected dairy policy alternatives for the Southeast.

MILK PRODUCTION AND MARKETING IN THE SOUTHEAST

Dairy farming is a widespread enterprise and a major contributor to farm income in each of the six Southeastern States of Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina (Southeast). In 1982, total milk production in these states amounted to 6.49 billion pounds which was 4.7 percent of national production (Table 1). In the Southeast, gross receipts from marketings of milk, plus the value of milk used on the farm, amounted to one billion dollars in 1981 (4).

Milk Production

During the past decade, the number of dairy cows in the Southeast declined 27 percent to 626 thousand cows in 1982 (Table 2 and Figure 1). Reduction in cow numbers occurred in each of the six states with the largest cow losses occurring in Alabama, Louisiana and Mississippi. The number of dairy cows in Florida was relatively unchanged. Most of the decline in milk cows resulted from the exit of small dairy herds and farm families discontinuing the practice of milking a few cows for home consumption (5).

Offsetting the decline in milk cows was an increase in average production per cow resulting in relatively stable total milk production in the Southeast (Figure 2). Since 1970, average annual production per cow rose 40 percent to 10,363 pounds in 1982 with production above 11,000 pounds per cow in Florida and South Carolina.

Estimated production of 6.49 billion pounds in 1982 was the highest of the past decade increasing 188 million pounds or three percent since 1978. While milk production in the Southeast was increasing three percent, national milk production rose 11 percent from 121.6 billion pounds in 1978

Table 1. Milk Production in the United States by Regions with Comparisons, 1978-1982.

Region	1978	1979	1980	1981	1982	1982 as percent of U.S. total percent	Increase in milk production from:				
							1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1978 to 1982
-----million pounds-----						-----million pounds-----					
Northeast	24,839	25,238	26,139	26,820	27,370	20.2	399	901	681	550	2,531
Lake States	35,134	35,825	36,885	37,869	38,330	28.3	691	1,060	984	461	3,196
Corn States	15,562	15,465	15,994	16,446	16,713	12.4	-97	529	452	267	1,151
Northern Plains	5,147	5,013	5,253	5,517	5,458	4.0	-134	240	264	-59	311
Appalachian	8,199	8,163	8,415	8,590	8,732	6.4	-36	252	175	142	533
Southeast ^a	6,299	6,318	6,375	6,450	6,487	4.7	19	57	75	37	188
Southern Plains and Arkansas	5,252	5,172	5,480	5,608	5,750	4.3	-80	308	128	142	498
Mountain	5,419	5,589	6,131	6,690	7,120	5.4	170	542	559	430	1,701
Pacific	15,593	16,483	17,688	18,481	19,051	14.1	890	1,205	793	570	3,458
Alaska and Hawaii	165	163	165	163	158	.1	-2	2	-2	-5	-7
U.S.	121,609	123,429	128,525	132,634	135,169		1,820	5,096	4,109	2,535	13,560

^a Includes Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina.

Source: Appendix Table 1.

Table 2. Milk Production, Marketings, and Volume Approved for Fluid Use, Six Southern States, Selected Years 1970-1982.

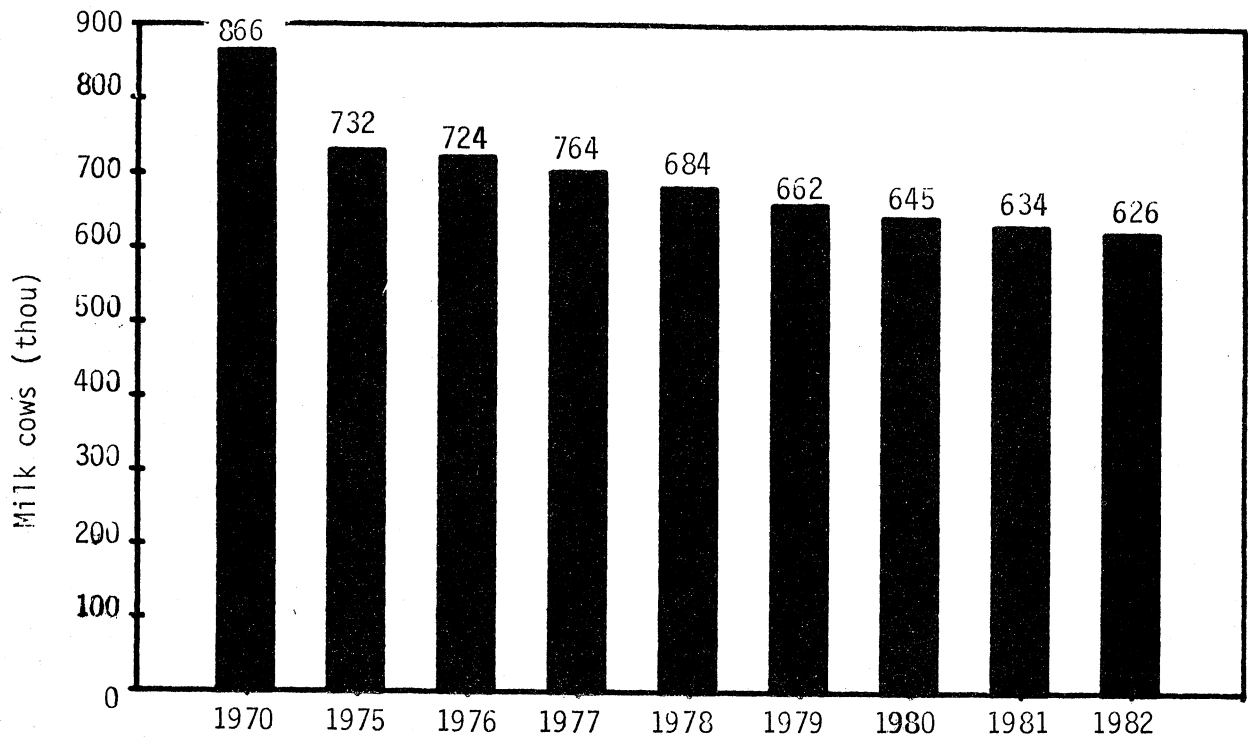
State and year ^a	Milk cows thou	Average production per cow lb	Milk production mil lb	All milk sold to plants & dealers mil lb	Milk marketed approved for fluid use (Grade A)	
					Volume mil lb	Percentage percent
Alabama						
1970	122	6,687	816	735	713	97
1975	90	7,622	686	635	622	98
1976	85	8,024	682	630	617	98
1977	80	8,550	684	635	622	98
1978	76	8,303	631	588	576	98
1979	73	8,301	606	570	558	98
1980	68	8,971	610	575	564	98
1981	63	9,238	582	550	539	98
1982	60	9,330	563			
Florida						
1970	191	8,592	1,641	1,525	1,525	100
1975	197	9,929	1,956	1,880	1,880	100
1976	201	10,065	2,023	1,975	1,975	100
1977	198	10,066	1,993	1,945	1,945	100
1978	193	10,218	1,948	1,925	1,925	100
1979	188	10,617	1,996	1,970	1,970	100
1980	187	10,845	2,028	2,009	2,009	100
1981	189	11,016	2,082	2,069	2,069	100
1982	190	11,110	2,109			
Georgia						
1970	146	8,096	1,182	1,125	1,125	100
1975	129	9,465	1,199	1,170	1,170	100
1976	129	10,101	1,279	1,255	1,255	100
1977	129	10,085	1,288	1,260	1,260	100
1978	129	10,140	1,305	1,280	1,280	100
1979	130	10,292	1,338	1,315	1,315	100
1980	130	10,515	1,367	1,346	1,346	100
1981	130	10,738	1,396	1,376	1,376	100
1982	130	10,820	1,410			
Louisiana						
1970	164	6,640	1,089	1,020	1,020	100
1975	136	7,750	1,054	1,010	1,010	100
1976	137	7,942	1,088	1,045	1,045	100
1977	132	8,250	1,089	1,050	1,050	100
1978	128	8,305	1,063	1,025	1,025	100
1979	121	8,446	1,022	985	985	100
1980	114	8,887	1,012	975	975	100
1981	107	9,280	993	955	955	100
1982	102	9,410	957			

Table 2, (cont'd)

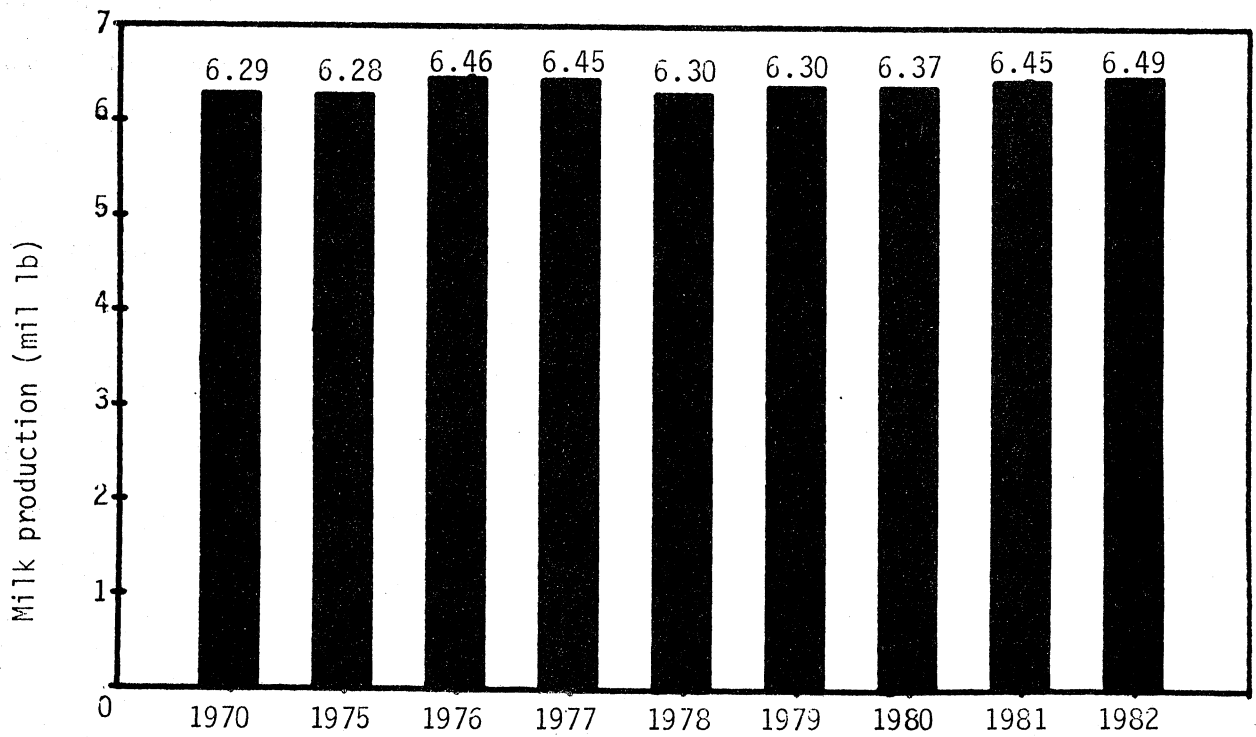
State and year ^a	Milk cows thou	Average production per cow lb	Milk production mil lb	All milk sold to plants & dealers mil lb	Milk marketed approved for fluid use (Grade A)	
					Volume mil lb	Percentage percent
Mississippi						
1970	179	5,860	1,049	960	874	91
1975	122	7,180	876	840	806	96
1976	116	7,431	862	830	797	96
1977	112	7,661	858	830	788	95
1978	106	7,887	836	810	770	95
1979	100	8,140	814	790	750	95
1980	98	8,337	817	795	763	96
1981	97	8,771	845	825	792	96
1982	96	9,100	873			
South Carolina						
1970	64	8,000	512	476	--	--
1975	58	8,828	512	481	481	100
1976	56	9,375	521	492	494	100
1977	53	9,906	523	496	496	100
1978	52	9,865	516	492	492	100
1979	50	10,480	524	495	495	100
1980	48	11,271	541	515	515	100
1981	48	11,500	552	525	525	100
1982	48	11,970	575			
Southeastern States						
1970	866	7,262	6,289	5,841	--	--
1975	732	8,583	6,283	6,016	5,969	99
1976	724	8,916	6,455	6,227	6,183	99
1977	704	9,162	6,450	6,216	6,161	99
1978	684	9,209	6,299	6,120	6,068	99
1979	662	9,517	6,300	6,125	6,073	99
1980	645	9,884	6,375	6,215	6,172	99
1981	634	10,174	6,450	6,300	6,256	99
1982	626	10,363	6,487			

^a Preliminary for 1982.

Source: Milk Production, Disposition, Income. SRS. USDA. various issues.



**FIGURE 1. MILK COWS IN SIX SOUTHERN STATES
SELECTED YEARS. 1970-1982.**



**FIGURE 2. MILK PRODUCTION IN SIX SOUTHERN
STATES SELECTED YEARS. 1970-1982.**

to 135.2 billion pounds in 1982. Thus, national milk production increased at a rate almost four times greater than in the Southeast. Nationally, most milk production increases were in the major dairy states with the largest increases occurring since 1979. Between 1978 and 1982 milk production declined in only five states in the continental United States; two of the states were in the Southeast--Alabama and Louisiana (Appendix Table 1).

Milk production trends vary in individual Southeastern States. Since 1978, production in Florida increased 161 million pounds (8.3 percent); Georgia, 105 million pounds (8.1 percent); South Carolina, 59 million pounds (11.1 percent); and Mississippi, 37 million pounds (4.4 percent). Milk production decreased in Louisiana 106 million pounds (10.0 percent) and in Alabama 68 million pounds (10.9 percent). Even though milk production in Mississippi has increased recently, production since 1970 has declined over 17 percent.

Within the region, 19,300 farm operations reported a total of 634,000 milk cows in 1981 (Table 3). Almost 93 percent of the milk cows were in herds larger than 50 cows and 73 percent of cows were in herds larger than 100 cows. The largest herds were in Florida and Alabama. Three-fourths of the operations reported less than 29 milk cows per herd, but this represented only 4.7 percent of all milk cows in the region.

Marketings

Practically all milk production in the Southeast is produced on commercial dairy farms and is sold to plants and dealers. In 1981, 97.6 percent of production was marketed. This amounted to 6.1 billion pounds, up

Table 3. Number of Operations and Milk Cows by Herd Size in the Southeast, 1981.

State	item	Dairy herd size (head)			
		1-29	30-49	50-99	100+
		-----number-----			
Operations					
OPERATIONS WITH MILK COWS:					
Alabama	4,000	3,572	52	168	208
Florida	2,000	1,600	a	a	400
Georgia	3,100	2,024	56	369	641
Louisiana	4,000	2,912	180	488	420
Mississippi	3,800	2,698	251	521	330
South Carolina ^b	2,400	1,819	77	218	286
Total	19,300	14,625	616	1,764	2,295
Cows					
MILK COWS:					
Alabama	63,000	9,700	2,100	13,200	38,000
Florida	189,000	2,800	a	a	186,200
Georgia	130,000	2,900	2,200	25,700	99,200
Louisiana	107,000	4,000	7,500	32,000	63,500
Mississippi	97,000	7,900	9,900	36,600	42,600
South Carolina ^b	48,000	2,200	1,800	8,800	35,200
Total	634,000	29,500	23,500	116,300	464,700

^a Reported in the other groups.

^b Distribution of operations and number of cows by herd size were not reported for South Carolina but were estimated by using the average distribution of the other five states. This procedure may underestimate the average size of commercial dairy herds in South Carolina.

Source: Cattle. SRS. USDA. LvGn 1. January 1982; Milk Production, Disposition, Income. SRS. USDA. May 1982.

2.9 percent since 1978 and only 7.8 percent since 1970. In the individual states, marketings ranged from 94.5 to 99 percent of production (Table 2). All milk marketed in Florida, Georgia, Louisiana and South Carolina was eligible for fluid use, or "Grade A," while virtually all marketings in Alabama and Mississippi were eligible for fluid use. For many years, milk marketings in the South have been primarily for local and nearby fluid markets. The relatively small manufacturing milk industry in the Southeast has all but disappeared with the exception of production of "soft" manufactured products (Class II) and seasonal production of "hard" manufactured products (Class III) from surplus Grade A milk.

Cash receipts from marketings of milk sold to plants and dealers by dairy farmers located in the Southeast amounted to \$974 million in 1981, up 34 percent since 1978 (Table 4). With the exception of Alabama, cash receipts from milk marketings in the Southeastern States rose annually during this period. Nationally, cash receipts to dairy farmers for marketings of milk rose 43 percent during the same time period.

Average prices per hundredweight of milk sold by farmers in the Southeast was \$15.45 in 1981 and 12 percent higher than the national average. This price relationship between the Southeast and the national average has been unchanged over the past five years, however, relative prices within the region compared to the national average prices and other regions has narrowed since the early 1970's. Nationally, average prices have risen more rapidly than in the Southeast.

Supply Adequacy

Regional milk supply estimates were made of fluid and manufactured milk product consumption in the six states and compared with milk mar-

Table 4. Total Cash Receipts and Price Per Hundredweight Received by Farmers For Milk Sold to Plants and Dealers, Southeast and United States, Selected Years, 1970-1981.

	Alabama	Florida	Georgia	Louisiana	Mississippi	South Carolina	Six-state area	United States
Total Cash Receipts:								
----- million dollars -----								
1970	50.2	113.0	78.2	71.1	60.0	34.5	407.0	6,279.2
1975	66.0	212.4	114.7	104.0	79.8	51.0	627.9	9,657.1
1976	68.0	235.0	134.3	115.0	85.5	55.6	693.4	11,165.4
1977	69.2	237.3	132.3	112.4	84.7	56.5	692.4	11,489.6
1978	68.2	246.4	145.9	117.9	89.9	58.5	726.8	12,408.6
1979	75.8	285.6	169.6	130.0	99.5	65.3	825.8	14,354.4
1980	82.8	317.4	188.4	137.5	109.7	74.7	910.5	16,274.0
1981	80.8	347.6	202.3	142.3	118.8	81.9	973.7	17,738.8
Price Per Hundredweight:								
----- dollars -----								
1970	6.83	7.41	6.95	6.97	6.25	7.25	6.97	5.71
1975	10.40	11.30	9.80	10.30	9.50	10.60	10.44	8.75
1976	10.80	11.90	10.70	11.00	10.30	11.30	11.14	9.66
1977	10.90	12.20	10.50	10.70	10.20	11.40	11.14	9.72
1978	11.60	12.80	11.40	11.50	11.10	11.90	11.88	10.60
1979	13.30	14.50	12.90	13.20	12.60	13.20	13.48	12.00
1980	14.40	15.80	14.00	14.10	13.80	14.50	14.65	13.00
1981	14.70	16.80	14.70	14.90	14.40	15.60	15.45	13.80

Source: Milk Production, Disposition, Income. SRS. USDA. various issues.

ketings in these states. Comparisons reveal the adequacy (or inadequacy) of supply in the region. The estimates were made for 1980 using population reported in the 1980 Census. Per capita demand for fluid and manufactured milk products was derived from national utilization of milk data reported by the USDA. National average per capita consumption data may slightly overstate milk consumption in the Southeast. Per capita use in 1980 of fluid milk was 227 pounds and milk equivalent of manufactured milk products was 299 pounds.

Milk consumption, producer marketings of milk and supply deficits for each Southeastern state are shown in Table 5. On a milk equivalent basis 15.2 billion pounds were consumed in the Southeast in 1980. Of this, 6.6 billion pounds, or 43 percent, were used as fluid products and 8.7 billion pounds were used as manufactured products. Aggregate fluid product consumption was six percent greater than the 6.2 billion pounds of Grade A milk marketed by dairy farmers in the six states. Only 43 million pounds of manufacturing grade milk were sold by dairy farmers located in Mississippi and Alabama. Essentially all manufactured milk products required for consumption in the Southeast region must be imported from outside supply areas. Aggregate milk product consumption was almost two and one-half times regional milk supply.

Alabama and Florida fluid milk markets are dependent on substantial volumes of imported raw milk produced in other states including locations outside the Southeast. Information from the Alabama Dairy Commission and the Florida Department of Agriculture shows that raw milk imports into the two states amount to about 500 million pounds annually (Table 6). About 35

Table 5. Population, Milk Consumption, Producer Marketings and Supply Deficit by State, Southeast, 1980.

State	1980 popu- lation no	Estimated milk consumption ^a			Producer marketings		Supply Total deficit ^b
		Fluid products	Manufactured products	Total	Approved for fluid use	Manufacturing grade	
		----- mil lb -----					
Alabama	3,890,061	883	1,163	2,046	564	11	575 1,459
Florida	9,739,992	2,211	2,912	5,123	2,009	0	2,009 3,103
Georgia	5,464,265	1,240	1,634	2,874	1,346	0	1,346 1,518
Louisiana	4,203,972	954	1,257	2,211	975	0	975 1,216
Mississippi	2,520,638	572	754	1,326	763	32	795 518
South Carolina	3,119,208	708	933	1,641	515	0	515 1,119
Total	28,938,136	6,568	8,653	15,221	6,172	43	6,215 8,933

^a Per capita consumption of fluid products (whole milk, cream items, lowfat and skim items) was assumed to be 227 pounds; per capita consumption of all other milk products was assumed to be 299 pounds of milk equivalent. These estimates were based on domestic disappearance from commercial sources. The national estimates likely overstate per capita consumption in the region by five to ten percent.

^b Adjusted for milk consumed on farms.

Sources: Census of Population, Bureau of Census; Dairy Outlook and Situation, USDA; Milk Production, Disposition, Income. USDA. DS-388. March 1982.

percent of the milk supply received by Alabama processors is produced in other states, largely by dairy farmers located in Tennessee. Florida raw milk imports are nine to ten percent of the volume of milk marketings by Florida dairy farmers. A large proportion of the Florida raw milk imports is produced in Georgia and Alabama.

Table 6. Imports of Raw Milk for Fluid Use into Alabama and Florida, 1976-1982.

Year	Alabama	Florida
	-----million pounds-----	
1976	304.5	60.7
1977	313.6	81.4
1978	323.8	113.2
1979	316.7	171.0
1980	300.0	213.3
1981	301.1	212.0
1982	N.A.	248.0 ^b

^a Partially estimated

^b Florida imports through November 1982

N.A. Not available

Sources: Alabama Dairy Commission and Florida Department of Agriculture.

Population is the major determinant of milk consumption. The 24.3 percent population growth in the Southeast during the past decade increased the aggregate demand substantially. The comparison of population numbers indicates that the national population growth was less than one-half the rate of growth in the Southeast during the decade of the 1970's, shown as follows:

	Population		Percentage change pct
	<u>1970</u> no	<u>1980</u> no	
Southeast (6 states)	23,276,046	28,938,136	24.3
United States	203,302,031	226,504,825	11.4

The outlook for continued population growth in the Southeast at a rate faster than the national growth rate targets the region as one of the most favorable markets in the United States. The combination of a tight milk supply and anticipated demand expansion suggest strong upward pressure on producer prices to encourage more production, particularly regional production of milk for the fluid market. However, prices paid Southeastern dairy farmers have barely been high enough to bring forth supply increases at the same rate as demand expansion. The region has become more dependent on other regions for raw milk and milk products. Unless the prices paid Southeastern dairy farmers increase, the trend toward greater dependency on imported milk will continue. With higher transportation costs for long-distance shipment of milk, the results to consumers will likely be higher priced milk products.

EFFECT ON CONSUMERS AND PRODUCERS OF THE ASSESSMENT VERSUS
A SUPPORT PRICE REDUCTION

The 1982 Omnibus Budget Reconciliation Act provided for an assessment on all milk sold. The administration's choice of the assessment versus a reduction in the support price has some economic implications for producers and consumers. Processor decisions are not expected to be as directly affected as those of producers and consumers.

One purpose of the assessment is to reduce production through lower producer prices. The economic implications for producer groups can be linked to the responses of consumers in the commercial market place. Because of the derived demand characteristic of milk production, the responses of consumers to the producer assessment versus a reduction in the support price of milk will be developed first. The consumer is impacted individually as a user of fluid milk and milk products and collectively as a taxpayer who through the CCC purchases and stores surplus milk supplies in the form of butter, nonfat dry milk powder (NDM) and cheese.

Consumer Considerations

Consumer As User. Consumers of fluid and manufactured milk products realize no change in the cost of their dairy product purchases as a direct result of the assessment because the raw milk costs remain the same to processors under conditions of surplus milk supplies. A reduction in the price support level, however, places downward pressures on the Minnesota-Wisconsin (M-W) price, the market-clearing price for milk used in manufactured milk products. As a result, all raw milk prices are lowered because the support price undergirds the raw milk price which is

the basic formula price for all fluid (Grade A) milk in federal order markets.

A lower support price means lower costs for the raw milk as an ingredient and hence, lower consumer prices, ceteris paribus. As a consumer, the citizen pays only for that portion of the milk supply that is desired and within his budget. As a taxpayer, the citizen pays through the CCC for the remaining portion of the milk supply that is either not desired or that is commercially priced out of his budget. The provision of the Agricultural Adjustment Act of 1949 that established the price support program provided for the CCC to release surplus stocks whenever commercial prices exceeded 105 percent of CCC purchase prices. It also affects the citizen's economic well-being as both consumer and taxpayer. CCC calculations of product prices, given the assessment versus a reduction in the level of the support price, proxies the economic effects upon the consumer under the two choices for reducing production.

Column A in Table 7 identifies the factors that enter into the calculations of product purchase prices for nonfat dry milk (NDM), butter and cheese at given support price levels. Interest is on comparing differences in purchase prices across varying support price levels. With the producer assessment, the support price remains at \$13.10 per hundredweight (Column B). Under the 1982 Act, the \$13.10 per hundredweight (\$12.80 at 3.5 percent butterfat) support price level established in 1980 is maintained and a direct assessment of \$0.50 per hundredweight is paid by the first purchaser of the producer's milk to the CCC beginning on December 1, 1982. There are provisions to collect an additional \$0.50 beginning April 1, 1983. Effects on purchase prices of reductions in the level of support prices by \$0.50

Table 7. Calculation of CCC Purchase Prices of Dairy Products Under Conditions of a Producer Assessment on Production Versus a Lowering of Support Prices.

Item/unit	A	B	C	D
		Producer assessment	Support price reduction \$0.50 \$1.00	
<u>I. Basic Information</u>				
1. Support price for manufacturing milk, \$/cwt at 3.5 pct milkfat		12.80	12.30	11.80
2. Support price for manufacturing milk, \$/cwt at 3.67 pct milkfat		13.10	12.60	12.10
3. Average milkfat test, percent		3.67	3.67	3.67
4. Butterfat differential, cents ^a		17.9	17.3	16.6
5. Yields per 100 pounds of milk at average test (pounds)				
(a) Butter		4.48	4.48	4.48
(b) Nonfat dry milk		8.13	8.13	8.13
(c) Cheese		10.1	10.1	10.1
<u>II. Butter-Nonfat Dry Milk Calculation</u>				
6. Return to butter-powder plants, \$/cwt		13.10	12.60	12.10
7. CCC margin between price of manuf. milk and the value of butter and NDM made from 100 pounds of milk, \$/cwt		1.22	1.22	1.22
8. Value of butter (Chicago) and NDM (U.S. average) made from 100 pounds of milk, \$/cwt		14.32	13.82	13.32
9. Nonfat dry milk purchase price, \$/lb		0.94	0.91	0.88
Value of NDM per 100 pounds of milk, \$/cwt ^b		7.64	7.39	7.14
10. Value of butter:				
Dollars per 100 pounds of milk		6.68	6.43	6.18
12. Dollars per pound at Chicago (calculated) ^c		1.4911	1.435	1.3795
13. Butter purchase price at New York, \$/lb		1.5200	1.470	1.41
14. Butter purchase price at Chicago, \$/lb ^d		1.4900	1.440	1.38
<u>III. Cheese Price Calculation</u>				
15. Return to cheese, \$/cwt		13.10	12.60	12.10
16. Margin between price of manuf. milk and value of cheese and whey per 100 pounds of milk, \$/cwt		1.37	1.37	1.37
17. Value of cheese and whey per 100 pounds of milk, \$/cwt		14.47	13.97	13.47
18. Value of whey: 0.25 pound of fat, \$ ^e		.37	.35	.32
19. Other solids, \$ ^f		.00	.00	.00
20. Total		.37	.35	.32
21. Value of cheese:				
Dollars per 100 pounds of milk		14.10	13.61	13.125
23. Dollars per pound (calculated) ^g		1.3960	1.3475	1.2995
24. Cheese purchase price (rounded) \$/lb		1.3950	1.3500	1.3000

^a CCC purchase price for butter at Chicago times 12.

^b NDM price per pound times 8.13. The decrease in support is split about equally between the joint products of butter and nonfat dry milk.

^c Value of butter per hundred pounds of milk divided by 4.48. (Chicago butter price is representative of U.S. average price.)

^d Price based on actual freight rate effective at the beginning of the marketing year, but limited to the maximum 3 cents reduction from the New York City price.

^e Butter purchase price at Chicago times .25.

^f Estimated that whole milk cheese whey solids other than fat is processed at 0 cents net return (13.5 cents dried whey average price minus 13.5 cents processing costs per pound).

^g Value of cheese per hundred pounds of milk divided by 10.1.

Source: Dairy Market News, Week of October 13-15, 1981 provided the format for calculations.

and \$1.00 to \$12.60 and \$12.10 per hundredweight versus the assessment are indicated in columns C and D, respectively.

Product prices from lines 9, 11 and 23 of columns B, C and D in Table 7 provide data for Table 8. Comparative analyses of CCC purchase prices for hard manufactured milk products for alternative price support levels can now be readily made.

Table 8. CCC Product Purchase Prices Under Alternative Price Support Levels.

Manufactured product	Support price level per hundredweight		
	\$13.10 ^a	\$12.60 ^b	\$12.10 ^c
	-----dollars per pound-----		
Butter	1.49	1.44	1.38
Nonfat dry milk	0.94	0.91	0.88
Cheese	1.395	1.35	1.30

a Proxies the producer assessment alternative.

b Proxies a \$0.50 per hundredweight price support reduction alternative.

c Proxies a \$1.00 per hundredweight price support reduction alternative.

The set of prices in Table 8 provides for analysis and inference of the impact of the assessment compared to reductions in the support prices by amounts equal to the assessment. Since the assessment does not alter the support price level of \$13.10 per hundredweight, it has no direct effect on consumer prices of either fluid milk or manufactured milk. A \$0.50 reduction in the support price level from \$13.10 per hundredweight to \$12.60 lowers butter prices from \$1.49 to \$1.44 per pound, a price decrease of 3.36 percent. The assumed price elasticity of demand of -0.49 suggests that butter consumption will increase by 1.65 percent and NDM will increase by 1.56 percent as a result of a \$0.50 reduction in the support price (5). Cheese utilization is calculated to increase 1.58 percent as a result of the 3.23 percent decrease in its price due to the \$0.50 reduction. As shown in Table 9, a price support deduction of \$1.00 per hundredweight will essentially double the reduction in the products' costs and increase in consumption percentage.

Table 9. Estimated Effects of Support Price Reductions on Product Prices and Quantities Consumed Per Capita.

Milk product	Product price reduction associated with support price reduction				Product quantity increase associated with support price reduction			
	\$0.50		\$1.00		\$0.50		\$1.00	
	\$/lb	pct	\$/lb	pct	lb	pct	lb	pct
Butter	0.05	3.36	0.11	7.38	0.07	1.65	0.16	3.62
NDM	0.03	3.19	0.06	6.38	0.05	1.56	0.09	3.13
Cheese	0.045	3.23	0.095	6.81	0.29	1.58	0.57	3.17

Source: Basic consumption data for calculating percentage changes were taken from Dairy Outlook and Situation, USDA, DS-390, September 1982, Table 12.

Consumer As Taxpayer. Table 8 indicates that current CCC purchase prices remain unchanged under the assessment but decline proportionately with

reductions in support price levels. Therefore, excess product purchase costs are less to the taxpayer under reductions in the support price level than they are under the producer assessment. Additional savings accrue to the taxpayer under support price reduction programs since the reduced product purchase prices place downward pressures on commercial product prices. Lower prices act to increase consumption by amounts suggested in Table 9. For any given quantity of milk, greater consumption means smaller CCC purchases and associated storage costs.

Producer Considerations

Farm level prices for raw milk will be lower regardless of the choice of an assessment or reductions in support price levels. Lower farm prices mean lower blend prices. Since the assessment has no effect on final product prices and consumption, its full effect is placed on the producer.

Lower product prices associated with reductions in support price levels act to increase utilizations of both Class I (fluid) and Class III (manufactured) milk products. Increased utilization of Class III products places upward pressure on the M-W price and hence, on all class prices. At the same time, the increased Class I utilization acts to lower the relative level of Class III utilization. The combination of increased class prices, increased Class I utilization and decreased Class III utilization acts to raise the producer's blend price.

The outlook is for continual price depression due to the inventory of surplus stocks and the production potential inherent in the largest heifer replacement ratio (43.1 per 100 milking cows) to date, a relatively high milk-feed price ratio, relatively low cull cow prices and fewer alternative

opportunities for dairy farmers either in or out of agriculture. Absolute declines in farm prices, regardless of whether they result from an assessment or a reduction in support price levels, will impact upon the milk supply. The direction, magnitude and timing of the supply response will depend upon the behavior of milk producers.

Producer Supply Responses. The Law of Supply maintains that there is a direct relationship between the price of milk and the quantity produced. Following a change in the price of milk, the timing of adjustments and the degree of response vary among individual producers and regions of the country. The only clear-cut issue for farmers is economic survival and whether that survival lies in milk production or some other endeavor.

Increasing production under conditions of falling blend prices is contrary to dictates of supply theory. Inconsistencies in assumptions underlying supply theory and the absence of attractive alternatives produce conditions under which individual farmers' output may increase in order to maintain income and cash flow under conditions of falling blend prices (6).

In the short-run, the individual producers who try to maintain income by offsetting the per unit profit margin decline with increased output will first experience losses in returns to fixed assets. Further economic losses will be experienced as reduced returns to their own labor. Finally, the inability to service all variable costs from the revenue generated in milk production will mark the terminal stage of the dairy farm's existence.

Reduced blend prices will result in less aggregate total milk production. Over time, the lower blend prices leave smaller reserves from which to replace worn-out resources essential to milk production. The

lower returns to assets in dairying make it easier for those assets to be bid out of dairying. These developments and the net culmination of lower blend prices will be manifest differently throughout regions of the United States.

Table 10. Milk Production Costs and Returns Per Cow and Per Hundredweight, by Costs and Returns Items, All Regions, 1979-1981.

Item	1979		1980		1981 ^a	
	Per cow	Per cwt ^b	Per cow	Per cwt ^b	Per cow	Per cwt ^b
----- dollars -----						
<u>Gross Revenue</u>						
Milk	1540.01	11.93	1724.19	12.95	1867.95	13.72
Cull cows, calves, replacement sales	192.01	1.49	183.58	1.38	169.80	1.25
Total revenue	1732.02	13.42	1907.77	14.33	2037.75	14.97
<u>Direct Costs</u>						
Feed costs	695.84	5.39	815.04	6.13	866.84	6.36
Other direct costs	311.58	2.40	357.70	2.70	398.09	2.92
Total direct costs	1007.42	7.79	1172.74	8.83	1264.92	9.28
<u>Revenue above Direct Costs</u>	724.60	5.63	735.03	5.50	772.83	5.69
<u>Ownership Costs</u>						
RITC ^c	364.23	2.82	449.23	3.37	506.16	3.72
Total direct and ownership costs	1371.65	10.61	1621.97	12.20	1771.08	13.00
<u>Returns to Producer</u>						
Operator & family labor	157.41	1.22	168.43	1.27	186.35	1.37
Management ^d	202.96	1.59	117.38	.86	80.32	.60
Total returns to operator, family labor, and management ^e	360.37	2.81	2.81	2.13	266.67	1.97

^a Preliminary.

^b Hundredweight of milk represents all milk sold and consumed on the farm.

^c Replacement reserve, interest on borrowed and equity capital, taxes, and insurance.

^d Residual returns.

^e Returns to equity capital are included in ownership costs.

Source: Costs and Returns of Producing Milk in the United States--1979, 1980, and Preliminary 1981, prepared by ERS, USDA, for the Committee on Agriculture, Nutrition, and Forestry, United States Senate, July 1982.

Regional Impacts Differ. Producer cost data for the last three years in different regions of the nation support earlier observations and illustrate the disproportionate effect of the assessment on a regional basis. Data in Table 10 indicate that the all-region total returns per hundredweight to operator labor, family labor and management have been decreasing over the past three years. Although total revenue has increased, so have costs of production. Among cost categories, those associated with replacement reserve, interest on borrowed and equity capital, taxes and insurance have increased significantly. As a result, the net profit margin decreased over time.

Table 11. Total Milk Production Costs and Returns by Selected Cost and Returns Items, by Regions and the United States, 1981^a.

Item	Upper		Corn	Southern		All	
	Northeast :	Midwest :	Belt :	Appalachian :	Plains :	Pacific : regions ^f	
----- dollars per hundredweight ^b -----							
Gross revenue	15.28	14.88	14.69	15.19	15.87	14.40	14.97
Direct costs	9.27	8.28	9.57	11.02	11.16	9.88	9.28
Revenue above direct costs	6.01	6.60	5.12	4.17	4.71	4.52	5.69
Ownership costs (RITI) ^c	3.70	4.17	4.36	3.47	2.98	2.46	3.72
Total direct and ownership costs	12.97	12.45	13.93	14.49	14.14	12.34	13.00
Returns to pro- ducer ^{d e}	2.31	2.43	.76	.70	1.73	2.06	1.97

^a Preliminary.

^b Hundredweight of milk represents all milk sold and consumed on the farm.

^c Replacement reserve, interest on borrowed and equity capital, taxes, and insurance.

^d Residual returns.

^e Returns to equity capital are included in ownership costs.

^f Weighted average.

Source: Costs and Returns of Producing Milk in the United States--1979, 1980, and Preliminary 1981, prepared by ERS, USDA, for the Committee on Agriculture, Nutrition, and Forestry, United States Senate, July 1982.

Costs and return data in Table 11 for individual regions of the country support the proposition that the producer assessment will produce unequal hardships among producers by regions. Of the six regions for which data are available, the Appalachian region is most typical of the Southeast. It is also the region in which returns to producers are the lowest. In the Appalachian region, despite the fact that gross revenue is relatively high and its ownership costs are below the all-region average, the returns are low because direct costs are relatively high.

The direct effect of the producer assessment is to reduce net returns to producers by that amount. Table 12 indicates the relative impact of the assessment as a percent of returns to producers in all six regions. The greatest impact is on dairy farmers in the Appalachian region. The \$0.50 assessment represents 25.4 percent of the all-region or average return per hundredweight to operator labor, family labor and management. It, however, represents 71.4 percent of the Appalachian producer's return, but only 20.6 percent of the Upper Midwest producer's return. The degree of inequity of the burden increases with increases in the assessment rate. Economic relationships suggest that there is likely to be a greater proportion of the milk production lost in those areas where the effect of the assessment is relatively greater.

This section outlined consumer and producer considerations associated with the implementation of a producer assessment versus a reduction in support price equal to the amount of the assessments. These considerations were outlined in terms of CCC purchase prices for the hard manufactured products of the dairy industry and in terms of relative rates of taxation to producers based on returns per hundredweight. Comparative effects are summarized in Table 13.

Table 12. Effects on Milk Production Returns Among Regions as a Result of Alternative Assessments.

Region	Return per hundredweight ^a	\$0.50 cents assessment		\$1.00 assessment	
		Absolute	Relative	Absolute	Relative
		dol	pct	dol	pct
Northeast	2.31	.50	21.6	1.00	43.2
Upper Midwest	2.43	.50	20.6	1.00	41.2
Corn Belt	.76	.50	65.8	1.00	131.6
Appalachian	.70	.50	71.4	1.00	142.9
South Plains	1.73	.50	28.9	1.00	57.8
Pacific	2.06	.50	24.3	1.00	48.5
All regions	1.97	.50	25.4	1.00	50.8

^a Based on 1981 returns.

Table 13. Comparative Effects of a Producer Assessment Versus a Reduction in the Support Price Upon Producers and Consumers.

Effect on:	Producer assessment		Support price reduction	
	Short run	Long run	Short run	Long run
Producer				
Blend price	decrease	decrease	decrease	decrease
Production	don't know	decrease	don't know	decrease
Income	decrease	decrease	decrease	decrease
Consumer				
Retail prices	no change	no change	decrease	decrease
Consumption	no change	no change	increase	increase

DAIRY PRICE ALTERNATIVES FOR THE SOUTHEAST

The major focus of the assessment program is directed toward reducing government costs in the purchases of cheese, butter and nonfat dry milk by the CCC. Costs are to be reduced through a levy to be collected from all milk sold in the United States.

The price support level is maintained at \$13.10 per hundredweight (\$12.80 at 3.5 percent fat) for the marketing years beginning October 1, 1982 and 1983. In 1984, the support price level will be based on the percent of parity that \$13.10 is on October 1, 1983. The estimated parity is about 61 percent, which equates to a support level of \$14.60 per hundredweight on October 1, 1984.

The Secretary of Agriculture is given the authority to assess 50 cents per hundredweight on all milk marketed. The assessment was to begin on December 1, 1982, but the USDA is now under an injunction prohibiting collections. Responsibility for collecting the assessment and sending the funds to the CCC is imposed on every plant or handler of fluid and manufacturing milk. Producer-handlers are required also to pay the assessment. The assessment is to remain in effect at the discretion of the Secretary through the 1985 marketing year if surplus removals by the CCC exceed 5 billion pounds of milk equivalent on an annual basis.

Furthermore, the Secretary has the authority to assess an additional 50 cents per hundredweight on April 1, 1983. However, this assessment has the following provisions:

1. The assessment will be made if the estimate of annual (marketing year) CCC purchases exceed 7.5 billion pounds milk equivalent.

2. A production adjustment incentive program must be established by the Secretary to refund part or all of the second 50 cents assessment to farmers who reduce their production.

Dairymen who reduce their production from a base period after April 1, 1983, will be eligible to have a part or all of the 50 cents assessment refunded depending on the amount of the reduction. The Secretary must estimate the year's surplus production and then set a percent by which he chooses to reduce production. Dairy producers will not be required to reduce production more than the percent of the national surplus to be eligible for the refund. If the surplus is estimated at 10 percent and the Secretary specifies an 8 percent reduction for a full refund, then a producer reducing marketings by that amount would be eligible for a refund of 50 cents per hundredweight.

The base period established by the Secretary to determine the production history will be October 1, 1980, through September 30, 1982. The marketing history of each milk producer in the nation will be necessary information to establish a producer base for the selected base period. Each producer will need to furnish evidence to substantiate their production reduction after April, 1983. The refund is payable only on an annual basis with the first refund payable after March 31, 1984 (1).

Program Impacts

Milk production in the 1981-82 marketing year is projected to be 134.3 billion pounds with marketings of 132 billion pounds. Net removals by the CCC are expected to be 13.8 billion pounds milk equivalent with the price

support at the minimum of \$13.10 per hundredweight. With no deductions implemented for 1982-83, production is projected to be 137.5 billion pounds of milk resulting in marketings of 135.3 billion pounds. Projected CCC removals are 13.9 billion pounds of milk equivalent. Commercial use is expected to increase about the same amount as the increased marketings because of stable prices and increases in population (7,8).

Implementation of the 50 cents assessment on December 1, 1982, was expected to slow down the rate of increase in milk production. The implementation of the second 50 cents assessment on April 1, 1983, is expected to reduce production somewhat to slightly above the 1981-82 level. With an expected increase in commercial utilization and a slight increase in production, CCC removals under the assessment plan may be down about 1 to 1.5 billion pounds.

With the 50 cents assessment, projected outlays by the CCC are \$2,037 million for 1982-83, and with both assessments the outlay projection is \$1,992 million. The assessment will amount to about \$600 million for 50 cents and over \$900 million for both assessments. Therefore, CCC costs would be reduced to \$1.1 to \$1.5 billion or by almost one-half of current expected costs.

Milk costs to consumers will not be directly affected by the 1982-83 price support program. Costs will not increase due to price support increases since the support is frozen at its current level. Neither will milk product costs to consumers decrease because the assessment goes to CCC to reduce costs of removing milk from the market. Taxpayers' costs for the CCC milk product purchases will be reduced by the amount of the assessments.

Impacts on the Southeast

Although the incidence of surplus milk production is a regional problem, the dairy surplus problem is a national one in that it impacts on the economic well-being of dairy farmers, processors and consumers throughout the United States. In those regions where farmers have expanded production in excess of commercial market needs, the CCC has become the major purchaser. However, the assessment is scheduled to be applied to all producers regardless of the market or region.

Most marketings of milk in the Southeast are Grade A eligible for fluid milk markets. Furthermore, most of the milk is used for either Class I products or Class II products. For the 12-month period July 1, 1981-June 30, 1982, milk producers in the six Southeastern States of Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina marketed 6.4 billion pounds of milk. In these six states it is estimated that 81 percent of the milk marketed was used for fluid milk products (Class I) and 8 percent was used for soft products (Class II). Only 11 percent was utilized in manufactured milk products of cheese, butter and nonfat dry milk. Thus, a relatively small quantity of milk in the Southeast is manufactured into products eligible for purchase by the CCC.

Milk production and marketings for each of the Southeastern States and for the United States are shown in Table 14 for the period July 1, 1981-June 30, 1982. Marketings ranged from 550 million pounds to 2.1 billion pounds. Data were obtained for the eight Federal milk orders and two state milk orders in which most of the milk produced in the six states is sold (Table 15). Utilization ranged from 68 to 88 percent Class I.

Table 14. Production per cow, Average Number of Cows, Total Milk Production, and Total Milk Marketed, Southeastern States and United States, July 1981-June 1982.

Item/unit	Southeastern States						Total	U.S.
	Alabama	Florida	Georgia	Louisiana	Mississippi	South Carolina		
Milk per cow (lb)	9,130	11,160	10,720	9,335	8,910	11,766	10,748	12,174
Milk cows (thou)	62.8	189.6	130.7	102.8	96.1	48.0	630	10,973
Total production (mil lb)	573	2,116	1,401	960	856	565	6,471	133,585
Total marketed (mil lb)	556	2,103	1,381	936	844	553	6,373	130,419

Source: Milk Production, SRS. USDA. various Issues, and Milk Production, Disposition, Income. SRS. USDA.

Table 15. Producer Deliveries of Milk Used in Class I, II, and III by Market areas, Selected Southeastern Markets, July 1981-June 1982.

Market/class use	Producer deliveries of milk thou lb	Percentage utilization pct	Price per hundredweight dol
Georgia Fed. Order			
Class I	1,419,658	75.16	15.18
Class II	140,485	7.44	12.61
Class III	328,736	17.40	12.48
Total	1,888,879	100.00	14.52
Upper Florida and Tampa Bay Fed. Orders			
Class I	1,313,525	87.81	17.02
Class II	182,320	12.19	12.63
Total	1,495,845	100.00	16.48
Southeast Florida Fed. Order			
Class I	686,736	89.15	17.32
Class II	83,537	10.85	12.63
Total	770,273	100.00	16.81
New Orleans - Miss.- Memphis Fed. Orders			
Class I	1,011,004	68.35	15.34
Class II	181,011	12.24	12.62
Class III	287,139	19.41	12.48
Total	1,479,154	100.00	14.45
Greater Louisiana Fed. Order			
Class I	469,677	84.63	15.23
Class II	26,169	4.72	12.63
Class III	49,106	10.65	12.48
Total	554,952	100.00	14.81
South Carolina			
Class I	486,640	88.0	15.95
Classes II & III	66,360	12.0	12.48
Total	553,000	100.0	15.53
Alabama			
Class I	775,602	88.29	14.96
Classes II & III	102,847	11.71	12.57
Total	888,449	100.00	14.69

Sources: Federal Order Market Statistics, Agricultural Prices, and State Order Statistics.

The utilization percentages were applied to the estimated milk marketings by producers in each state to obtain estimates of the amount of milk utilized in the various classes (Table 16). All the Florida markets were combined to obtain a weighted utilization percentage. Since federal orders overlap state boundaries in Louisiana and Mississippi and milk moves across state boundaries, the data for three Federal orders were combined to obtain a combined utilization.

Estimates of class and blend prices were obtained for each Southeastern State from milk order and USDA sources. Class prices for Florida and Louisiana-Mississippi are weighted average prices of all milk and value of milk in the combined markets. The blend price in each state is the simple average of the monthly all milk price published by USDA for each state. The Class II and Class III prices are the simple averages of the monthly prices from the Federal and state order markets. The Class I price in most markets was a price above the federal order minimum price. Although the price was announced each month, various deductions and market adjustments made it difficult to obtain the actual Class I price. However, class utilizations and Class II and Class III prices were available. Therefore, the Class I price in each state was estimated by the following procedure:
$$\text{Class I price} = \text{Blend price} - [(\text{Class II price} \times \text{Class II \% util.}) + (\text{Class III price} \times \text{Class III \% util.})] / (\text{Class I \% util.})$$

Table 17 shows the estimated milk marketed by producers for 1982. Production data for the first nine months of 1982 were obtained from USDA published sources. The last three months were estimated by multiplying the percentage change in the first nine months of 1982 relative to 1981 to

Table 16. Estimated Utilization of Milk Marketed and Prices Received, South-eastern States, July 1, 1981-June 30, 1982.

State/class use	Estimated marketed mil lb	Percentage utilization pct	Price per hundredweight ¢/lb
Georgia			
Class I	1,038	75.16	15.18
Class II	103	7.44	12.61
Class III	240	17.40	12.48
Total	1,381	100.00	14.52
Florida			
Class I	1,856	88.27	17.12
Class II	247	11.73	12.63
Total	2,103	100.00	16.59
Louisiana and Mississippi			
Class I	1,296	72.79	15.31
Class II	181	10.19	12.62
Class III	303	17.02	12.48
Total	1,780	100.00	14.55
South Carolina			
Class I	487	88.00	15.95
Classes II & III	66	12.00	12.48
Total	553	100.00	15.53
Alabama			
Class I	491	88.29	14.96
Classes II & III	65	11.71	12.57
Total	556	100.00	14.69
All markets			
Class I	5,168	81.10	15.96
Class II	531	8.33	12.62
Class III	674	10.57	12.49
Total	6,373	100.00	15.32

Sources: Tables 14 and 15.

Table 17. Estimated Milk Marketed, Percentage Utilization, and Prices Paid to Producers, Southeastern States, 1982.

Market	Estimated marketed ^a mil lb	Percentage utilization ^b pct	Estimated price per hundredweight ^c dol	Estimated value mil dol
Georgia				
Class I	1,042	75.16	15.03	156.6
Class II	103	7.44	12.57	12.9
Class III	241	17.40	12.46	30.0
Total	1,386	100.00	14.40	199.5
Florida				
Class I	1,884	88.27	17.00	320.3
Class II	250	11.73	12.57	31.4
Total	2,134	100.00	16.48	351.7
Louisiana & Mississippi ^d				
Class I	1,284	72.79	15.23	195.6
Class II	180	10.19	12.57	22.6
Class III	300	17.02	12.46	37.4
Total	1,764	100.00	14.49	255.6
South Carolina				
Class I	497	88.00	15.95	79.3
Classes II & III	68	12.00	12.48	8.5
Total	565	100.00	15.53	87.8
Alabama				
Class I	484	88.29	14.70	71.2
Classes II & III	64	11.71	12.57	8.0
Total	548	100.00	14.45	79.2

a Based on first 9 months of 1982 and last 3 months estimated based on 1981.

b Utilization in federal order and state order markets, July 1981-June 1982, Alabama, April 1981-March 1982.

c Based on first 8 months of 1982, Class I prices estimated.

d Louisiana and Mississippi marketings and combined utilizations from federal order markets.

the last three months of 1981 and adding the product to the 1982 data. Marketings were assumed to be the same percentage of production as the 1981-82 data from Table 16. The estimated prices were based on data for the first eight months of 1982 and estimated for the last four months. Blend prices in the May-August 1982 period were averaging about 30 cents less than 1981, so the 1982 prices for the last four months were estimated to average 30 cents less than the 1981 prices.

In assessing the impact of the assessments on milk producers in the Southeast, a baseline estimate was made under the assumption that 1983 marketings would be the same as 1982, since there would be no price change. With the assessments, economic theory would suggest that producers in the aggregate will react to the lower prices in such a way that production will decrease during the year³. Borrowing from some studies of milk supply response to price changes, a short run supply elasticity of 0.25 was used in this analysis. That is to say, a 10 percent change in producer price will result in a 2.5 percent change in production in the same direction (9).

Responses in production to the assessments were analyzed for two possible outcomes (Table 18). The following scenarios were analyzed:

Scenario A1 - Producer response to the 50 cents per hundredweight reduction in blend price.

³ Some have alleged that the assessment will result in an increase in production, as dairy farmers squeeze out additional output in order to maintain cash flow. However, it is more likely that production will decline. Some individual dairy farmers will no doubt, expand production, but such expansion will be more than offset by other dairy farmers who will cull marginal cows made unprofitable by lower prices. Ultimately, some firms will be driven from the industry resulting in a supply decline.

Table 18. Utilization, Production, Class Prices, and Value of Production and Producer Prices for Milk, Various Scenarios, Southeastern States, Projected, 1983.

Market/unit	Baseline 1983	Scenario A1	Scenario A2
<u>Georgia</u>			
Class I (mil lb)	1,042	1,042	1,042
Class II (mil lb)	103	103	103
Class III (mil lb)	241	229	154
Total production (mil lb)	1,386	1,374	1,299
Value (mil dol)	199.50	198.00	188.70
Blend (dol/cwt)	14.40	14.41	14.53
Adjusted value (mil/dol)	---	191.10	179.00
Adjusted blend (dol/cwt)	---	13.91	13.78
<u>Florida</u>			
Class I (mil lb)	1,884	1,884	1,884
Class II (mil lb)	250	234	119
Total production (mil lb)	2,134	2,118	2,003
Value (mil dol)	351.70	349.70	335.24
Blend (dol/cwt)	16.48	16.51	16.74
Adjusted value (mil dol)	---	339.10	320.78
Adjusted blend (dol/cwt)	---	16.01	15.99
<u>Louisiana-Mississippi</u>			
Class I (mil lb)	1,284	1,284	1,284
Class II (mil lb)	180	180	180
Class III (mil lb)	300	285	190
Total production (mil lb)	1,764	1,749	1,654
Value (mil dol)	255.60	253.70	241.85
Blend (dol/cwt)	14.49	14.51	14.62
Adjusted value (mil dol)	---	245.00	229.41
Adjusted blend (dol/cwt)	---	14.01	13.87
<u>South Carolina</u>			
Class I (mil lb)	497	497	497
Classes II & III (mil lb)	68	63	33
Total production (mil lb)	565	560	530
Value (mil dol)	87.80	87.20	83.39
Blend (dol/cwt)	15.53	15.57	15.73
Adjusted value (mil lb)	---	84.40	79.39
Adjusted blend (dol/cwt)	---	15.07	14.98
<u>Alabama</u>			
Class I (mil lb)	484	484	484
Classes II & III (mil lb)	64	59	29
Total production (mil lb)	548	543	513
Value (mil dol)	79.20	78.50	74.79
Blend (dol/cwt)	14.45	14.46	14.58
Adjusted value (mil dol)	---	75.80	70.90
Adjusted blend (dol/cwt)	---	13.96	13.82

Scenario A2 - Producers response to the first 50 cents assessment; assume that production will need to be reduced 10 percent to obtain a refund of the second 50 cents assessment and 50 percent of the producers reduce production by 10 percent.

With the assessment program there would be no response in the market side of the equation since consumer prices would not be affected. Therefore, Class I and Class II sales were assumed to remain the same as in 1982. In fact, Class I and Class II sales may increase somewhat as a result of the decreasing "real" prices for milk and population increases.

The supply elasticity was applied to the percentage decrease in producer prices as a result of the assessments. Total production was adjusted downward relative to the expected producer response to the lower prices. Also, production was adjusted down in relationship to the expected response to a refund of the second assessment of 50 cents. Since Class I and Class II sales were assumed to hold at the 1982 level, the reduction in production resulted in a reduction in Class III utilization or in Class II and Class III.

Results show an estimated reduction in producer income in 1983 from baseline estimates of \$8 to \$20 million in Georgia, \$12 to \$31 million in Florida, \$10 to \$26 million in Louisiana-Mississippi and \$3 to \$8 million each in South Carolina and Alabama (Table 18). Total value of milk production would be reduced an estimated \$38 to \$95 million or about four to 10 percent. Total milk production would decrease one to six percent. On a per cow basis, the average reduction in income would range from \$61 to \$68 per cow for the six states. This, of course, would vary by the

production level per cow. To the individual producer operation, the reduction in income would vary by both herd size and production per cow. The reduction would apply across the board on an equal per pound basis regardless of the efficiency of the operation.

Potential action on the part of milk producer organizations may be to increase the Class I price above the current level as a method of offsetting the decrease in the overall price. For example, an increase in the Class I price of 30 cents in an 80 percent Class I utilization market would result in an increase in the blend price of 24 cents. Thus, if producers were effective in raising the level of Class I prices, such increases would be reflected in higher retail prices for fluid milk products which would have a direct effect on consumers' expenditures.

An additional serious issue to Southern milk consumers is that any decrease in production could result in seasonal shortages in milk to meet Class I needs in some already deficit markets. For example, substantial volumes of both raw and packaged fluid milk are imported into Florida and Alabama markets. Any reduced production in those markets could result in an increased importation of milk and possible increased prices for such milk to consumers. Thus, under the assessment program producers would receive less, and yet consumers may be required to pay more.

Some Policy Alternatives to the Assessment Plan

Several alternatives to the assessment plan have been offered. Almost all of the alternatives take into account the market demand for milk as well as supply side. The following alternatives are considered in this analysis:

1. Reduce the support price.
2. Reduce prices for Class II and Class III milk, but retain Class I prices at current levels.
3. A formula plan for changing support prices.
4. A cull cow incentive plan.
5. A production base-excess and assessment plan.

The impact of these various alternatives on the Southeast was estimated. Since the demand side of the market would be affected by reduced support prices, it was necessary to select demand response variables to apply to price changes. Most studies of demand for fluid milk products indicate that the response to price change is very inelastic. For manufactured products, the elasticity is somewhat higher. For this analysis at the farm level, a short run price elasticity of -0.113 was used for fluid milk, and a price elasticity of -0.49 was used for manufactured product milk (9).

The following scenarios were analyzed:

Scenario B1 - Decrease the support price \$1.00 per hundredweight.

Scenario B2 - Decrease the support price \$1.50 per hundredweight.

Scenario C - Decrease the Class II and Class III prices \$1.00 per hundredweight but retain Class I prices at the current level.

Scenario D - Decrease Class II and Class III prices \$1.00 and decrease the Class I price \$.50.

Scenario E - Decrease Class II and Class III prices \$1.50 and decrease the Class I price \$.50

Scenario F - Assess producers \$0.50 per hundredweight and decrease the support price \$0.50 per hundredweight. Use the assessment as an incentive to cull cows.

Scenario G - Establish production bases and assess producers for excess production; hold support prices at current levels.

Compared to the baseline situation data, production would be down an estimated 104 million pounds for the support price reduction of \$1.00 (Scenario B1) and 158 million pounds for a \$1.50 reduction in support price (Scenario B2). Class I use would increase in the range of 38 to 56 million pounds (Table 19). Milk for Class II and Class III use would decrease a net of 143 to 214 million pounds, or about two to three percent. Total value of milk to producers would range from \$75 million to \$112 million less or down 8 to 12 percent.

The total effect of Scenario C (decrease Class II and Class III prices, but not Class I prices) would be to reduce production about 21 million pounds and income about \$14 million for the Southeast (10). Class I use would remain the same since the price would not be affected. Reducing all Class prices, but by different levels, shows somewhat similar results (Scenarios D and E). Production would decrease 66 million pounds (D) to 73 million pounds (E). Class I use would increase 19 million pounds, while Classes II and III would decrease 85 to 92 million pounds. Total value would be reduced from \$45 to \$51 million compared to the base situation.

Decreasing the support price, which would affect prices for all milk, would have the most severe effect on producer income. Some combination of

Table 19. Utilization, Production, Value of Production, and Blend Prices for Producer Milk, Various Scenarios Related to Support Price Level, Southeastern States, Projected 1983.

State/unit	Scenario B1	Scenario B2	Scenario C	Scenario D	Scenario E
<u>Georgia</u>					
Class I (mil lb)	1,050	1,054	1,042	1,046	1,046
Class II (mil lb)	107	109	107	107	109
Class III (mil lb)	205	187	231	217	213
Total production (mil lb)	1,362	1,350	1,380	1,370	1,368
Value (mil dol)	183.20	175.20	195.50	189.30	187.40
Blend (dol/cwt)	13.45	12.98	14.17	13.82	13.70
<u>Florida</u>					
Class I (mil lb)	1,896	1,903	1,884	1,890	1,890
Class II (mil lb)	206	183	246	225	224
Total production (mil lb)	2,102	2,086	2,130	2,115	2,114
Value (mil dol)	327.20	315.20	348.80	337.90	336.60
Blend (dol/cwt)	15.57	15.11	16.38	15.98	15.92
<u>Louisiana-Mississippi</u>					
Class I (mil lb)	1,294	1,298	1,284	1,289	1,289
Class II (mil lb)	187	191	187	187	191
Class III (Mil lb)	252	229	285	268	261
Total production (mil lb)	1,733	1,718	1,756	1,744	1,741
Value (mil dol)	234.60	224.40	249.90	242.20	239.60
Blend (dol/cwt)	13.54	13.07	14.23	13.89	13.76
<u>South Carolina</u>					
Class I (mil lb)	501	502	497	499	499
Classes II & III (mil lb)	55	49	67	61	60
Total production (mil lb)	556	551	564	560	559
Value (mil dol)	81.20	77.90	87.00	84.10	83.70
Blend (dol/cwt)	14.60	14.14	15.43	15.02	14.97
<u>Alabama</u>					
Class I (mil lb)	488	490	484	486	486
Classes II & III (mil lb)	51	44	62	56	56
Total production (mil lb)	539	534	546	542	542
Value (mil dol)	72.80	69.60	78.30	75.50	75.20
Blend (dol/cwt)	13.51	13.02	14.34	13.93	13.87

decreasing all prices for milk but decreasing prices more for Class II and Class III than for Class I, contains both the features of increasing the sale of milk through commercial channels while reducing production, but results in a more moderate reduction in value of milk to producers. The impact would be more severe in lower utilization markets.

These results are based on short run responses to changes in prices. Unless the price decreases are severe enough to cause wholesale herd disposal and sale of cows for slaughter, the adjustments to price changes will be slow and deliberate.

Longer run results with such price changes will have more effect. Many studies concerning milk supply response in the longer run indicate a much higher elasticity in the range of 0.8 to 1.2. This would mean that changes of \$1.00 to \$1.50 reduction in producer prices which are in the range of 6 to 10 percent would result in production decreases 6 to 10 percent in the longer run, that is in two or three years. Thus, the problem becomes one of the time that may evolve before the desired production adjustments occur.

One policy proposal involves the determination of the support price for milk by means of a formula which is based on the parity price and the level of excess supplies in a previous period. The volume of CCC net purchases of milk would determine the support price level as a percent of parity. Current CCC purchases would direct that the support price be 60 percent of parity, which is about \$11.79 per cwt. This is about \$1.00 under the current support price so the results would be similar to those shown in Scenario B1. However, with a reduction in CCC purchases the support price

would increase the following year so that the longer run results may be an increase in production instead of a decrease.

Cull Cow Incentive Program. A method that would have an immediate effect on milk production would be for dairy farmers to cull low producing milk cows from the herds. Beef prices in 1981-82 have provided little incentive for dairy farmers to sell cows for slaughter beyond those that have disease, health and breeding problems. Therefore, there are cows in many herds that are producing enough to milk to cover variable costs but probably not all costs. Milk producers will not cull their herds unless there is an economic incentive such as high beef prices, a low milk-feed price ratio, or an incentive payment to cull cows beyond an average or normal rate of culling.

Could some kind of incentive be offered through a government program that might bring about culling of dairy cows? How many cows would need to be culled? What would the incentive need to be and the total cost? How would it be operated? In any case such a program would need to be voluntary, which means one could not expect 100 percent participation. Also, would a limit need to be placed on the number of cows that one farmer could cull?

Generally, from the assessment program concepts it could be acceptable for CCC to remove 6 billion pounds of milk for use in various programs. Therefore, using 13.9 billion pounds as the projected CCC removal for 1983 and subtracting 6 billion, then about 7.9 billion pounds reduction would be a goal through reducing cow numbers by culling. Production per cow averaged about 12,175 pounds per cow in 1982. The low end of production

per cow may be assumed to be 80 percent of average or about 9,750 pounds per cow. Therefore, to reduce production 7.9 billion pounds it would require the culling of about 810,000 cows or about seven percent of the U.S. herd and about 44,000 cows in the Southeast.

One way to view the incentive that might be provided is to consider the cost to CCC of taking such milk off the market. At the support price of \$13.10, the 7.9 billion pounds amount to \$1 billion. At an incentive rate paid to producers for culling of \$400 per cow, the total cost would be \$324 million. Thus, the cost-benefit ratio looks reasonable.

The 50 cents assessment in the current program could be placed into a fund that could be used to pay the culling incentive. A method could be established that would allow cows to be sold each month relative to the amount of funds available that month. Thus, production would decrease over a period of six months. Scenario F shows the results of a cull cow incentive program that includes a 50 cents assessment and a 50 cents decrease in the support price (Table 20). It is assumed seven percent of the cows would be culled in the first six months resulting in a reduction of 428 million pounds of milk production for the year for the six states. Total value of production including the value of the incentive would be \$68.5 million less than the base estimate. Since production, and therefore surplus would be reduced substantially, support prices would be expected to increase to \$13.10 or higher for 1984. Since the plan could cause a shortage of milk in Florida, Florida producers may choose to not participate on an equal basis.

Table 20. Utilization, Production, Value of Production, and Blend Prices for Producer Milk, Cow Culling Incentive Plan, Southeastern States, Projected 1983.

Item/unit	Scenario F					Total
	Georgia	Florida	Louisiana- Mississippi	South Carolina	Alabama	
Class I (mil lb)	1,046	1,189	1,289	500	487	5,211
Class II (mil lb)	105	116	183			404
Class III (mil lb)	144	--	159	31 ^a	20 ^a	354
Total production (mil lb)	1,295	2,005	1,631	531	507	5,969
Value (mil dol)	175.4	315.6	222.8	78.3	69.1	861.2
Blend (dol/cwt)	13.55	15.74	13.66	14.75	13.62	14.43
Value including incentive for culling (mil dol)	179.1	320.9	228.4	79.6	70.9	905.3
Number cows culled (thou)	9.1	13.3	13.9	3.4	4.4	44.1

^a Class II and Class III combined.

There would be problems inherent in administering the culling program. All producers would not participate equally, some producers would replace culled cows with two-year-old replacement heifers and a dairy cow would have to be clearly defined. Spreading the culling over a six-month period would have a less devastating affect on the beef market. The program would decrease production quickly, it would be producer financed through the assessment and it would cure the ills of the surplus problem without dragging it out for two or three years.

There are other administrative problems associated with a cow culling plan. Normal turnover, or culling rate, is relatively high (27 to 30 percent) and such an incentive program would have to increase normal culling to have an effect. Advance notification of a plan could ruin its effectiveness, as producers might hold back cull cows in order to collect the incentive payment. Further, a culling plan could have a short-term impact on reducing milk production and would not bring about longer-term supply adjustments.

A Modified Base-Excess Plan. There are several versions of base plans that have been offered as a solution to the excess production plan. A somewhat simple one is analyzed in this paper. The premise is that the plan begins from the current situation with the supply-demand balance or base calculated from two previous marketing years and the projected current marketing year. The national base and excess is determined as follows:

	FY 1980-81	FY 1981-82	FY 1982-83	Average
	----- bil lb -----			
Marketings	129.4	132.0	135.3	132.2
Beginning stocks	6.1	5.3	4.5	5.3
Imports	2.3	2.4	2.4	2.4
Total supply	<u>137.8</u>	<u>139.7</u>	<u>142.2</u>	<u>139.9</u>
Commercial use	119.8	120.8	123.3	121.3
Ending stocks	5.3	5.1	5.0	5.1
Government purchase	5.0	5.0	5.0	5.0
Total use	<u>130.1</u>	<u>130.9</u>	<u>133.3</u>	<u>131.4</u>

The producers national base is determined by dividing total use by total supply (131.4/139.9); thus the national producer base would be 96 percent of marketings.

Each producer would have a base equal to 96 percent of marketings based on the last marketing year. Depending on the market for each producer the base would be first used to fill Class I and Class II needs. The difference between a producer base and the sum of Class I and II would receive the Class III price. For any milk marketed over base and not utilized as above, the producer would be required to pay an assessment through a reduced blend price.

It is assumed under the plan that the support price would remain at the current level of \$12.80 (3.5 percent) for the first year and adjusted upward on the basis of 70 percent of parity as soon as the use/supply equal 100.

The results of such a plan on the six Southeastern States are shown in Table 21. It is assumed that utilizations would be the same as the base data except for that milk in excess. Class prices are higher, reflecting a support price of \$12.80 with prices for manufactured milk (the M-W price)

Table 21. Estimated Milk Marketed, Value, and Blend Prices for Producer Milk Under a Base Plan, Southeastern States, Projected 1983.

Market	Scenario G		
	Estimated marketings	Estimated price	Estimated value
	mil lb	dol/cwt	mil dol
<u>Georgia</u>			
Class I	1,042	15.40	160.5
Class II	103	12.90	13.3
Class III	158	12.80	20.2
Total (base)	1,303	14.89	194.0
Excess	83	12.80	-10.6
Total marketings	1,386	13.23	183.4
<u>Florida</u>			
Class I	1,884	17.34	326.7
Class II	250	12.90	32.3
Total (base)	2,006	16.82	359.0
Excess	0	0	0
Total marketings	2,134	16.82	359.0
<u>Louisiana</u>			
<u>Mississippi</u>			
Class I	1,284	15.57	199.9
Class II	180	12.90	23.2
Class III	194	12.80	24.8
Total (base)	1,658	14.95	247.9
Excess	106	12.80	-13.6
Total marketings	1,764	13.28	234.3
<u>South Carolina</u>			
Class I	497	15.95	79.3
Classes II & III	34	12.80	4.4
Total (base)	531	15.76	83.7
Excess	34	12.80	-4.4
Total marketings	565	14.04	79.3
<u>Alabama</u>			
Class I	484	15.04	72.8
Classes II & III	31	12.80	4.0
Total (base)	515	14.91	76.8
Excess	33	12.80	-4.2
Total marketings	548	13.25	72.6

to be near the support price since the cost of the excess milk would be paid for by producers by reduced blend prices depending on their base marketing balance. If marketings did not change, the overall blend in Georgia, for example, was estimated at \$13.23 or \$1.66 less to pay for the excess. If producers marketed only their base in Georgia the blend would be an estimated \$14.89.

The base plan would not penalize Florida producers since their base was less than Class I and II needs. Therefore, high utilization markets would be benefitted. The total value for all milk would be an estimated \$928.6 million for the six states if producers followed the expected marketings. However, if all producers marketed only their base, the total value would increase to \$961 million. The plan as shown is designed for producers to make a choice. If they produce excess then they will be assessed to pay for the government costs of the excess.

Such a plan would require substantial new regulations and would require a good deal of administration especially in the initial phases. Producers would probably reduce production when they realized the differences in their gross incomes. Production would be frozen to current locations with interregional movements of milk rather restricted. The plan does allow producers as individuals to make a choice, and it does allow for differences among markets that have differing utilization patterns.

Tables 22, 23 and 24 summarize and show the expected direction of changes in the various factors affecting the dairy industry as a result of the several alternatives analyzed. All alternatives are expected to result in decreased production, decreased prices and gross income to producers and

Table 22. Summary of Class Utilization of Producer Milk, Blend Price and Total Value, Under Various Scenarios, Southeastern States, Projected, 1983.

State		Class	Class	Class	Total	Blend	Total
		I	II	III	Volume	price	value
		-----mil lb-----				dol/cwt	mil dol
Georgia							
	Baseline	1,042	103	241	1,386	14.40	199.5
	Scenario A1	1,042	103	229	1,374	13.91	191.1
	A2	1,042	103	154	1,299	13.78	179.0
	B1	1,050	107	205	1,362	13.45	183.2
	B2	1,054	109	187	1,350	12.98	175.2
	C	1,042	107	231	1,380	14.17	195.5
	D	1,046	107	217	1,370	13.82	189.3
	E	1,046	109	213	1,368	13.70	187.4
	F	1,046	105	144	1,295	13.55	179.1 ^a
	G	1,042	103	158	1,386 ^b	13.23	183.4
Florida							
	Baseline	1,884	250	-	2,134	16.48	351.7
	Scenario A1	1,884	234	-	2,118	16.01	339.1
	A2	1,884	119	-	2,003	15.99	320.3
	B1	1,896	206	-	2,102	15.57	337.2
	B2	1,903	183	-	2,086	15.11	315.2
	C	1,884	246	-	2,130	16.38	348.8
	D	1,890	225	-	2,115	15.98	347.9
	E	1,890	224	-	2,114	15.92	336.6
	F	1,889	116	-	2,005	15.74	320.9 ^a
	G	1,884	250	-	2,134	16.82	359.0
Louisiana and Mississippi							
	Baseline	1,284	180	300	1,764	14.49	255.6
	Scenario A1	1,284	180	285	1,749	14.01	245.0
	A2	1,284	180	190	1,654	13.87	229.4
	B1	1,294	187	252	1,733	13.54	234.6
	B2	1,298	191	229	1,718	13.07	224.4
	C	1,284	187	285	1,756	14.23	249.9
	D	1,289	187	268	1,744	13.89	242.2
	E	1,289	191	261	1,741	13.76	239.6
	F	1,289	183	159	1,631	13.66	228.4 ^a
	G	1,284	180	194	1,764 ^b	13.28	234.3

Table 22. cont'd

State	Class	Class	Class	Total	Blend price	Total value
	I	II	III			
	-----mil lb-----				dol/cwt	mil dol
South Carolina						
Baseline	497	-	68 ^C	565	15.53	87.8
Scenario A1	497	-	63	560	15.07	84.4
A2	497	-	33	530	14.98	79.4
B1	501	-	55	556	14.60	81.2
B2	502	-	49	551	14.14	77.9
C	497	-	67	564	15.43	87.0
D	499	-	61	560	15.02	84.1
E	499	-	60	559	14.97	83.7
F	500	-	31	531	14.75	79.6 ^a
G	497	-	34	565 ^b	14.04	79.3
Alabama						
Baseline	484	-	64 ^C	548	14.45	79.2
Scenario A1	484	-	59	543	13.96	75.8
A2	484	-	29	513	13.82	70.9
B1	488	-	51	539	13.51	72.8
B2	490	-	44	534	13.02	69.6
C	484	-	62	546	14.34	78.3
D	486	-	56	542	13.93	75.5
E	486	-	56	542	13.87	75.2
F	487	-	21	507	13.62	70.9 ^a
G	484	-	31	548 ^b	13.25	72.6

^a Includes incentive received for cows sold.

^b Total includes excess marketings.

^c Class II and Class III combined.

Source: Tables 18 and 19.

Table 23. Summary of Utilization of Producer Milk, Production, Total Value and Blend Price, Under Various Scenarios, Southeastern States, Projected, 1983.

Scenario	Class I	Classes		Total production	Total value	Blend price	Production under various scenarios minus baseline	Total value under various scenarios minus value of baseline
		II & III						
	-----	mil lb	-----	mil dol	dol/cwt	mil lb	mil dol	
Baseline	5,191	1,206	6,397	973.8	15.22	0	0	
A1	5,191	1,153	6,344	935.4	14.75	-53	-38.4	
A2	5,191	808	5,999	879.0	14.65	-398	-94.8	
B1	5,229	1,063	6,292	899.0	14.29	-104	-74.8	
B2	5,247	992	6,239	862.3	13.82	-158	-111.5	
C	5,191	1,185	6,376	959.5	15.05	-21	-14.3	
D	5,210	1,121	6,331	929.0	14.67	-66	-44.8	
E	5,210	1,114	6,324	922.5	14.59	-73	-51.3	
F	5,211	758	5,969	905.3	14.43	-428	-68.5	
G	5,191	1,206 ^a	6,397	928.6 ^b	14.52	0	-45.2	

^a Includes 256 million pounds excess.

^b Total value with no excess would equal \$961.4 million.

Source: Table 22

Table 24. Expected Direction of Changes in Various Factors Affecting Milk Production, Demand and Prices Under Various Policy Alternatives.

Scenario ^a	Milk production	Fluid milk demand	Prices to producers	Prices to consumers	Gross income to producers	Class III milk
A1	dec	nch	dec	nch	dec	dec
A2	dec	nch	dec	nch	dec	dec
B1	dec	inc	dec	dec	dec	dec
B2	dec	inc	dec	dec	dec	dec
C	dec	nch	dec	dec	dec	dec
D	dec	inc	dec	dec	dec	dec
E	dec	inc	dec	dec	dec	dec
F	dec	inc	dec	dec	dec	dec
G	dec	nch	dec	inc	dec	dec

dec = decrease, nch = no change, inc = increase.

a

A1 50 cents assessment.

A2 \$1.00 assessment with 50 cents refund.

B1 Decrease support price \$1.00.

B2 Decrease support price \$1.50.

C Decrease Class II & III price \$1.00, no change in Class I price.

D Decrease Class II & III price \$1.00, decrease Class I price 50 cents.

E Decrease Class II & III price \$1.50, decrease Class I price 50 cents.

F Assess 50 cents, decrease support price 50 cents, pay to cull cows.

G Base-excess plan with assessment for producing excess milk.

less Class III or surplus milk. Fluid milk demand is dependent on the direction of support prices changes that would be expected to be reflected in market prices at the retail level. The base plan may increase consumer prices slightly but not enough to result in much change in demand. These changes are all short run; the analysis does not carry over into several marketing years.

LITERATURE CITED

- (1) Federal Register. Proposed Rules Governing Certain Deductions of Milk Marketings of Producers. 7 CFR. Part 1430, 47:243, p. 56500. Dec. 17, 1982.
- (2) State of South Carolina, et al. vs John R. Block, USDA. Civil Action no. 82-3172-0. Memorandum Opinion and Order. U.S. District Court, South Carolina, Columbia Division. Jan 10, 1983.
- (3) Costs and Returns of Producing Milk in the United States - 1979, 1980 and Preliminary 1981. Prepared by ERS, USDA for the Committee on Agriculture, Nutrition, and Forestry, United States Senate 97th Congress. 1982.
- (4) Milk Production, Disposition, Income 1979-81. SRS. USDA. DA 1-2. 1982.
- (5) Wilson, Lowell E. et al. The Emerging Structure of the Southern Dairy Industry. Sou. Coop. Series Bull. 224. Ala. Agr. Exp. Sta. 1978.
- (6) Gauthier, Wayne M., M. Heagler and Ernest A. Keith. Relationships Among the Milk Price Support Program, the Federal Milk Order Program and Structural Changes on Dairy Farms. Manuscript under review for publication. La. Agr. Exp. Sta., Louisiana State University Agricultural Center. 1983.
- (7) World Agricultural Supply and Demand Estimates, ERS/FAS. USDA. Dec. 13, 1982.
- (8) Shaw, Charles N. "Support Program for Milk, 1982-83 Marketing Year" Final Regulatory Impact Analysis. ASCS, USDA. Sept. 1982.
- (9) Hallberg, M.C. et al. Impact of Alternative Federal Milk Marketing Pricing Policies on the United States Industry. Pennsylvania State Univ. Coll. of Agr. Exp. Sta. Bul. 818, 1978.
- (10) Barber, J. Roger. A proposal to Reduce Government Expenditures and U.S. Milk Production. A report of the Commissioner, New York State Department of Agriculture and Markets. Fall 1982.

Appendix Table 1. Milk Production by States and Regions, 1978 to 1982 with Comparisons.

State and region	1978	1979	1980	1981 ^a	1982 ^a	1982 as percent of U.S. total	Increase in milk production from:				
							1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1978 to 1982
	-----million pounds-----					percent	-----million pounds-----				
Northeast											
Maine	641	641	665	699	737	.5	0	24	34	38	96
New Hampshire	341	341	347	344	366	.3	0	6	-3	22	25
Vermont	2,136	2,179	2,289	2,301	2,323	1.7	43	110	12	22	187
Massachusetts	571	566	570	578	596	.4	-5	4	8	18	25
Rhode Island	55	50	47	46	46	b	-5	-3	-1	0	-9
Connecticut	612	606	612	620	641	.5	-6	6	8	21	29
New York	10,408	10,630	10,974	11,093	11,185	8.3	222	344	119	92	777
New Jersey	525	494	494	494	492	.4	-31	0	0	-2	-33
Pennsylvania	7,881	8,084	8,496	8,965	9,264	6.9	203	412	469	299	1,383
Delaware	129	127	125	124	131	.1	-2	-2	-1	7	2
Maryland	<u>1,540</u>	<u>1,520</u>	<u>1,520</u>	<u>1,556</u>	<u>1,589</u>	<u>1.2</u>	<u>-20</u>	<u>0</u>	<u>36</u>	<u>33</u>	<u>49</u>
Total	24,839	25,238	26,139	26,820	27,370	20.3	399	901	681	550	2,531
Lake States											
Michigan	4,793	4,830	4,970	5,103	5,267	3.9	37	140	133	164	474
Wisconsin	21,152	21,850	22,380	22,705	22,724	16.8	598	530	325	19	1,472
Minnesota	<u>9,089</u>	<u>9,145</u>	<u>9,535</u>	<u>10,061</u>	<u>10,339</u>	<u>7.6</u>	<u>56</u>	<u>390</u>	<u>526</u>	<u>278</u>	<u>1,250</u>
Total	35,134	35,825	36,885	37,869	38,330	28.3	691	1,060	984	461	3,196
Corn States											
Ohio	4,275	4,265	4,310	4,385	4,550	3.4	-10	45	75	165	275
Indiana	2,178	2,175	2,210	2,282	2,334	1.7	-3	35	72	52	156
Illinois	2,403	2,391	2,540	2,604	2,657	2.0	-12	149	64	53	254
Iowa	3,960	3,920	4,108	4,298	4,301	3.2	-40	188	190	3	341
Missouri	<u>2,746</u>	<u>2,714</u>	<u>2,826</u>	<u>2,877</u>	<u>2,871</u>	<u>2.1</u>	<u>-32</u>	<u>112</u>	<u>51</u>	<u>-6</u>	<u>125</u>
Total	15,562	15,465	15,994	16,446	16,713	12.4	-97	529	452	267	1,151

Appendix Table, 1 (cont'd)

State and region	1978	1979	1980	1981 ^a	1982 ^a	1982 as percent of U.S total	Increase in milk production from:				
							1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1978 to 1982
	-----million pounds-----					percent	-----million pounds-----				
Northern Plains											
North Dakota	903	874	939	963	973	.7	-29	65	24	10	70
South Dakota	1,600	1,549	1,669	1,757	1,760	1.3	-51	120	88	3	161
Nebraska	1,269	1,260	1,315	1,400	1,360	1.0	-9	55	85	-40	91
Kansas	<u>1,375</u>	<u>1,330</u>	<u>1,330</u>	<u>1,397</u>	<u>1,365</u>	<u>1.0</u>	<u>-45</u>	<u>0</u>	<u>67</u>	<u>-32</u>	<u>-10</u>
Total	5,147	5,013	5,253	5,517	5,458	4.0	-134	240	264	-59	311
Appalachian											
Virginia	1,902	1,937	1,974	2,009	2,034	1.5	35	37	35	25	132
West Virginia	342	350	350	350	352	.3	8	0	0	2	10
North Carolina	1,557	1,565	1,631	1,654	1,676	1.2	8	66	23	22	119
Kentucky	2,274	2,220	2,219	2,281	2,344	1.7	-54	-1	62	63	70
Tennessee	<u>2,124</u>	<u>2,091</u>	<u>2,241</u>	<u>2,296</u>	<u>2,326</u>	<u>1.7</u>	<u>-33</u>	<u>150</u>	<u>55</u>	<u>30</u>	<u>202</u>
Total	8,199	8,163	8,415	8,590	8,732	6.4	-36	252	175	142	533
Southeast^c											
South Carolina	516	542	541	552	575	.4	26	-1	11	23	59
Georgia	1,305	1,338	1,367	1,396	1,410	1.0	33	29	29	14	105
Florida	1,948	1,996	2,028	2,082	2,109	1.6	48	32	54	27	161
Alabama	631	606	610	582	563	.4	-25	4	-28	-19	-68
Mississippi	836	814	817	845	873	.6	-22	3	28	28	37
Louisiana	<u>1,063</u>	<u>1,022</u>	<u>1,012</u>	<u>993</u>	<u>957</u>	<u>.7</u>	<u>-41</u>	<u>-10</u>	<u>-19</u>	<u>-36</u>	<u>-106</u>
Total	6,299	6,318	6,375	6,450	6,487	4.7	19	57	75	37	188
Southern Plains and Arkansas											
Oklahoma	1,090	1,070	1,110	1,150	1,159	.9	-20	40	40	9	69
Texas	3,433	3,377	3,625	3,665	3,770	2.8	-56	248	40	105	337
Arkansas	<u>729</u>	<u>725</u>	<u>745</u>	<u>793</u>	<u>821</u>	<u>.6</u>	<u>-4</u>	<u>20</u>	<u>48</u>	<u>28</u>	<u>92</u>
Total	5,252	5,172	5,480	5,608	5,750	4.3	-80	308	128	142	498

Appendix Table, 1 (cont'd)

State and region	1982 as percent of U.S total					Increase in milk production from:					
	1978	1979	1980	1981 ^a	1982 ^a	1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1978 to 1982	
	-----million pounds-----					percent	-----million pounds-----				
Mountain											
Montana	306	297	314	331	341	.3	-9	17	17	10	35
Idaho	1,633	1,721	1,947	2,160	2,256	1.7	88	226	213	96	623
Wyoming	117	119	132	136	138	.1	2	13	4	2	21
Colorado	872	857	858	928	972	.7	-15	1	70	44	100
New Mexico	458	507	602	670	811	.6	49	95	68	141	353
Arizona	906	941	1,031	1,133	1,214	.9	35	90	102	81	308
Utah	940	948	1,028	1,110	1,161	.9	8	80	82	51	221
Nevada	187	199	219	222	227	.2	12	20	3	5	40
Total	5,419	5,589	6,131	6,690	7,120	5.4	170	542	559	430	1,701
Pacific											
Washington	2,669	2,817	2,942	3,017	3,196	2.4	148	125	75	179	527
Oregon	1,065	1,103	1,169	1,220	1,279	.9	38	66	51	59	214
California	11,859	12,563	13,577	14,244	14,576	10.8	704	1,014	667	332	2,717
Total	15,593	16,483	17,688	18,481	19,051	14.1	890	1,205	793	570	3,458
Alaska	14.8	13	13	13	14	b	-1.8	0	0	1	-.8
Hawaii	150	150	152	150	144	.1	0	2	-2	-6	-6
United States	121,609	123,411	128,525	132,634	135,169	100.0	1,802	5,114	4,109	2,535	13,560

^a Preliminary. ^b Less than 0.05 percent. ^c Includes Alabama, Florida, Georgia, Louisiana, Mississippi and South Carolina.

Source: Dairy Outlook and Situation. ERS, USDA; Milk Production. SRS, USDA.

