

New York Economic Handbook 1999



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This publication contains information pertaining to the general economic situation and New York agriculture. It is prepared primarily for use of professional agricultural workers in New York State. USDA reports provide current reference material pertaining to the nation's agricultural situation.

Current Economic Situation is a monthly release that carries the latest figures for selected economic indicators and highlights current developments. This release is a supplement to the Economic Handbook and is available to anyone. You may access this series at our Web site (<http://www.cals.cornell.edu/dept/arme/extends/ces/index.htm>), or you may request hard copy by writing to the Department Extension Program Secretary, Department of Agricultural, Resource, and Managerial Economics, Warren Hall, Cornell University, Ithaca, NY 14853-7801.

Chapter 1. Economic Situation

William G. Tomek, Professor

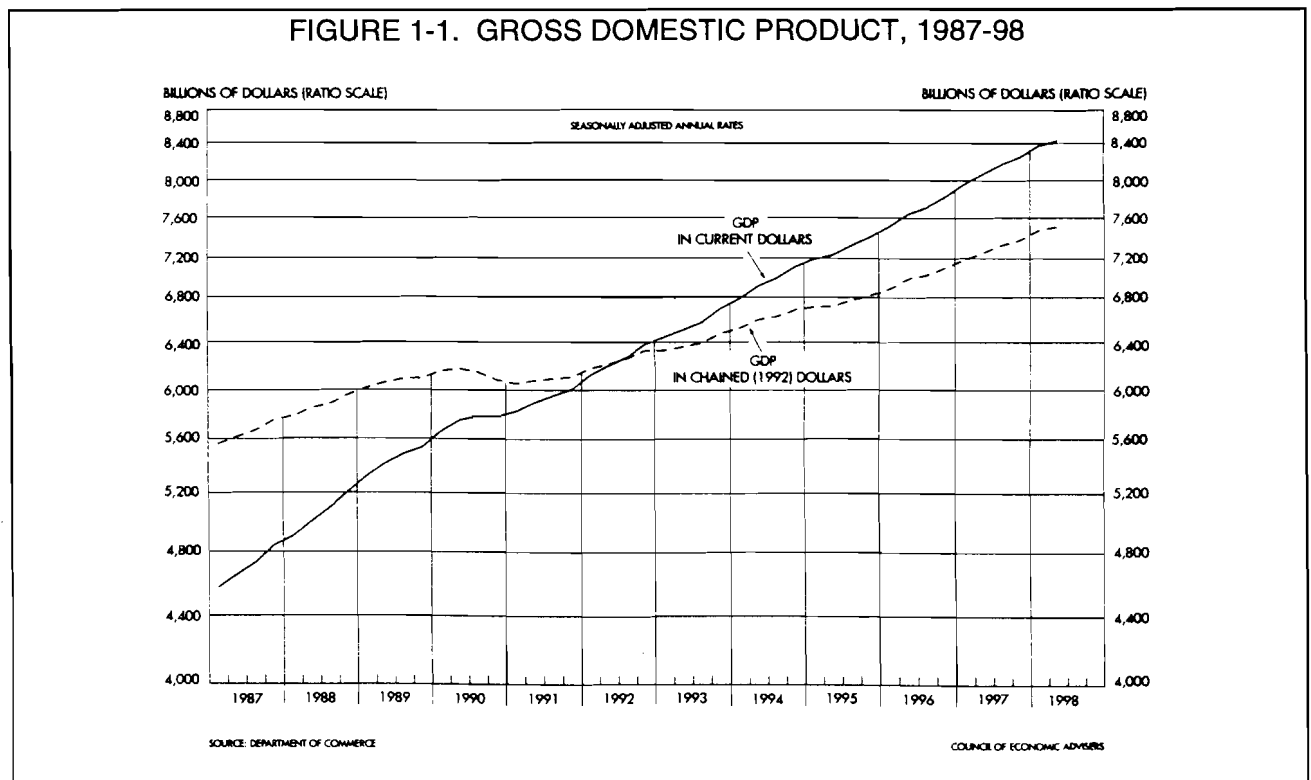
This chapter discusses the current economic situation, long-run trends in population and their implications, and developments in the agricultural sector. The last section summarizes views about the outlook for 1999.

Current Situation

The U.S. economy in 1998 has out-performed expectations. The growth rate in Gross Domestic Product (GDP) declined from 1997, but is larger than forecast a year ago. The rate of inflation and interest rates are lower than expected. The rate of unemployment is also below the expected rate. Notwithstanding the volatility of stock market prices, the U.S. economy performed well in 1998.

Nominal GDP crossed \$8.5 trillion this year (Figure 1-1). The five trillion milestone was reached in 1988, and we will reach 10 trillion early in the next century. (The one trillion mark was crossed in 1970.) After a dip in 1990-91, real GDP has been growing steadily. Annual growth rates in real GDP have ranged from 2.3% to 3.9% in the past seven years (including 1998). This growth has not resulted in an acceleration of inflation. Indeed, the rate of inflation has declined over the seven-year period.

FIGURE 1-1. GROSS DOMESTIC PRODUCT, 1987-98



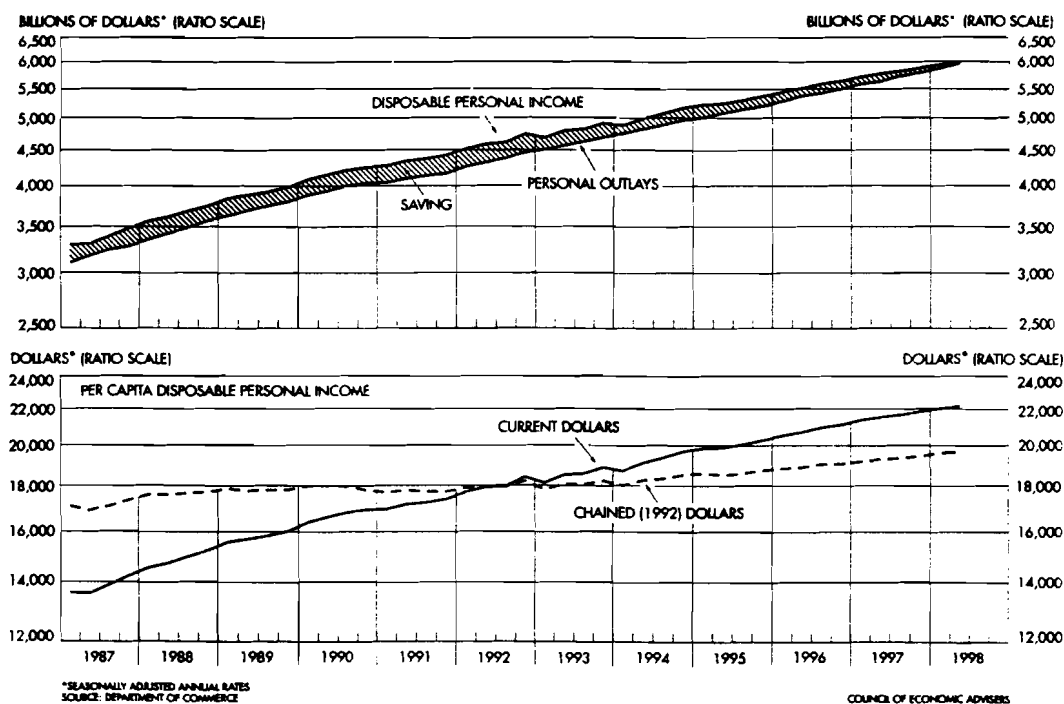
As Table 1-1 indicates, recent growth has been driven by personal consumption expenditures. Per capita disposable income has grown, both in nominal and real terms, and consumers are saving less (Figure 1-2 and Table 1-2). Indeed, saving as a percent of disposable income has declined to near zero.

TABLE 1-1. COMPONENTS OF GROSS DOMESTIC PRODUCT, 1989-98

Year	Gross domestic product	Personal consumption expenditures	Gross private domestic investment	Government purchases of goods and services	Net exports of goods and services
----- billions of current dollars -----					
1989	5,439	3,595	829	1,095	-80
1990	5,744	3,839	800	1,176	-71
1991	5,917	3,975	736	1,226	-20
1992	6,244	4,220	790	1,264	-30
1993	6,558	4,459	876	1,283	-61
1994	6,947	4,717	1,008	1,313	-91
1995	7,270	4,954	1,043	1,356	-84
1996	7,662	5,216	1,132	1,405	-91
1997	8,111	5,494	1,256	1,455	-93
1998-I ^a	8,384	5,676	1,367	1,465	-124
-II	8,441	5,774	1,345	1,481	-159
-III	8,526	5,843	1,362	1,491	-169

^a Annualized rates.

FIGURE 1-2. DISPOSITION OF PERSONAL INCOME, 1987-98



Personal disposable income in New York State has not grown quite as fast as in the rest of the nation, in percentage terms. But average incomes in New York are larger than the country as a whole. Thus, the dollar growth in incomes in New York is somewhat larger than for the nation (Table 1-2).

TABLE 1-2. PER CAPITA DISPOSABLE INCOME, SAVING, AND POPULATION, 1991-98

Year	Disposable personal income		Saving as percent of disposable income	Population
	U.S.	NYS		
	--- \$ per capita ---		percent	millions
1991	17,179	20,192	5.6	252.7
1992	18,029	21,184	5.7	255.4
1993	18,558	21,588	4.4	258.2
1994	19,251	22,310	3.5	260.7
1995	20,050	23,434	3.4	263.2
1996	20,840	24,416	2.9	265.6
1997	21,633	25,206	2.1	267.8
1998 ^a	22,192	--	0.4	269.9

^a Second quarter, annual rate.

Increases in consumer spending include the purchases of homes, appliances, and new vehicles. For the first 10 months of 1998, new vehicle sales were 3% above the robust level of 1997. Investment in private residents and sales of new homes grew in 1998 (Figure 1-3 and Table 1-3). New construction expenditures by governments were flat, which is consistent with the slowing of governmental expenditures both at the national and local levels.

The federal budget had a surplus of \$70 billion for the fiscal year ending September 30, 1998. This is a small percent of total outlays of almost \$1.7 trillion, but it does mark a “psychological” break-through after many years of deficits (Figure 1-4). State and local governments, in the aggregate, also have a surplus of over \$100 billion.

Governmental surpluses are a type of saving, and some government expenditures, like those on education, can be seen as an investment. These kinds of saving and investment are an offset, to some degree, to the decreased saving out of personal income. It also should be noted that the low saving rate, relative to personal income, may reflect a wealth effect. That is, with the rise in the price of common stocks, the wealth of stockholders increases, but this is not measured by the saving rate. Larger wealth encourages additional expenditures. Hence, expenditures as a percent of income rise.

A composite stock price index is shown in Figure 1-5. These prices are variable, but the general trend has been upward. In recent months, the prices of common stocks have been especially volatile, and this may be a dampening factor on consumer expenditures. The volatility is a consequence of the large uncertainty attached to the current economic outlook (discussed in the last section).

Industrial production continued to increase in 1998. This reflected growth in most sectors, except defense and space equipment (Table 1-4 and Figure 1-6). Revised data indicate that the utilization of available industrial capacity was smaller than thought a year ago. Compensation of workers is estimated to grow almost 4% in 1998, but labor productivity is up about 1.7%. Thus, unit labor costs are up about 2% (Table 1-5).

FIGURE 1-3. COMPONENTS OF GROSS PRIVATE DOMESTIC INVESTMENT, 1992 DOLLARS

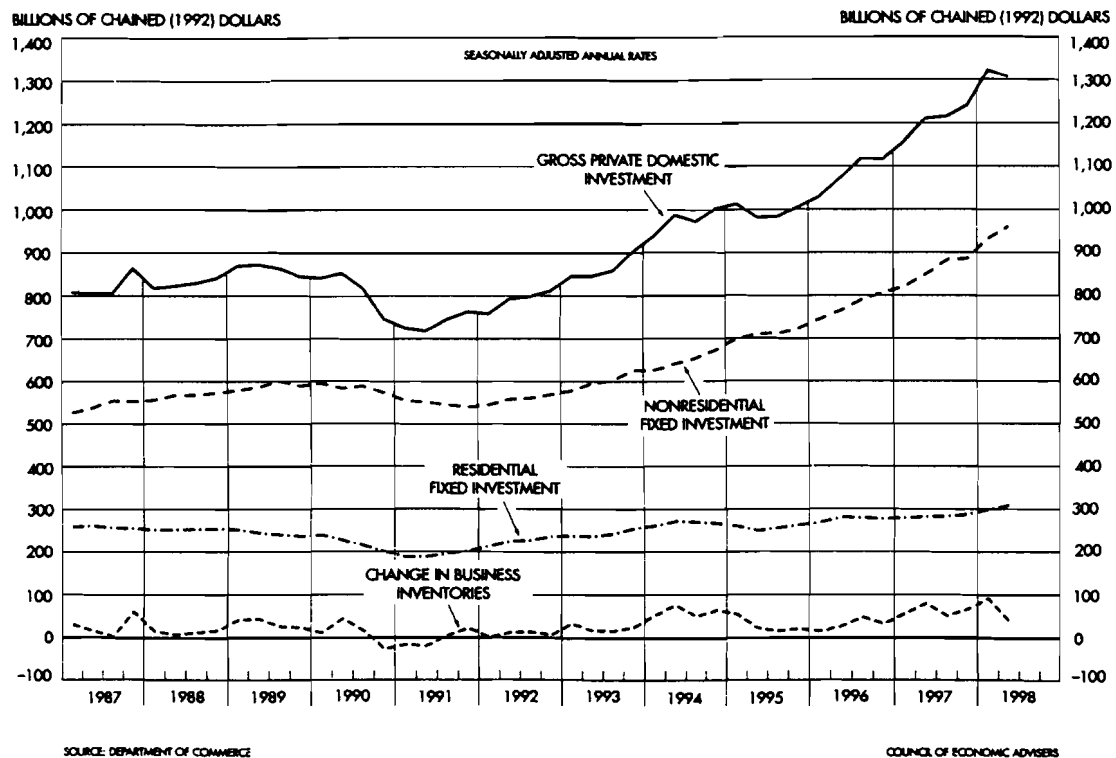


TABLE 1-3. NEW CONSTRUCTION, 1989-98

Year	Total new construction	Private residential	Private commercial industrial	Federal, state & local	New private housing	Private housing permits	New private homes sold
----- billions of dollars -----				----- 1,000 units -----			
1989	470	197	118	98	1,376	1,338	650
1990	468	183	119	108	1,193	1,111	534
1991	424	158	94	110	1,014	949	509
1992	452	188	82	116	1,200	1,095	610
1993	479	210	84	116	1,288	1,199	666
1994	520	239	93	120	1,457	1,372	670
1995	538	231	108	131	1,354	1,332	667
1996	584	256	120	137	1,477	1,426	757
1997	618	266	128	147	1,474	1,441	804
1998 ^a	651	297	128	147	1,706	1,581	877

^a Annualized rate for July 1998.

FIGURE 1-4. FEDERAL GOVERNMENT RECEIPTS AND OUTLAYS, 1989-98

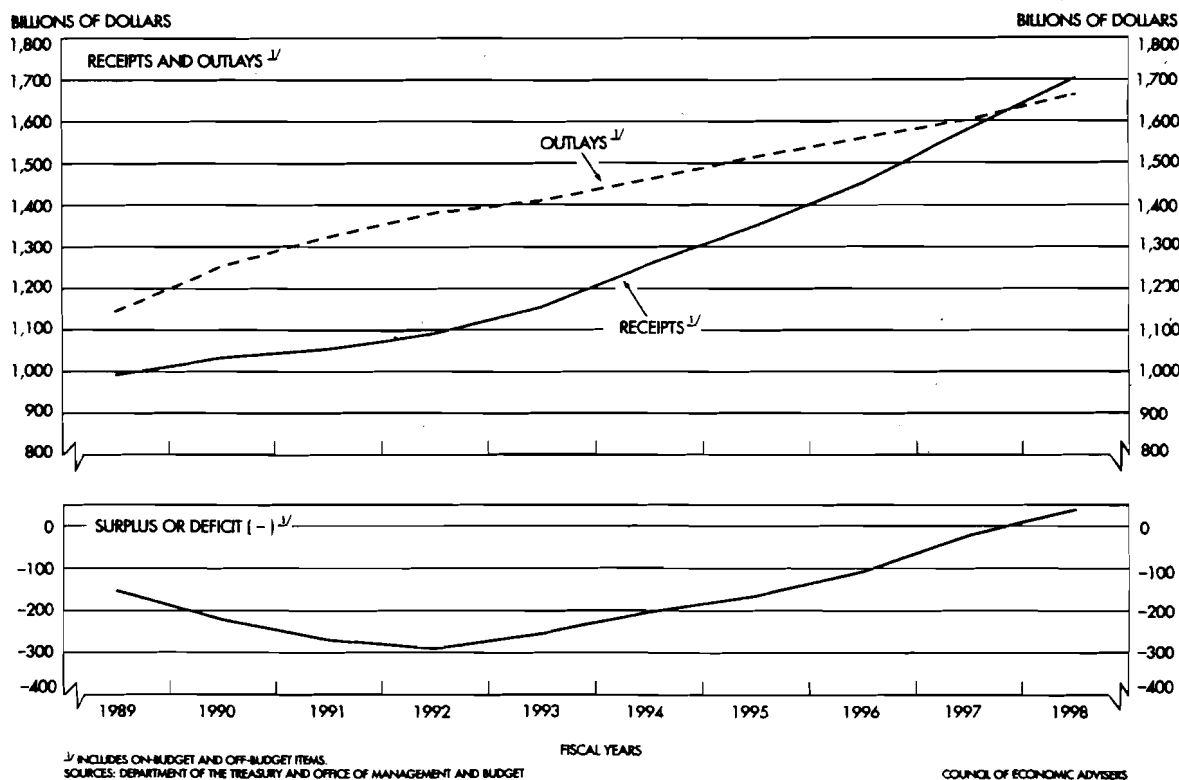


FIGURE 1-5. COMMON STOCK PRICES AND YIELDS, 1990-98

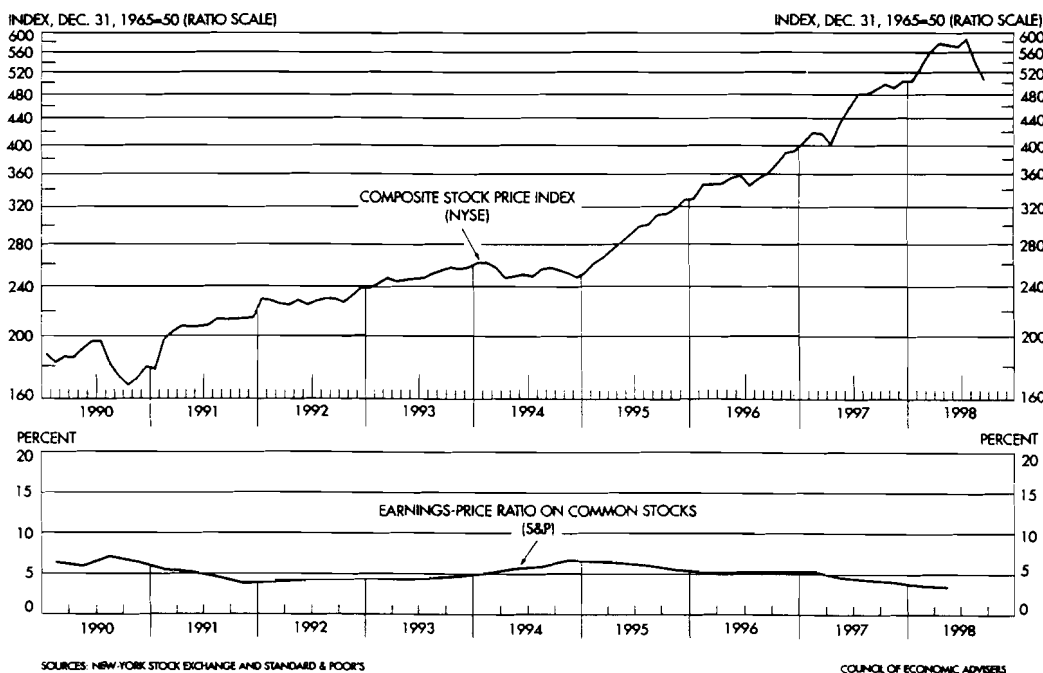


TABLE 1-4. INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION, 1989-98

Year	Indexes of:			Capacity utilization rate
	Total production	Manufacturing	Utilities	
	----- 1992 = 100 -----			percent
1989	99.1	99.0	97.1	84.1
1990	98.9	98.5	98.3	82.3
1991	97.0	96.2	100.4	79.3
1992	100.0	100.0	100.0	80.2
1993	103.6	103.8	103.9	81.3
1994	109.2	110.0	105.3	83.1
1995	114.5	116.0	109.0	83.4
1996	118.5	120.2	112.5	82.4
1997	124.5	127.0	112.5	82.7
1998 ^a	128.7	131.3	120.2	81.1

^a September 1998.

FIGURE 1-6. MEASURES OF INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION, 1994-98

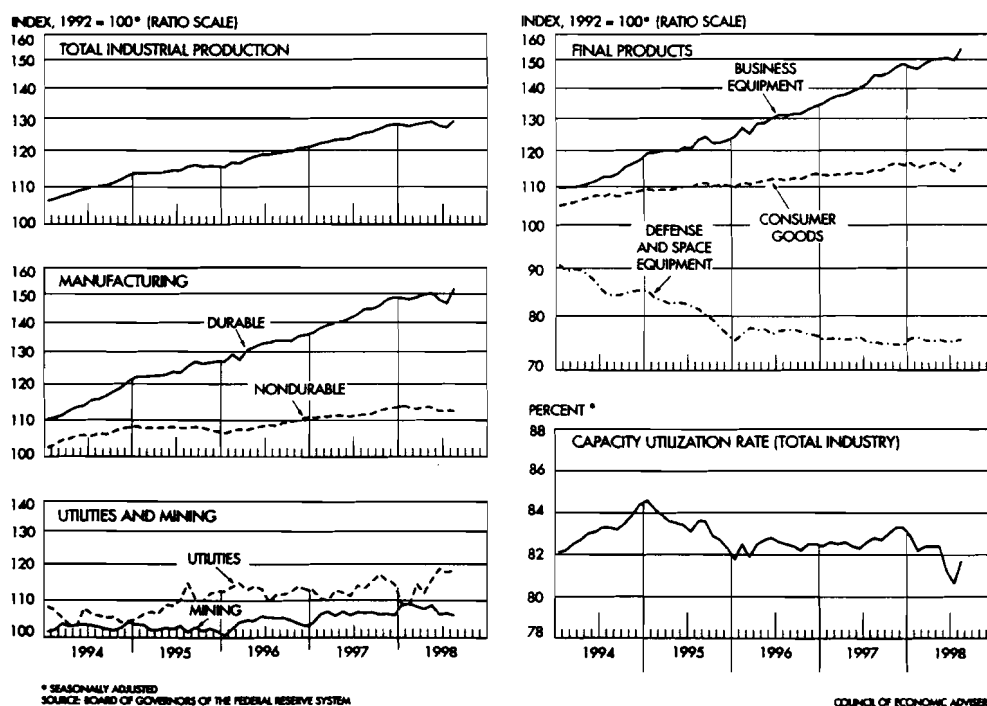


TABLE 1-5. INDEXES OF LABOR PRODUCTIVITY AND COMPENSATION, BUSINESS SECTOR, 1989-98			
Year	Output per hour	Compensation per hour	Unit labor costs
		1992 = 100	
1989	95.1	85.8	89.9
1996	103.7	110.7	106.8
1997	105.4	114.9	109.0
1998 ^a	107.2	119.4	111.3

^a Second quarter, seasonally adjusted.

Source: Department of Labor, Bureau of Labor Statistics.

Economic growth results in a strong demand for labor. The rate of unemployment has averaged 4.5% for the first 10 months of 1998, down from 4.9% in all of 1997 (Table 1-6 and Figure 1-7). The New York State economy has lagged the national economy, with the unemployment rate persisting at above 6% through March 1998. The state's unemployment rate has now decreased to 5.5%.

TABLE 1-6. UNEMPLOYMENT RATE, NYS AND US												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	--- Percent ---											
1997												
NYS	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.4	6.4	6.3	6.2	6.1
U.S.	5.3	5.3	5.2	5.0	4.8	5.0	4.9	4.9	4.9	4.8	4.6	4.7
1998												
NYS	6.0	6.2	6.1	5.8	5.7	5.5	5.5	5.3	5.5	--	--	--
U.S.	4.7	4.6	4.7	4.3	4.3	4.5	4.5	4.5	4.6	4.6	--	--

Source: Bureau of Labor Statistics.

Producer prices decreased in 1998. This reflects, in part, the recession in parts of the world. Thus, commodity prices are down dramatically (Table 1-7). Indeed, there has been more concern about deflation, worldwide, than about inflation. The CPI was up 1.5% in September 1998 as compared with September a year earlier. This lack of inflation is broadly based, with most components of the index showing little growth. The transportation component of the index is down because of the lower prices of oil (Table 1-8).

FIGURE 1-7. U.S. EMPLOYMENT AND UNEMPLOYMENT, 1990-98

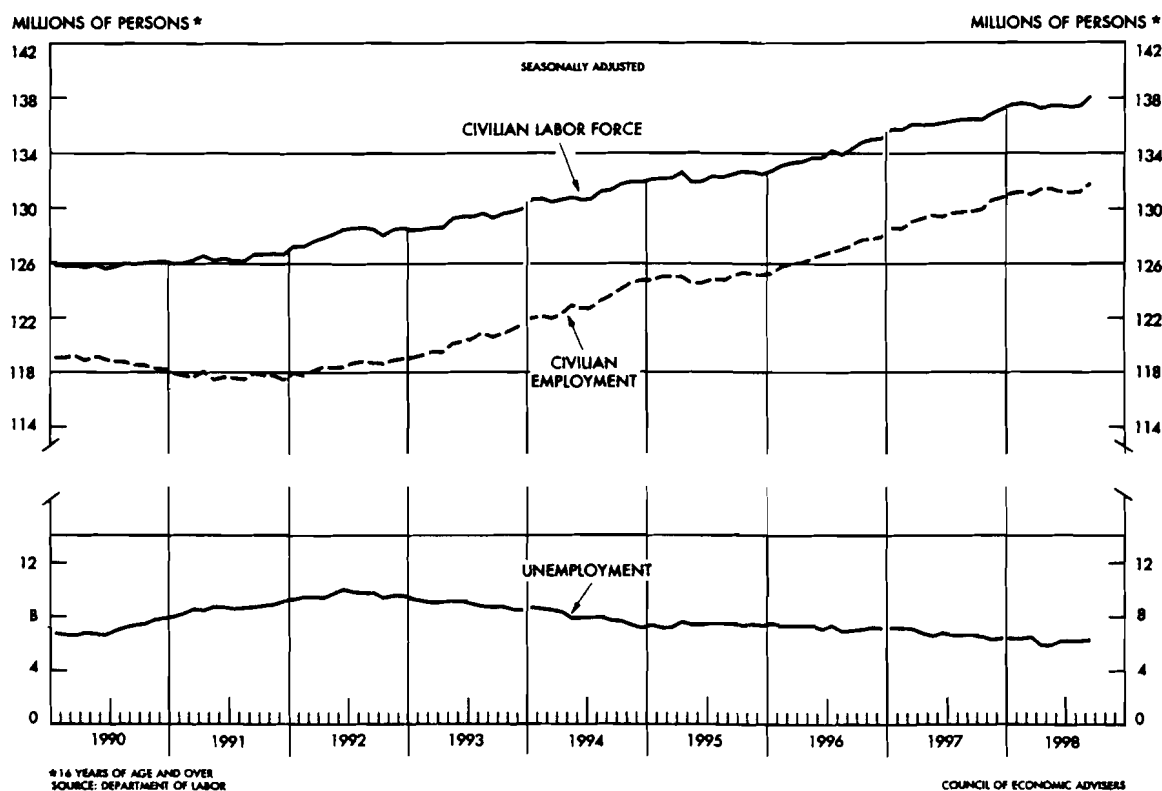


TABLE 1-7. CONSUMER AND PRODUCER PRICE INDICES, 1989-98

Year	Consumer price index		Producer price index		
	All items	Food	All finished goods	All intermediate goods	All crude materials
	(1982-84 = 100)			(1982 = 100)	
1989	124.0	125.1	113.6	112.0	103.1
1990	130.7	132.4	119.2	114.5	108.9
1991	136.2	136.3	121.7	114.4	101.2
1992	140.3	137.9	123.2	114.7	100.4
1993	144.5	140.9	124.7	116.2	102.4
1994	148.2	144.3	125.5	118.5	101.8
1995	152.4	148.4	127.9	124.9	102.7
1996	156.9	153.3	131.3	125.8	113.8
1997	160.5	157.3	131.8	125.6	111.1
1998 ^a	163.6	160.4	130.6	123.0	92.9

^a Sept. index number. Source: Bureau of Labor Statistics.

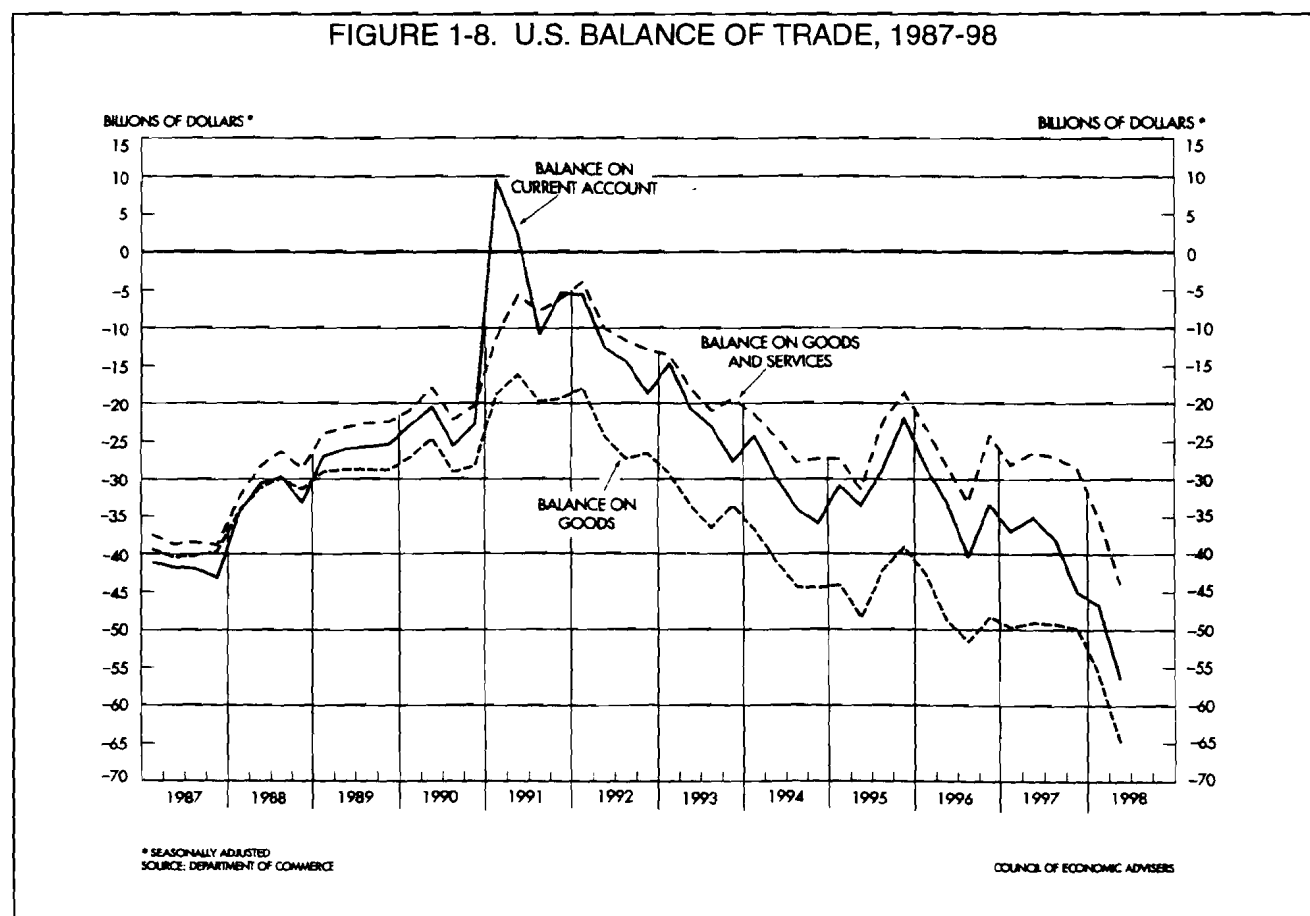
TABLE 1-8. CHANGES IN SELECTED CPI COMPONENTS

Component	December 1997 weights in the price index	Sept. 1998 price index	% Change in component from Sept. 1997 to Sept. 1998
	<i>percent</i>	<i>1982-84=100</i>	<i>percent</i>
All items	100.0	163.6	+1.5
Housing	39.6	160.0	+1.5
Transportation	17.6	141.1	-2.2
Food	15.3	160.4	+1.6
Apparel	4.9	133.2	+0.2
Medical care	5.6	244.4	+3.8

Source: Bureau of Labor Statistics.

As noted above, improvements in productivity have held down labor costs, and consequently there has been little cost-push inflation, notwithstanding the strong labor market. In addition, competition in most consumer goods and services areas is vigorous. One source of competition is imported goods. The strong U.S. economy, combined with weak Asian economies, has resulted in a flood of imports. Also, U.S. exports weakened relative to 1997. The consequence has been growth in the U.S. balance of payments deficit (Figure 1-8).

FIGURE 1-8. U.S. BALANCE OF TRADE, 1987-98



The growth in personal consumption expenditures is associated with a growth in consumer installment credit, including auto loans (Table 1-9). There is concern about the excess use of credit, and personal bankruptcies have grown. Nonetheless, the aggregate data suggest that installment credit has not increased when measured as a percent of expenditures. Indeed, this percentage is lower in 1998 than it was in the previous three years.

TABLE 1-9. CONSUMER INSTALLMENT CREDIT AND PERSONAL CONSUMPTION EXPENDITURES, 1989-98

Date	Personal consumption expenditures ^a	Installment & non real estate credit outstanding	Auto loans	Auto loans as a percent of total installment credit	Total installment credit as a percent of personal consumption expenditures
	--- billions of dollars ---			--- percent ---	
December 1989	3,595	793	291	36.7	22.1
December 1990	3,839	805	284	35.3	21.0
December 1991	3,975	794	264	33.2	20.0
December 1992	4,220	798	264	33.1	18.9
December 1993	4,459	859	290	33.8	19.3
December 1994	4,717	983	330	33.6	20.8
December 1995	4,954	1,123	367	32.7	22.7
December 1996	5,216	1,212	396	32.7	23.2
December 1997	5,494	1,264	417	33.0	23.0
July 1998 ^a	5,808	1,259	430	34.1	21.7

^a Annual totals or rate.

One of the concerns, as we look to next year, is the performance of other economies around the world. Unquestionably, the U.S. economy is connected with the rest of the world, but as Table 1-10 indicates, growth rates vary widely across countries. For many countries, growth is expected to slow in 1999, but economic performance is projected to remain robust in the European Union and China, as well as in Canada and Mexico. The outlook remains unfavorable for Japan, Southeast Asian countries, and especially Russia. There are some signs of an economic turn-around in Japan, however. On balance, the outlook for the world is mixed, with considerable uncertainty attached to the forecasts, but the outlook seems a bit more favorable as this is written in November than it did just a month or two ago. (The forecast of real GDP for the U.S., 1.8%, is below the consensus forecast given at the end of the chapter, but is shown to be consistent with the other data in the table.)

Long-Run Trends: Population

Last year, I wrote (briefly) about five trends that are likely to influence our economy in the longer term: (1) improved technologies, (2) government policies favoring economic deregulation, (3) cheap energy, and the question of whether it will remain inexpensive, (4) changes in the size and structure of the population, and (5) the growing complexity and inter-connectedness of the world's economies. This year, I explore in more depth projected changes in the population of the world, U.S., and New York State.

As of 1998, the world has about 5.9 billion people, and the growth rate of the world population is about 1.3% (Table 1-11). Total population is up from about 2.5 billion 50 years ago. A variety of forecasts exist about population growth over the next 50 years. One "middle of the road" set of estimates is shown in Table 1-11, suggesting that the world's population will be about 9.3 billion in 2050. These middle estimates

assume a slowing growth rate, down to perhaps 0.5% by 2050. Women are expected to have fewer children, but people are expected to live longer. One of the many uncertainties is the effect of AIDS on deaths; recent United Nations' estimates project a population of less than 9 billion because of AIDS-related deaths.

TABLE 1-10. WORLD ECONOMIC GROWTH

Country	Calendar Year			
	1996	1997	1998	1999
Indonesia	7.6	4.9	-17.1	-6.0
China	9.6	8.8	6.7	7.2
India	7.5	2.1	4.0	3.5
Brazil	2.9	2.9	0.6	1.7

Sources: Oxford Economic Forecasting; International Financial Statistics, IMF, as reported in *Agricultural Outlook*, ERS, USDA, Oct. 1998, Table 3. The last three years are estimates or forecasts.

TABLE 1-11. WORLD POPULATION, MIDYEAR, 1950-2050

Year	Population	Growth rate
	Billion	Percent ^a
1950	2.556	1.47
1960	3.039	1.33
1970	3.706	2.07
1980	4.454	1.69
1990	5.279	1.56
1998	5.926	1.32
2000	6.082	1.27
2010	6.849	1.11
2020	7.585	0.91
2030	8.247	0.76
2040	8.850	0.62
2050	9.346	0.46

^a Average annual population rate as of year shown (not average of 10-year period). Year 2000 and after are forecasts.

Source: U.S. Bureau of the Census, International Data Base (last update 6/15/98).

A major concern is our ability to feed the growing number of people. In Table 1-12, I report one set of estimates of the growth in demand for food. The estimates combine expected growth in population with the effect of expected increases in income. The demand for food will grow, but at a decreasing rate. Trend projections have also been made for the supply of food, and these estimates suggest that supply may increase

somewhat more slowly than demand. If so, food prices would increase. However, given the vast uncertainties attached to long-run forecasts, reality may turn out to be very different than these estimates.

TABLE 1-12. ESTIMATED WORLD GROWTH RATES IN CROP SUPPLY AND DEMAND

Year	Population estimates		Income effect ^c	Total demand ^d	Supply ^c
	U.S. ^a	U.N. ^b			
--- Percent ---					
2000	1.27	1.44	0.31	1.75	1.28
2010	1.11	1.24	0.29	1.53	1.14
2020	0.91	1.08	0.27	1.35	1.01
2030	0.76	0.88	0.24	1.12	0.92
2040	0.62	0.65	0.22	0.87	0.84
2050	0.46	0.48	0.20	0.68	0.77

^a From Table 1-11.
and income rates.

^b United Nations median forecast.

^c Tweeten, *Choices*, third quarter, 1998.

^d Sum of U.N. population

The projections do imply a need for the research that is necessary to continue upward trends in food production, and to achieve this increased output in an environmentally friendly way. We also know that commodity supplies can vary substantially from year to year. Hence, there will be variability in stocks and prices. If the trend in demand should tend to out-pace supply, then in years when supply falls below its trend growth, large upward spikes in prices will occur. These analyses imply considerable potential for volatility in commodity prices.

Turning to the nation and states, the Census Bureau has provided detailed projections for 2025 (Table 1-13). Births in the U.S. are approximately at the replacement rate (two per woman of childbearing age). Of course, given the age distribution of the population, births currently exceed deaths, and life expectancy is increasing. So, in the short run, even without immigration, the U.S. population continues to grow, and immigration will add, according to Census Bureau estimates, almost 25 million people from 1995 to 2025.

**TABLE 1-13. POPULATION PROJECTION, U.S. AND SELECTED STATES, 1995-2025
(RESIDENT POPULATION, MIDDLE SERIES)**

State/ region	Year		Net change	Births	Deaths	Net migration	
	1995	2025				Interstate	Immigration
--- thousands ---							
NYS	18,136	19,830	1,694	8,117	5,598	(5,038)	3,886
Northeast	51,466	57,392	5,927	21,585	16,537	(7,168)	6,830
Florida	14,166	20,710	6,544	6,169	5,829	3,879	1,856
California	31,589	49,285	17,696	22,035	8,248	(2,848)	9,553
U.S.	262,755	335,050	72,294	126,986	84,633	--	24,666

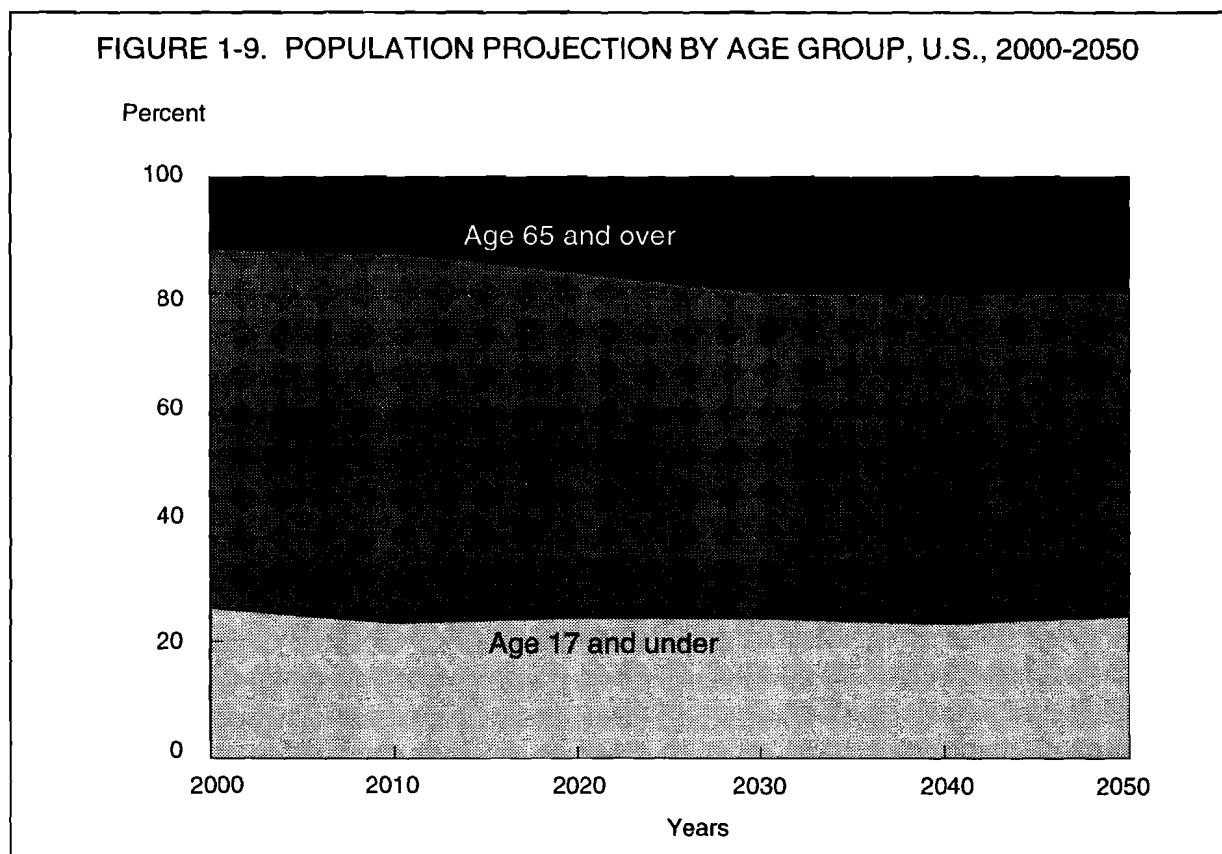
Source: Campbell, Paul. "Population Projections: States, 1995-2025," Current Population Report P25-1131, U.S. Census Bureau.

When one considers state populations, interstate migration also must be taken into account. In New York State, births will exceed deaths, and we may expect about 3.9 million foreign immigrants between 1995 and 2025. But because of the net out-migration of over 5 million people to other states, the State's population is forecast to grow only 1.7 million over the 30-year period. This contrasts with Florida, where deaths will

more nearly match births because of their large retirement age population. But because of the large net migration, Florida's population is projected to grow by 6.2 million people between 1995 and 2025. Florida will become the third largest state. California is forecast to have a population of almost 50 million by 2025. This is the consequence of a very large number of births relative to deaths and immigration from foreign countries. Perhaps surprisingly, California is expected to lose population to other states.

These data show the diverse problems that regional and state economies face. Florida will face problems associated with the elderly. California will face problems associated with the young. California, Florida and New York are all likely to deal with the issues associated with a diversity of foreign immigrants.

The percent of the population age 65 and older will grow, especially after 2010 (Figure 1-9). About 20% of the population will be 65 and older by 2040, and about 4.5% will be 85 and older. This means that there will be roughly 70 million people older than 64 and well over 15 million older than 84. We shouldn't lose sight of the fact, however, that there will still be a lot of young people. The percent of total population age 17 and younger is projected to remain stable at about 24% over the 2010 to 2050 period. The decreasing percentage will be in the age group 18 through 64. This is the "working age" group.



There are many ramifications for the economy. Clearly, the demands of the young must continue to be met, while at the same time meeting the growing demands of the elderly. However, views of what is meant by the elderly are going to have to change. Retirement ages may have to be pushed back, and/or older persons must be encouraged to increase their supply of volunteer labor.

One of the hot political topics is the implication for the Social Security System. Under current rules, and assuming modest economic growth and current population projections, the income from social security taxes will exceed payments at least through 2020. However, shortly after 2020, a large deficit is forecast in the social security accounts. It could reach \$700 billion by 2030. Since the problem is 25 or 30 years in the future and since the forecasts have an element of uncertainty, the urgency and magnitude of the needed fix are debatable.

The major implication for the food sector of the economy is the need for a diverse and flexible system. The U.S. population is going to have increasing diversity in terms of age and ethnic mix, and on average, it will be an affluent group. This population, therefore, is going to demand a variety of products in a variety of formats.

Farm Sector Overview

In the U.S., net farm income in 1997 declined from the relatively high level of 1996, and is decreasing still further in 1998 (Table 1-14). The decrease in 1998 income is the result of significantly lower prices for the most major commodities (Table 1-15). These commodities are in ample supply, and export demand is weak for many commodities. With low milk prices in 1997, New York's farm income took an especially sharp drop compared with the nation, but New York State is now a positive exception to the national picture. Higher prices for milk and lower prices for feed than in 1997 are contributing to larger farm incomes in New York.

TABLE 1-14. U.S. AND NEW YORK NET FARM INCOME, 1988-98

Year	United States				New York
	Gross cash income	Cash production expenses	Net cash income	Net farm income ^a	Net farm income
	----- billions of dollars -----				millions of dollars
1988	173.6	121.0	52.5	38.0	519.8
1989	180.3	127.5	52.8	45.3	646.8
1990	186.9	134.1	52.8	44.7	609.3
1991	184.3	134.0	50.4	38.6	495.1
1992	188.7	133.6	55.1	47.5	563.0
1993	200.2	141.2	59.0	43.6	565.5 ^b
1994	198.3	147.6	50.7	48.3	471.1
1995	205.5	153.6	51.8	36.0	297.4
1996	217.8	161.4	56.4	53.4	471.5
1997 ^c	228.0	167.2	60.8	49.8	232.8
1998 ^d	218.8	165.8	53.0	42.0	--

^a Cash income adjusted for change in inventory value and nonmoney income.

^b Series revised 1993 to date.

^c Preliminary.

^d Forecast.

Source: ERS, USDA.

In regions where agriculture is relatively important, such as the upper Mid-West, the recession in agriculture is impacting the economy. There has been some response on the part of the Federal Government. Payments under the production flexibility contracts have been speeded up. Also, under existing legislation, it is possible for grain producers to obtain loan deficiency payments. These payments are available to participating farmers when the loan rate is below the "posted county price," which is intended to reflect the local spot market. This payment is made to encourage farmers not to put grain into the loan program.

TABLE 1-15. PRICES RECEIVED AND PAID BY FARMERS, 1989-98

Year	Prices received by farmers			Prices paid by farmers		Ratio
	Crops	Livestock	All farm products	Production items	Production items incl. interest, taxes & wage rates	
			----- (1990-92 = 100) -----			percent
1989	109	100	104	95	97	108
1990	103	105	104	99	99	105
1991	101	99	100	100	100	99
1992	101	97	98	101	101	97
1993	102	100	101	103	102	98
1994	105	95	100	106	106	94
1995	112	92	102	109	109	92
1996	126	99	112	115	114	98
1997	115	98	107	117	117	91
1998 ^a	104	97	100	111	112	89

^a Third quarter.

Consequently, government cash payments to farmers are likely to be about \$8.2 billion in 1998 compared with \$7 billion in 1997 (Table 1-16). Payments in 1999 are forecast to be nearly \$8 billion. These payments are a tiny percent of the total federal budget, but a large percent of farm income.

TABLE 1-16. GOVERNMENT CASH PAYMENTS TO PRODUCERS, 1990-99

Fiscal year	Production flexibility	Deficiency	CRP	All other	Total
			----- million dollars -----		
1990	0	4,178	0	192 ^a	4,370
1991	0	6,224	0	107 ^a	6,341
1992	0	5,491	0	356	5,847
1993	0	8,607	0	536	9,143
1994	0	4,391	0	666	5,057
1995	0	4,008	0	126	4,134
1996	5,141	567	0	99	5,807
1997	6,320	-1,118	1,671	144 ^b	7,017
1998 ^e	5,716	-11	1,829	658 ^b	8,192
1999 ^f	5,512	0	1,639	813 ^b	7,964

^a Includes dairy termination payments.^b Includes other conservation and loan deficiency payments.^e Estimate.^f Forecast.

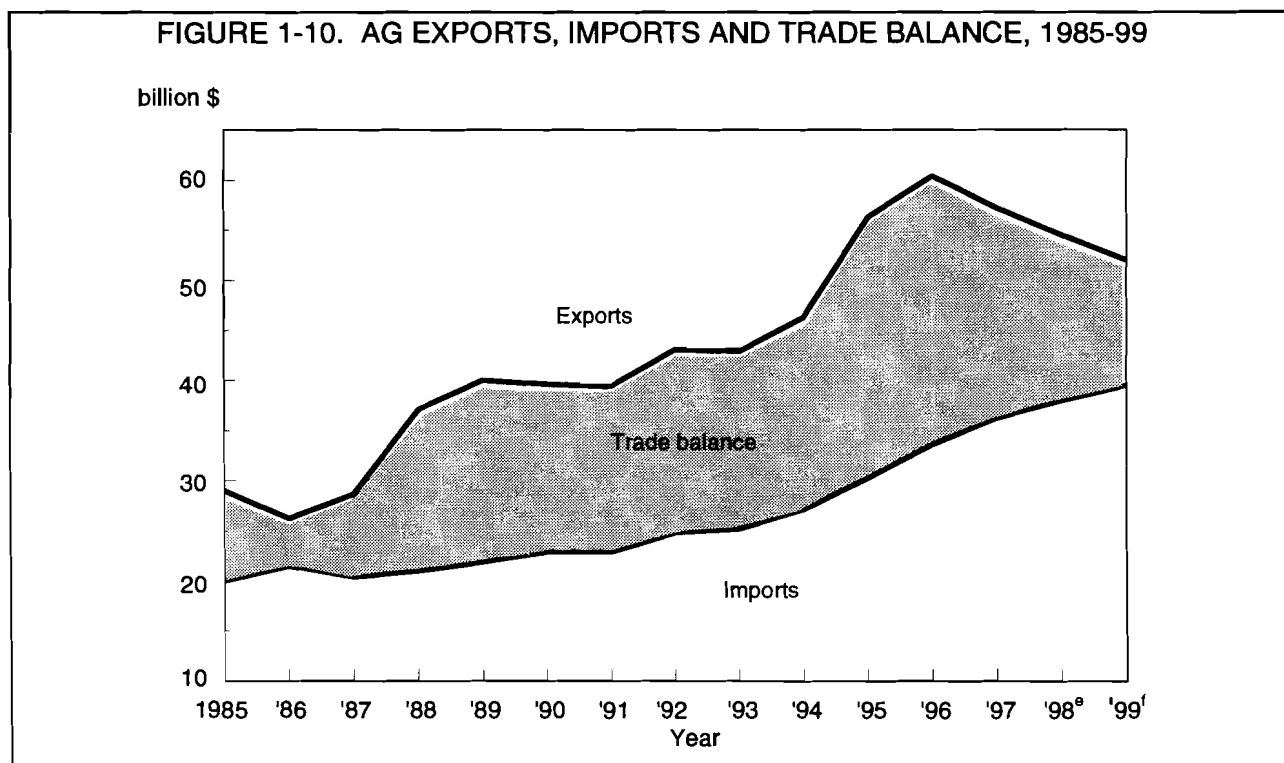
The stocks of feed grains at the end of the current crop year are expected to be the largest since the 1992-93 season (Table 1-17). Consequently, relatively low prices are likely to persist at least through mid-year. Assuming export demand remains weak, as projected (Figure 1-10), the outlook for the agricultural economy in 1999 is lackluster.

TABLE 1-17. FEED GRAIN STOCKS, U.S., 1988/89 TO 1998/99

Crop year	Ownership		Total	Government/total
	Government	Private		
	----- million metric tons -----			percent
1988/89	18.6	47.3	65.9	28.2
1989/90	10.5	35.0	45.5	23.1
1990/91	11.3	36.4	47.7	23.7
1991/92	3.2	30.7	34.0	9.4
1992/93	1.6	61.4	63.1	2.5
1993/94	1.3	26.1	27.4	4.7
1994/95	1.2	44.1	45.3	2.6
1995/96	0.9	13.5	14.4	6.2
1996/97	0.1	26.9	27.0	0.4
1997/98 ^e	0.0	38.2	38.2	0.0
1998/99 ^f	0.1	50.1	50.2	0.2

^a Estimate. ^f Forecast.

FIGURE 1-10. AG EXPORTS, IMPORTS AND TRADE BALANCE, 1985-99



^a Estimate. ^f Forecast.

Source: ERS, USDA.

Summary and 1999 Outlook

Last year, the consensus was that the growth in real GDP would drop to 2.6%; actual growth will be about 3.5%. The consensus was that inflation, as measured by the CPI, would accelerate to 2.5%; the rate

will be more nearly 1.6%. The unemployment rate was forecast to remain the same or perhaps decrease slightly to 4.9%; it will be about 4.5%. Interest rates were forecast to increase; they declined.

Basically, over the past two years, economists have been too pessimistic about the economy. Growth in real GDP did slow a bit in 1998, but not nearly as much as expected. The forecasts of inflation and interest rates even got the direction of change wrong.

The consensus for 1999 is for a further slowing of the growth of real GDP, and for increases in the rate of inflation, interest rates, and unemployment. There is more emphasis than in the past about the uncertainty attached to these forecasts. We are at a point where on the one hand, the economy could slip into a recession, but on the other hand, growth could remain near current levels. Unpredictable events could tip growth in one direction or the other.

The pessimistic view was especially apparent in August and September, and was reflected in a declining and volatile stock market. (Indexes of the prices of securities are basically a reflection of expected earnings, hence a measure of economic outlook.) In early November, somewhat more optimistic views have become prevalent about the U.S. and world economies. Thus, while there are signs of a slowing economy, the concern about a recession has been reduced. Of course, by the time you are reading this, additional news may have either increased or reduced the optimism about the state of the economy.

The following data represent current estimates and forecasts about the state of the 1998 and 1999 economies. For 1999, rather than take the mid-point of consensus views, I have opted toward the more optimistic numbers. (The interest rate numbers are provided by Professor Ed LaDue and are discussed in the Finance chapter, Chapter 4.)

	<i>1996</i> <u>Actual</u>	<i>1997</i> <u>Actual</u>	<i>1998</i> <u>Estimate</u>	<i>1999</i> <u>Forecast</u>
Real GDP (percent change)	3.4	3.9	3.5	2.2
CPI (percent change)	3.0	2.3	1.6	2.0
Unemployment (rate)	5.4	4.9	4.5	4.7
3-month treasuries (rate)	5.0	5.1	4.8	4.3

In assessing these numbers, it is important to remember that growth in our economy has been fueled largely by higher consumer incomes and robust expenditures by consumers. Continued growth depends importantly on the continued ability and willingness (confidence) of consumers to spend. Growth in imports and decreases in exports are the major drag on GDP. If the Japanese and Southeast Asian economies start to turn around, then the foregoing forecasts are achievable. While we cannot control decisions in other countries, policy-makers in the U.S. appear sensitive to the potential for a recession, and if major signs of weakness appear, the Federal Reserve System and the Congress are likely to respond.

In the ten years 1989 - 1998, real growth in GDP has exceeded 2.2% eight times. Only in the "recession" years of 1990 and 1991 was growth 1.2% and -0.9%, respectively. The data suggest that the U.S. economy can easily sustain a 2.5% growth in real GDP, with moderate rates of inflation, say, at 2% to 2.5%. Thus, the forecast for 1999 is conservative relative to the apparent capability of the economy. Of course, in any particular year, "shocks" to the economy will cause deviations from the sustainable rates. By definition, such shocks are not forecastable.

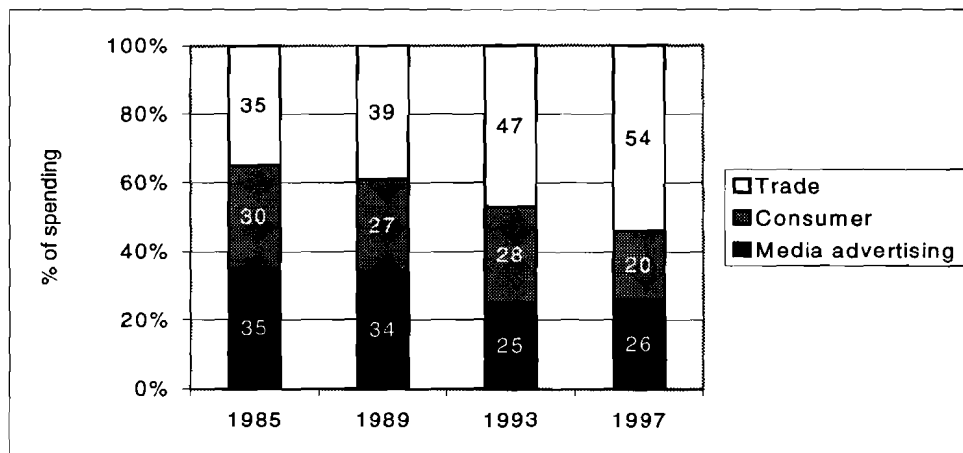
Chapter 2. Marketing Costs

Gene A. German, Professor
Kristen S. Park, Extension Support Specialist

Although total marketing promotional expenditures continue to increase, food manufacturers have been spending more on various promotions than on media advertising. In addition, food manufacturers have reallocated promotional dollars, spending more on trade promotions and less on consumer promotions.

Advertising generally refers to mass media spending—newspapers, magazines, radio, television, and billboards. Trade promotions include cash allowances and free product based on customer sales performance. Consumer promotions are offered directly to the consumer and include couponing, new product sampling, cash refunds, sweepstakes, etc. In 1996, three times as much money was spent on promotions as on advertising (Figure 2-1).

FIGURE 2-1. SHARES OF TOTAL MARKETING PROMOTIONAL EXPENDITURES



Source: *Progressive Grocer*, September 1997

Possible reasons for the shift in spending are many. Trade promotions increase sales in the short run as sales managers respond to pressures to increase sales by increasing promotions. In addition, responses to trade promotions can actually be measured, whereas responses to mass media are quite difficult, if not impossible, to quantify. This enables more localized, targeted promotional planning.

However, as advertising dollars are sacrificed for trade promotion increases, some important changes can be seen in the industry. One, brand loyalty supported by media advertising has declined. This decline in brand loyalty has led to a heightened price sensitivity along with the view that one brand is about the same as another. Also, for good or bad, more products are priced on an equal level which means that products need to be differentiated in a manner other than price.

The Food Marketing System

In 1997, total U.S. food sales were approximately \$908 billion, an increase of \$18 billion or a 2.0 percent total increase from 1996 (Table 2-1). Most of the total increase in food sales came from the \$11 billion increase in the retail food sector. Retail food sales increased from 376 in 1996 to 387 in 1998, an increase of 2.9 percent. Foodservice sales rose slightly by \$3 billion to a total of \$ 320 billion. Packaged alcoholic beverages and alcoholic drinks served in restaurants and other establishments increased in 1997 by 4.0 and 4.9 percent respectively, while nonfood sales from within the food system marketing channels remained unchanged.

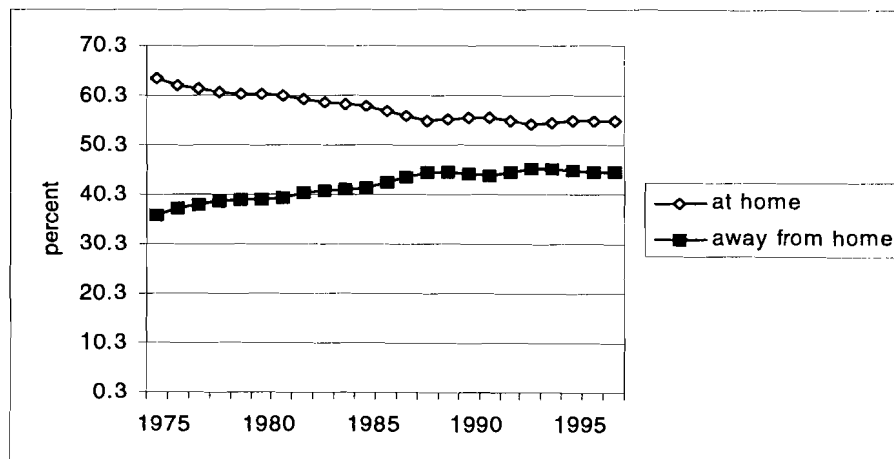
Table 2-1. FOOD MARKETING SALES

Sector	Sales 1996	Sales 1997	Increase	Growth
	--\$ billion--		--\$ billion--	--% change--
Retail food	376	387	11	2.9
Foodservice	317	320	3	0.9
Nonfood	106	106	0	0.0
Packaged alcoholic beverages	50	52	2	4.0
Alcoholic drinks	41	43	2	4.9
Total	890	908	18	2.0

Source: Gallo, Anthony, USDA-ERS, Food and Rural Economics Division, November 1998.

No change in the proportion of consumer spending for food at home versus away from home was observed between 1996 and 1997. Consumers spent 55.2 percent of their total food expenditures for food at home in 1997 as well as in 1996 (revised data), and 44.8 percent for food away from home (Figure 2-2). This may be an indication of a significant trend. From the mid-70s to late 80s sales for food away from home grew at a rapid pace and outstripped smaller growth in sales for food consumed at home. This trend started to level off in the early 90s as fast food establishments also started to experience greater market saturation and a leveling off in growth rates. Also at this time, supermarkets started to combat the encroaching foodservice establishments by offering more ready to eat foods or home meal replacements within the store.

FIGURE 2-2. PERCENT OF TOTAL CONSUMER FOOD EXPENDITURES, AT HOME AND AWAY FROM HOME

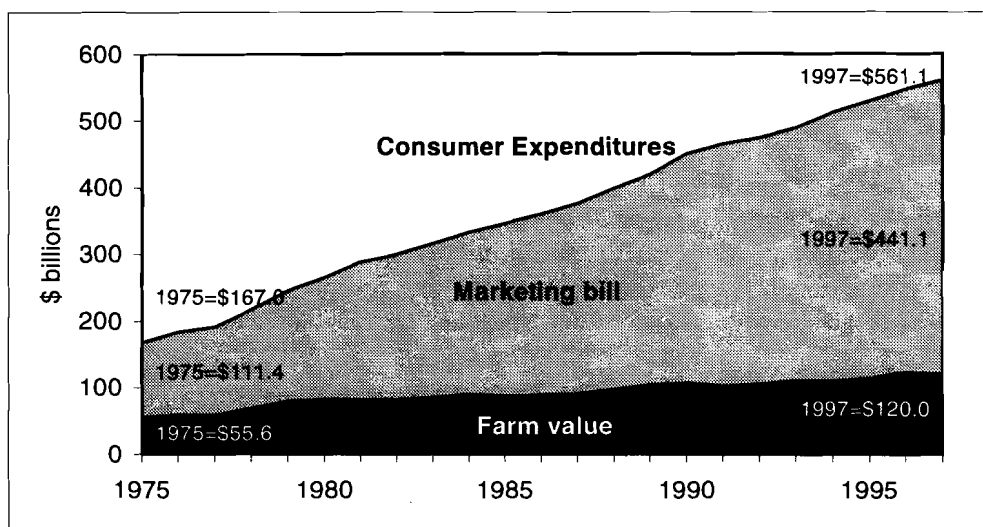


Source: USDA-ERS, Putnam, Judith Jones and Jane E. Allshouse, November, 1998.

The prepared foods, or meal solutions, offered by supermarkets have had a large impact on the market system, since these items have greater processing costs, as well as greater labor, shrink, packaging, equipment, and handling costs. These added costs increase market system expenditures while not affecting in a significant way farm f.o.b. prices. This also means that as farm value becomes a less important part of total expenditures, changes in farm f.o.b. prices have less impact on consumer prices than in the past.

Total consumer expenditures for food produced on U.S. farms in 1997 was \$561.1 billion which was an increase of 2.7 percent over 1996 expenditures (Figure 2-3). Marketing expenses for U.S. food production, which includes processing, wholesaling, transportation, and retailing, totaled \$441.1 billion in 1997, an increase of 4.1 percent over 1996. The farm value portion totaled \$120.0 billion, an actual decrease in farm value from \$122.2 billion in 1996. One possible reason may have been unusually high farm prices in 1996 due to high grain and feed prices.

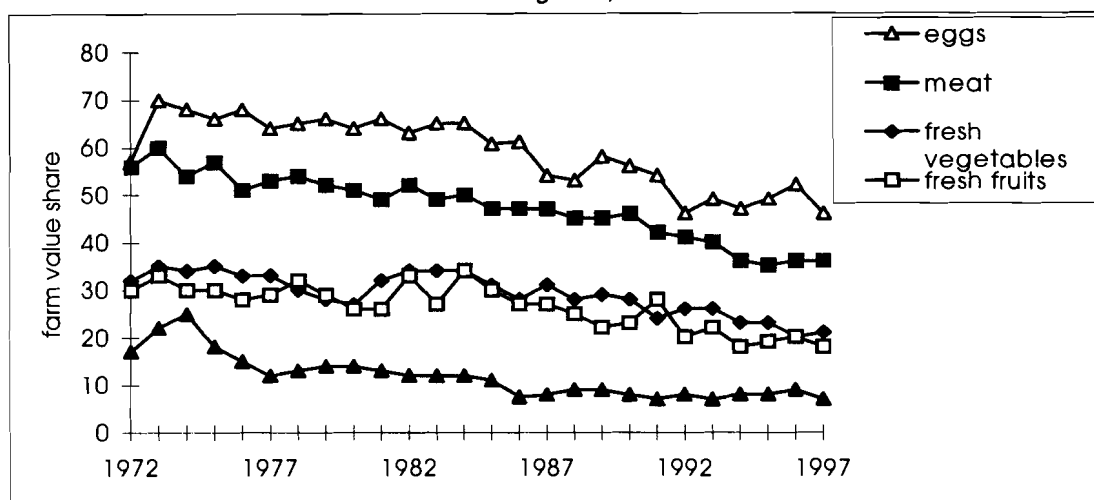
Figure 2-3. DISTRIBUTION OF FOOD EXPENDITURES
-for U.S. farm foods-



Source: Elitzak, Howard, USDA-ERS, Food Cost Review Data. November 1998.

The farm value share of retail price is the portion of the retail price which represents the price the farmers' received for their commodity. In 1997, farm value share of retail price of all food produced in the U.S. averaged 21.4 percent, a decrease from 1996 when the farm share was 23 percent. The farm value share varies greatly by commodity and depends on the amount of processing and marketing transformations the commodity goes through before landing on the supermarket shelf or foodservice platter (Figure 2-4). Eggs and meat have fewer processing requirements and in 1997 held a farm share of 46 and 36 percent respectively. Fresh fruits and vegetables, however, have undergone great strides in convenience packaging and pre-cut salads and vegetables and returned a farm value share of 18 and 21 percent respectively in 1997. Cereals and bakery commodities require major transportation, storage and processing and packaging functions before being sold and consumed by the general public and had a farm share of 7 percent in 1997.

FIGURE 2-4. FARM SHARE OF RETAIL PRICE
Selected Categories, 1972-1998



Source: Elitzak, Howard, USDA-ERS, Food Cost Review Data. November 1998.

The classic dollar bill in Figure 2-5 portrays the average farm value share against the many marketing functions. By far the largest marketing expense in the food system is labor. The labor involved in marketing alone accounted for 38.4 percent of the total food bill in 1997. Packaging materials still constitute the next largest component of the food bill and was 8.7 percent in 1997, a slight drop from 1996. Intercity truck and rail transportation took 4.3 percent of the marketing bill another increase over 1996.

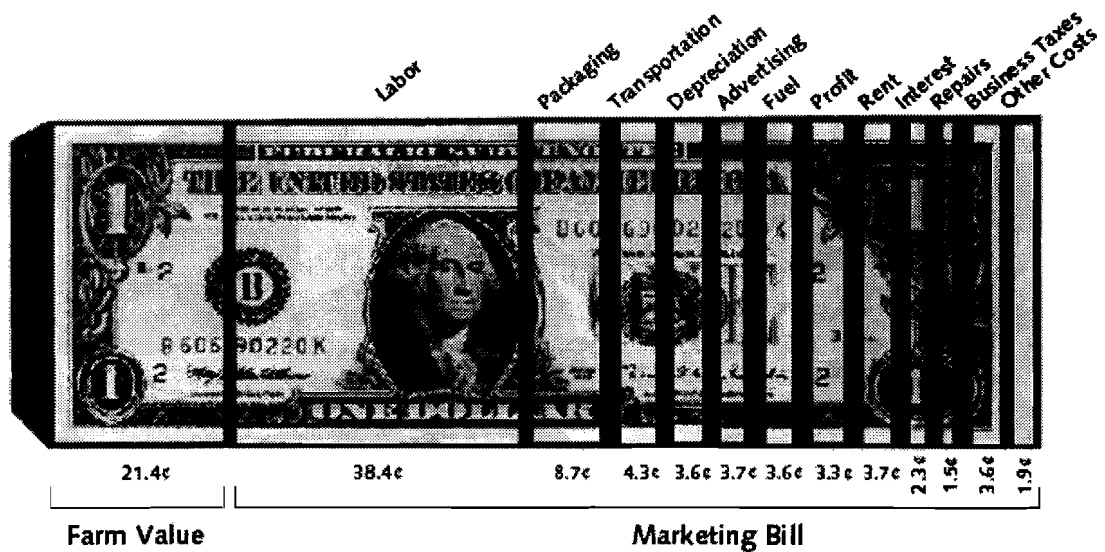
Other marketing expenses which decreased since 1996 were advertising and corporate taxes while expenses which increased included fuels and electricity, depreciation and net rent.

The U.S. continues to report the lowest consumer food costs in the world. Data from the United Nations System of National Accounts and World Bank data, indicate that the U.S. spent 8.7 percent of its private consumption expenditures on food and nonalcoholic beverages in 1995 (Table 2-2). In comparison, Japan spent 20.8 percent on food while the U.K. spent 11.9 percent. Consumers in middle income countries such as Mexico and Russia spent even more, 33.7 and 38.4 percent respectively, of their private consumption expenditures on food.

TABLE 2-2. SPENDING ON FOOD AS A SHARE OF PRIVATE CONSUMPTION EXPENDITURE

Country	Share of spending
Japan	20.8
United States	8.7
United Kingdom	11.9
Mexico	33.7
Russia	38.4

FIGURE 2-5. What a Dollar Spent for Food Paid for in 1997



Includes food eaten at home and away from home. Other costs include property taxes and insurance, accounting and professional services, promotion, bad debts, and many miscellaneous items

Source: Elitzak, Howard, USDA-ERS, Food Cost Review Data, November 1998.

Chapter 3. Cooperatives

Bruce L. Anderson, Professor

Brian M. Henahan, Senior Extension Associate

U.S. Situation

The most complete data available on U.S. agricultural cooperatives are collected through an annual survey of marketing, farm supply and selected service cooperatives conducted by the Cooperative Service of RBS, USDA. Results of the most recent survey are summarized in Table 3-1.

Table 3-1. UNITED STATES AGRICULTURAL COOPERATIVE NUMBERS, BUSINESS VOLUME, AND NET INCOME 1996-97 ¹						
Major Business Activity	Number		Net Volume		Net Income	
	1996	1997	1996 (\$ billion)	1997	1996 (\$ million)	1997
Marketing	2,012	1,943	79.3	77.6	1,181.0	1,313.3
Farm Supply	1,403	1,386	23.6	24.9	941.5	834.6
Related Service	469	464	3.1	3.6	125.0	166.5
TOTAL	3,884	3,793	106.0	106.1	2,247.5	2,314.4

¹ Totals may not add due to rounding.
Source: Farmer Cooperative Statistics, 1996, Rural Business - Cooperative Service, USDA, RBS Service Report 53, Washington, D.C., October 1997 and 1998 preliminary release from Rural Business - Cooperative Service, USDA.

The number of cooperatives in the United States has continued to decline to a total of 3,793 in 1997, a net decrease of 91 associations. This is primarily due to ongoing consolidation and merger of local marketing and supply cooperatives in the Mid-west. However, there also were mergers of some very large regional cooperatives as well. The rate of decline has slowed over the past few years.

Total net business volume which excludes intercooperative business amounted to \$106 billion, equaling the record set in 1996. Total net income for 1997 was \$2.31 billion, up 3 percent from \$2.25 billion in 1996.

Combined assets in 1997 for all cooperatives totaled \$43.9 billion, a 3 percent increase from 1996. Total liabilities of \$25.5 billion increased 1 percent from the previous year. Net worth totaled \$18.5 billion, up nearly 6 percent. The estimated number of full-time employees in U.S. cooperatives for 1997 totaled 172,199, down 2 percent from 174,795 in 1996.

New York State Situation

Data for agricultural cooperatives headquartered in New York State were obtained from the Cooperative Service survey cited previously. State level data are collected every other year. The most current statistics available are for 1995 and 1997. Table 3-2 summarizes cooperative numbers and business volume for New York State.

Table 3-2. NEW YORK STATE AGRICULTURAL COOPERATIVE NUMBERS AND NET BUSINESS VOLUME BY MAJOR BUSINESS ACTIVITY, 1995 and 1997¹.

Major Business Activity	Number Headquartered in State		Net Volume	
	1995	1997	1995	1997
			(\$ million)	
Marketing:				
Dairy	61	63	1,228.8	1,171.7
Fruit & Vegetable	10	9	293.0	285.8
Other Products ²	7	7	81.2	353.5
TOTAL MARKETING	78	79	1,603.0	1,811.0
Supply:				
Crop Protectants			13.4	36.1
Feed			123.8	133.1
Fertilizer			24.1	55.3
Petroleum			143.2	244.9
Seed			7.6	23.3
Other Supplies			136.0	139.2
TOTAL SUPPLY	12	11	448.3	631.9
Service³	5	6	201.9	152.6
TOTAL	95	96	2,253.2	2,595.5

Source: Farmer Cooperative Statistics, 1995, RBS Service Report 52, USDA, RB-CS, Washington, DC, November 1996 and 1998 preliminary release, USDA, RB-CS, Washington, DC.

¹ Totals may not add due to rounding.

² Includes wool, poultry, dry bean, grains, livestock, maple syrup, and miscellaneous.

³ Includes those cooperatives that provide services related to cooperative marketing and purchasing.

The number of agricultural cooperatives in New York State in 1997 showed a net increase of 1 cooperative from 1995 with an increase in dairy cooperatives and a decrease in the number of fruit and vegetable as well as supply cooperatives. Total net business volume increased by \$342 million, an increase of fifteen percent from 1995. Supply cooperative volume increased significantly by \$184 million while cooperative marketing volume increased by over \$208 million. Dairy and fruit & vegetable marketing cooperatives showed decreases in volume over the two year period. Total volume of other products marketed through cooperatives increased significantly. The increase for other products was primarily in manufactured products marketed through fruit and vegetable organizations as well as increases in livestock and maple syrup sales.

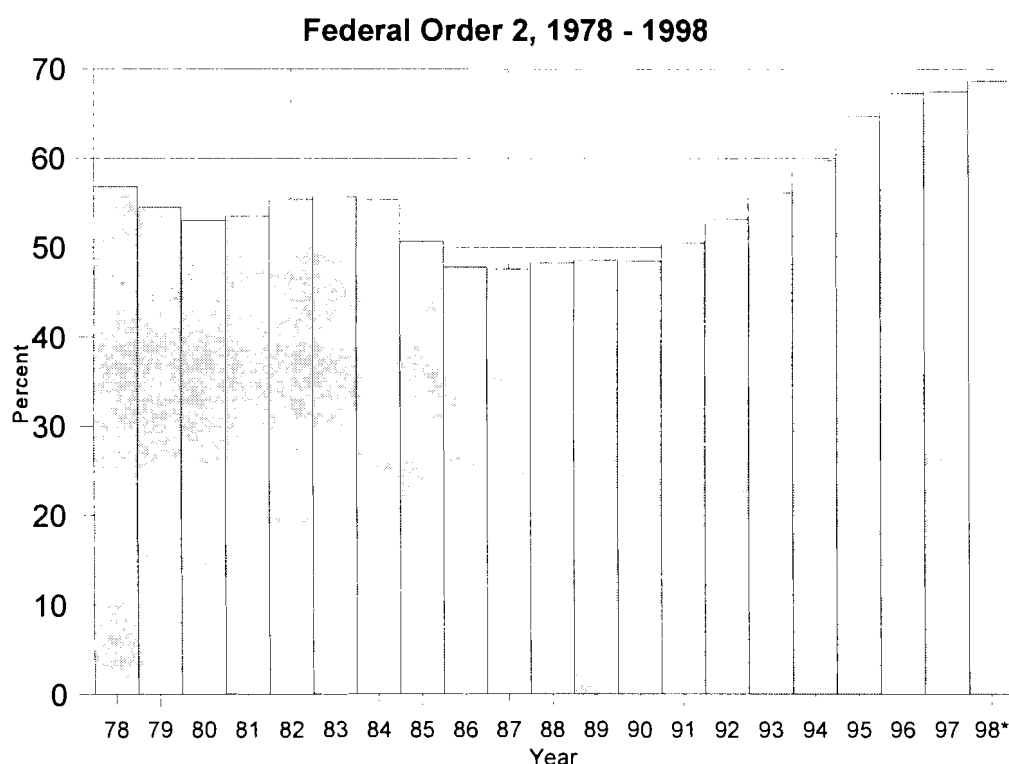
New York Cooperative Performance

The major cooperatives operating in New York had improved financial performance in 1998. Due to their significance in the state we will start by examining dairy cooperatives' share of producer milk

receipts, review important developments in all types of cooperatives, and finally look at some major factors likely to influence cooperatives in the coming year.

As indicated by Figure 3-1, the proportion of milk receipts handled by Milk Marketing Order 2 dairy cooperatives again increased slightly in 1998. Over two-thirds of all milk produced in Order 2 is marketed through dairy cooperatives. This is the highest cooperative share in recent history, and is up over 20 percentage points from a decade ago.

Figure 3-1. COOPERATIVE SHARE OF PRODUCER MILK RECEIPTS



* 1998 based on first eight months

Source: Market Administrator's Office, NY-NJ Federal Milk Marketing Order.

As predicted last year, the structure of dairy marketing cooperatives continues to experience significant changes. On January 1, 1998 Dairy Farmers of America (DFA) was formed through the merger of four major dairy cooperatives. DFA now has members in over 35 states, and during the year continued to expand via mergers with other milk marketing cooperatives. DFA has moved quickly to re-engineer its organization, operations and downsize its workforce. In the northeast, Milk Marketing, Inc. was one of the four cooperatives joining DFA.

In 1997, Land O' Lakes (LOL) merged with Atlantic Dairy Cooperative, and also continues to expand its dairy and farm supply operations. During the year, a large volume California dairy cooperative also merged with LOL. The members of LOL and Countrymark Cooperative, the major supply cooperative

in Indiana, Michigan and Ohio, recently approved their merger scheduled for January 1, 1999. Clearly, it appears that two major blocks of dairy marketing (and supply) cooperatives are coalescing in the U.S. dairy industry. This trend is likely to continue in 1999. These structural changes have been promoted as a way to increase coordination of processing and marketing activities, improve returns to members, and better position the industry to enter global markets.

Despite the significant fluctuation in milk prices over the last year, the financial performance of northeast milk marketing cooperatives increased across the board in 1998. As the price of milk increased, the revenues of all milk marketing cooperatives increased. Also, all the major dairy cooperatives reported an increase in net income, with several reporting a significant increase in net income.

Dairy related cooperatives continue to experience the effects of a reduced number of dairy herds and the need to spread increased fixed costs over a greater volume. On January 1 1998, the major dairy herd improvement association formed an alliance with a dairy marketing cooperative. Over the last year the re-organization reduced costs, improved financial performance, and resulted in positive net income. The volume of business of the cooperative livestock marketing organization in the northeast, a subsidiary of a milk marketing cooperative, increased as did its financial performance.

The major artificial insemination cooperative in the northeast, which was the result of a merger of three organizations two years ago, increased sales and net income in 1998 primarily due to improved milk prices. However, because it markets semen internationally, uncertainty in global markets resulted in international sales falling by about 10 percent worldwide. It experienced much steeper decline in regions, such as South America, where domestic currencies have deteriorated with respect to the U.S. dollar. There are early signs that three artificial insemination organizations affiliated with a mid-western cooperative, including the northeast cooperative are likely to merge their operations as of April 1, 1999, pending member approval.

The major supply cooperative in the Northeast reported lower sales and somewhat higher net income from operations for 1998. The organization also had an accounting change which increase net income by over 200 percent after the cumulative effect of the accounting change. Most of its divisions showed continued improvement in financial performance. The cooperative has announced several new initiatives including the raising of replacement heifers, futures trading, a direct supply program for manufactured agricultural products, a new brand of fresh produce, nutritionally enriched branded food products, and new technologies to improve the quality and shelf-life of fruits and vegetables.

The major vegetable and fruit processing cooperative reported improved net proceeds and a reduction of its debt load assumed after it acquired a publicly traded food processor. The organization continued to out-source non-core business functions, and re-organize their internal structure. Also, it announced and completed the acquisition of a major branded vegetable processor. The acquisition could increase the cooperatives sales from 60-80 percent. Over the next few years, one should expect re-engineering efforts (selling non-core businesses, out-sourcing secondary business functions, consolidation of general management functions, etc.) similar to those after it's last acquisition.

The major grape cooperative in New York reported record volume sales, net sales and net proceeds to growers. Increased marketing efforts in terms of new product development, increased spending on advertising, and positive public reaction to health research concerning the consumption of grape juice. The 1998 grape harvest was light due to spring frosts, and the prices of competitive juices have increased in recent months. Consequently, grape prices will likely remain strong in 1999. Also, product quality of the 1998 harvest was very high.

The farm credit cooperatives had good financial performance during the year. Low grain prices have had a positive result on northeast farm credit cooperatives, since grains are used as an input, rather than as a major source of income for dairy farmers in the regional.

Cooperative Outlook

As a group, New York and northeast cooperatives are probably in the best financial condition in decades, if not ever. Also, they are well positioned for 1999 and beyond.

One major factor that could have a negative impact is a significant drop in milk prices which could depress the dairy economy. This could depress the performance of credit, farm supply, artificial insemination, and dairy herd improvement organizations.

The weak global economy has had only a minor impact on northeast cooperatives. If the financial crisis in Asia, as well as Latin and South America continues or worsens, it could have a negative impact on agricultural product demand. Up to this point, weak international markets have had a positive impact on northeast agriculture by reducing the cost of production inputs.

Fruit and vegetable marketing cooperatives could experience a significant growth in sales, earnings and returns to members in 1999. Between strong demand, improved economies of scale and increased marketing initiatives, there is the potential for a significant increase in performance.

Chapter 4. Finance

Eddy L. LaDue, Professor

Table 4-1. United States Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1980	1985	1990	1995	1996	1997	1998 ^d
<i>billion dollars</i>							
Assets							
Real Estate	783	586	626	756	800	849	896
Livestock	61	47	71	58	60	67	57
Machinery	80	83	85	87	89	88	91
Crops ^a	33	23	23	25	32	30	30
Purchased Inputs	c	1	3	3	4	5	5
Financial Assets	26	33	38	49	49	50	50
Total	983	773	846	978	1034	1089	1129
Liabilities & Equity							
Real Estate Debt	90	100	75	79	82	85	89
Nonreal Estate Debt ^b	77	78	63	72	74	80	83
Total	167	178	138	151	156	165	172
Owner Equity	816	595	708	827	878	924	957
Total	983	773	846	978	1034	1089	1129
Percent Equity	83	77	84	85	85	85	85

^a Excludes crops under CCC loan.

^b Excludes CCC loans.

^c Not available.

^d Forecast

Table 4-2. Changes in Structure, United States Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1980	1985	1990	1995	1996	1997	1998 ^c
<i>percent of total</i>							
Assets							
Real Estate	80	76	74	77	77	78	79
Livestock	6	6	8	6	6	6	5
Machinery	8	11	10	9	9	8	8
All Other ^a	6	7	8	8	8	8	8
Total	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	54	56	54	52	53	52	52
Nonreal Estate Debt ^b	46	44	46	48	47	48	48
Total	100	100	100	100	100	100	100

^a Excludes crops under CCC loan.

^b Excludes CCC loans.

^c Forecast

Source: Agricultural Income and Finance, Economic Research Service, USDA, AIS-69, September 1998.

Table 4-3. Distribution of United States Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1975	1980	1985	1990	1995	1996	1997
<i>billion dollars</i>							
Real Estate							
Farm Credit System	14.5	33.2	42.2	25.8	24.8	25.7	27.1
Individuals & Others	15.8	27.8	25.8	15.1	18.0	18.5	19.0
Commercial Banks	5.6	7.8	10.7	16.2	22.3	23.3	25.2
Farm Service Agency	3.0	7.4	9.8	7.6	5.1	4.7	4.4
Insurance Companies	6.2	12.0	11.3	9.7	9.1	9.5	9.7
CCC-Storage	<u>.2</u>	<u>1.5</u>	<u>.3</u>	<u>a</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	45.3	89.7	100.1	74.4	79.3	81.7	85.4
Nonreal Estate^b							
Commercial Banks	19.0	30.0	33.7	31.3	37.7	38.3	41.7
Farm Service Agency	1.6	10.0	14.7	9.4	5.1	4.6	4.2
Merchants & Dealers	8.4	17.4	15.1	12.7	16.2	17.5	18.8
Farm Credit System	<u>10.7</u>	<u>19.7</u>	<u>14.0</u>	<u>9.8</u>	<u>12.5</u>	<u>14.0</u>	<u>15.3</u>
Total	39.7	77.1	77.5	63.2	71.5	74.4	80.0

^a Less than .05 billion.

^b Excludes crops under CCC loan.

Table 4-4. Market Share of United States Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1975	1980	1985	1990	1995	1996	1997
<i>percent of total</i>							
Farm Credit System	30	32	32	26	25	25	26
Commercial Banks	29	23	25	35	40	40	40
Farm Service Agency	5	11	14	12	7	6	5
Insurance Companies	7	7	6	7	6	6	6
Individuals & Others	<u>29</u>	<u>27</u>	<u>23</u>	<u>20</u>	<u>22</u>	<u>23</u>	<u>23</u>
Total ^a	100	100	100	100	100	100	100

^a Excludes crops under CCC loan.

Source: Agricultural Income and Finance, Economic Research Service, USDA, AIS-69 September 1998.

Table 4-5. New York Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1975	1980	1985	1990	1995	1996	1997
<i>million dollars</i>							
Assets							
Real Estate	4881	6178	6520	7858	8527	8892	8892
Livestock	653	1527	983	1258	1138	1175	1138
Machinery	1303	1718	1875	1847	1835	1853	1840
Crops ^a	396	561	491	540	352	392	266
Purchased Inputs	c	c	27	74	88	119	139
Financial Assets	481	607	668	667	673	677	692
Total	7714	10591	10564	12244	12613	13108	12967
Liabilities & Equity							
Real Estate Debt	634	1038	1125	906	854	851	839
Nonreal Estate Debt ^b	748	1582	1472	1268	1318	1387	1513
Total	1382	2620	2597	2174	2172	2238	2352
Owner Equity	6332	7971	7967	10070	10441	10870	10615
Total	7714	10591	10564	12244	12613	13108	12967
Percent Equity	82	75	75	82	83	83	82

^a Excludes crops under CCC loan.

^b Excludes CCC loans.

^c Not available.

Table 4-6. Changes in Structure, New York Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1975	1980	1985	1990	1995	1996	1997
<i>percent of total</i>							
Assets							
Real Estate	63	58	62	64	68	68	69
Livestock	9	15	9	10	9	9	9
Machinery	17	16	18	15	14	14	14
All Other	11	11	11	11	9	9	8
Total ^a	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	46	40	43	42	39	38	36
Nonreal Estate Debt ^b	54	60	57	58	61	62	64
Total	100	100	100	100	100	100	100

^a Excludes crops under CCC loan.

^b Excludes CCC loans.

Source: Economic Research Service, USDA. Data revised November 1998.

Table 4-7. New York Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1975	1980	1985	1990	1995	1996	1997
<i>million dollars</i>							
Real Estate							
Farm Credit System	262	367	449	407	332	301	273
Individuals & Others	214	373	363	217	256	262	269
Commercial Banks	101	108	89	116	146	170	184
Farm Service Agency	45	145	192	157	116	111	107
Insurance Companies	8	26	26	9	4	7	6
CCC - Storage	4	19	6	a	0	0	0
Total	634	1038	1125	906	854	851	839
Nonreal Estate							
Commercial Banks	266	632	597	417	374	372	405
Farm Service Agency	37	284	287	219	176	180	184
Merchants & Dealers	164	338	257	216	274	296	319
Farm Credit System	281	328	331	416	494	539	605
Total ^b	748	1582	1472	1268	1318	1387	1513

^a Less than .5 million.

^b Excludes CCC loans.

Table 4-8. Market Share of New York Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1975	1980	1985	1990	1995	1996	1997
<i>percent of total</i>							
Farm Credit System	39	27	30	38	38	38	37
Commercial Banks	27	28	26	25	24	24	25
Farm Service Agency	6	17	19	17	14	13	13
Insurance Companies	1	1	1	a	a	a	a
Individuals & Others	27	27	24	20	24	25	25
Total	100	100	100	100	100	100	100

^a Less than .5 percent.

Source: Economic Research Service, USDA. Data revised November 1998.

**Table 4-9. Nonaccrual and Nonperforming Loans
Farm Credit System, December 31**

Year	Nonaccrual	Nonperforming ^a
percent of loan volume		
1988	6.5	12.3
1989	5.1	11.0
1990	4.5	9.7
1991	3.7	8.0
1992	2.7	6.0
1993	2.3	4.2
1994	1.9	2.9
1995	1.4	2.1
1996	1.1	1.5
1997	0.9	1.3
1998 (6/30)	0.9	1.3

^a Nonaccrual plus accrual that are restructured or 90 days or more past due.

Source: Annual and Quarterly Reports.

**Table 4-10. Nonaccrual, Nonperforming, and Total Delinquent
United States Commercial Banks, December 31**

Year	Farm Nonreal Estate Loans			Farm Real Estate Loans		
	Nonaccrual	Nonperforming ^a	Delinquent ^b	Nonaccrual	Nonperforming	Delinquent
percent of loan volume						
1982	1.3	2.5	5.1			
1983	2.7	3.8	6.3			
1984	4.1	5.2	7.8			
1985	6.1	7.3	10.1			
1986	5.9	7.0	9.4			
1987	4.2	4.8	6.5			
1988	2.9	3.3	4.5			
1989	1.9	2.3	3.7			
1990	1.6	1.9	3.1			
1991	1.6	1.9	3.2			
1992	1.5	1.8	2.8	1.0	1.3	2.1
1993	1.2	1.4	2.2	0.8	1.1	1.8
1994	0.9	1.1	2.0	0.6	0.8	1.5
1995	0.9	1.1	2.1	0.6	1.0	2.1
1996	1.0	1.3	2.4	0.6	0.8	1.5
1997	0.9	1.1	2.0	0.5	0.7	1.3
1998 ^c	0.8	1.3	2.4	0.5	0.8	1.4

^a Includes nonaccrual and past due 90 days but accruing.

^b Includes nonperforming and past due 30 to 89 days but accruing.

^c Figures as of June 30, 1998.

Source: Agricultural Financial Databook, Board of Governors of the Federal Reserve System.

**Table 4-11. Delinquent Major Farm Program Direct Loans
Farm Service Agency**

Date	Farm Ownership ^a		Operating Loans ^a		Emergency Loans		Economic Emergency		Soil and Water ^a	
	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.
	percent of loan volume									
9/30/83	3	4	13	8	25	13	16	11	7	4
9/30/84	4	4	17	11	32	22	20	15	9	5
9/30/85	5	5	13	10	37	25	23	19	11	7
9/30/86	5	5	16	12	41	31	27	25	12	9
9/30/87	6	7	19	14	45	34	31	34	14	10
9/30/88	8	9	25	19	57	38	42	45	20	12
9/30/89	9	10	26	20	60	41	44	51	23	13
9/30/90	7	9	23	17	60	37	42	50	18	10
9/30/91	7	9	24	16	61	38	42	51	18	11
9/30/92	7	9	25	19	61	41	42	55	19	9
9/30/93	7	10	24	19	62	40	40	61	18	10
9/30/94	6	11	23	18	60	41	40	63	17	11
9/30/95	6	12	23	20	60	38	39	62	18	13
9/30/96	6	13	21	19	48	37	36	65	17	14
9/30/97	6	14	20	17	44	34	33	67	15	15
9/30/98	5	13	18	16	39	34	31	68	16	14

^a Includes limited resource loans.

Source: FSA Report Code 616.

**Table 4-12. Delinquent Major Farm Program Guaranteed Loans
Farm Service Agency**

Date	Farm Ownership		Farm Operating	
	U.S.	N.Y.	U.S.	N.Y.
	percent of loan volume			
9/30/95	1	1	2	1
9/30/96	1	1	2	1
9/30/97	1	1	2	1
9/30/98	1	2	3	2

Source: FSA Reports 4067 and 4067-C

The value of US farm real estate increased by six percent during 1997 and 1998 following a seven percent rise in 1996. High prices for grains and large "Freedom to Farm" payments resulted in a bidding-up of land prices. In contrast, New York land prices increased only four percent in 1996 and were constant during 1997. Nationally, livestock inventories declined during 1998 due to the sharp decline in prices for fed livestock.

Total outstanding farm debt has increased at a three to six percent rate for the past few years. For the US, commercial banks are the dominant lender with a 40 percent market share. In the Northeast, Farm Credit is the dominant lender with a 37 percent share in New York and a greater share in many other states. A rapidly expanding market segment is merchants and dealers. For example, John Deere is expanding into general operating credit and GMAC/Case Credit is offering mortgage loans.

Farm Credit System loan quality continues to improve and is at a very acceptable level. Commercial bank loan quality has been excellent for several years. Farm Service Agency guaranteed loans also have low delinquency rates. FSA direct loans, however, continue to have high but slightly declining delinquency rates. The low price and localized weather problems that resulted in a large emergency appropriation for agriculture have not yet had a significant affect on lender portfolios.

FIGURE 4-1. ANNUAL AVERAGE SHORT TERM INTEREST RATES

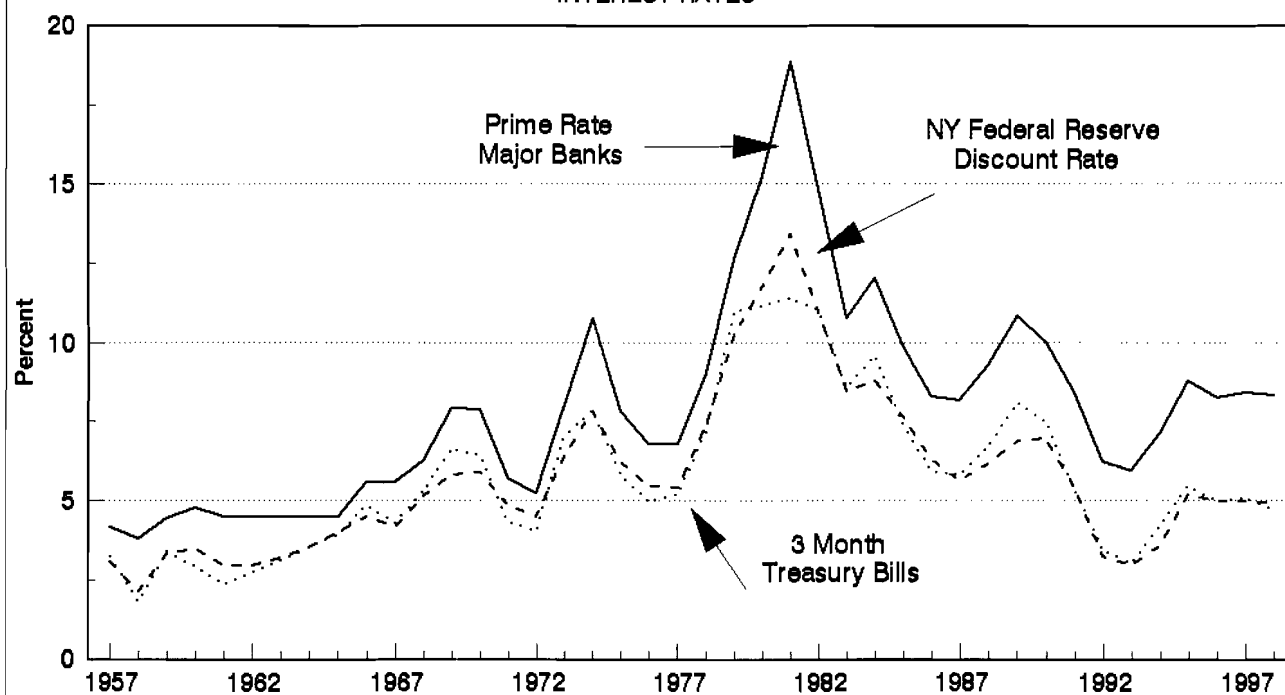
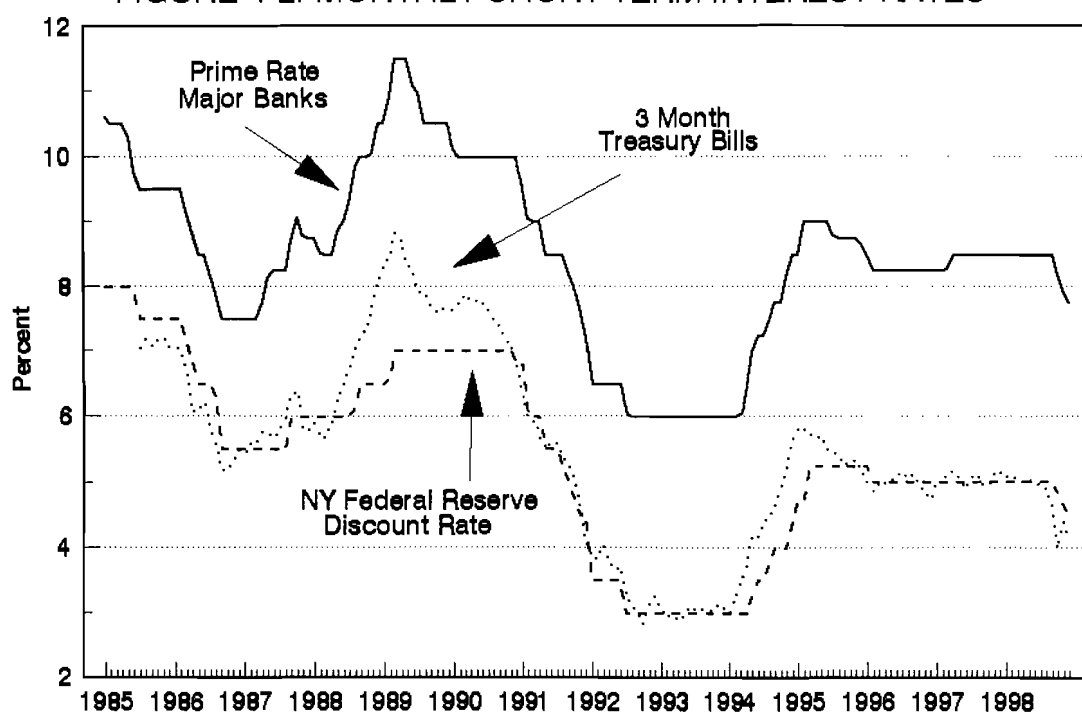
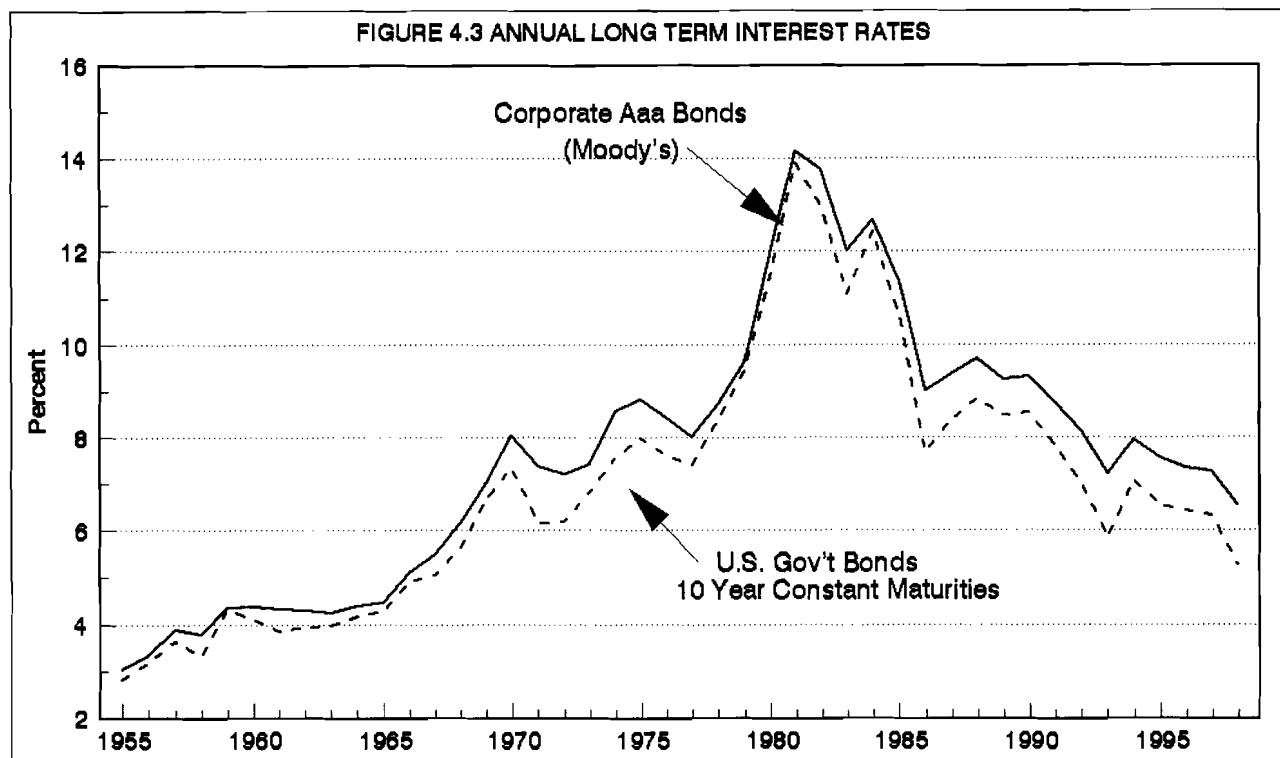


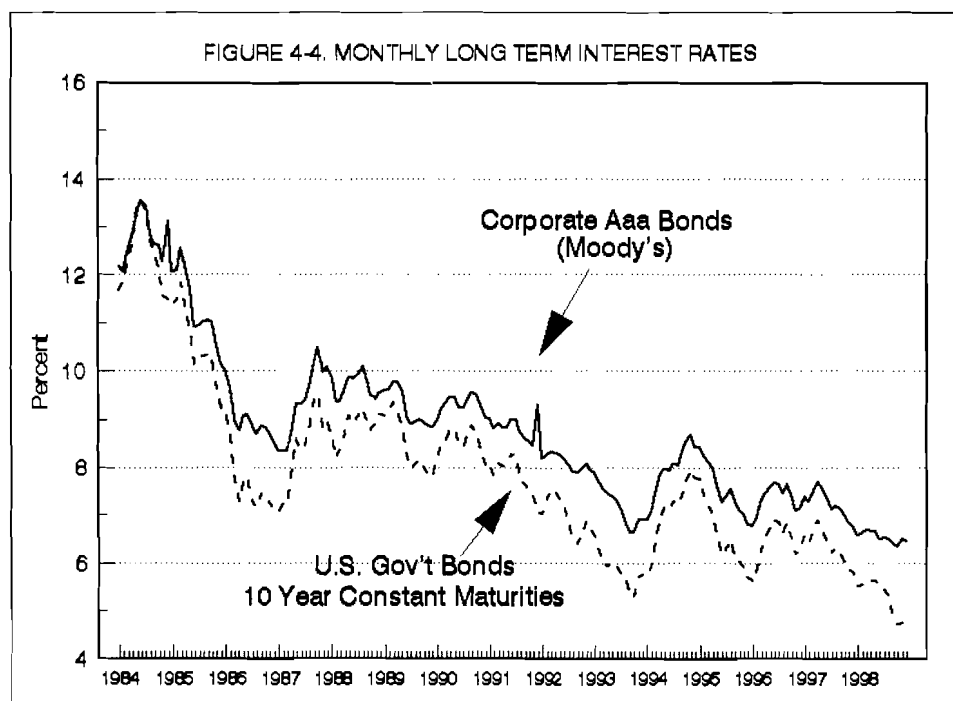
FIGURE 4-2. MONTHLY SHORT TERM INTEREST RATES



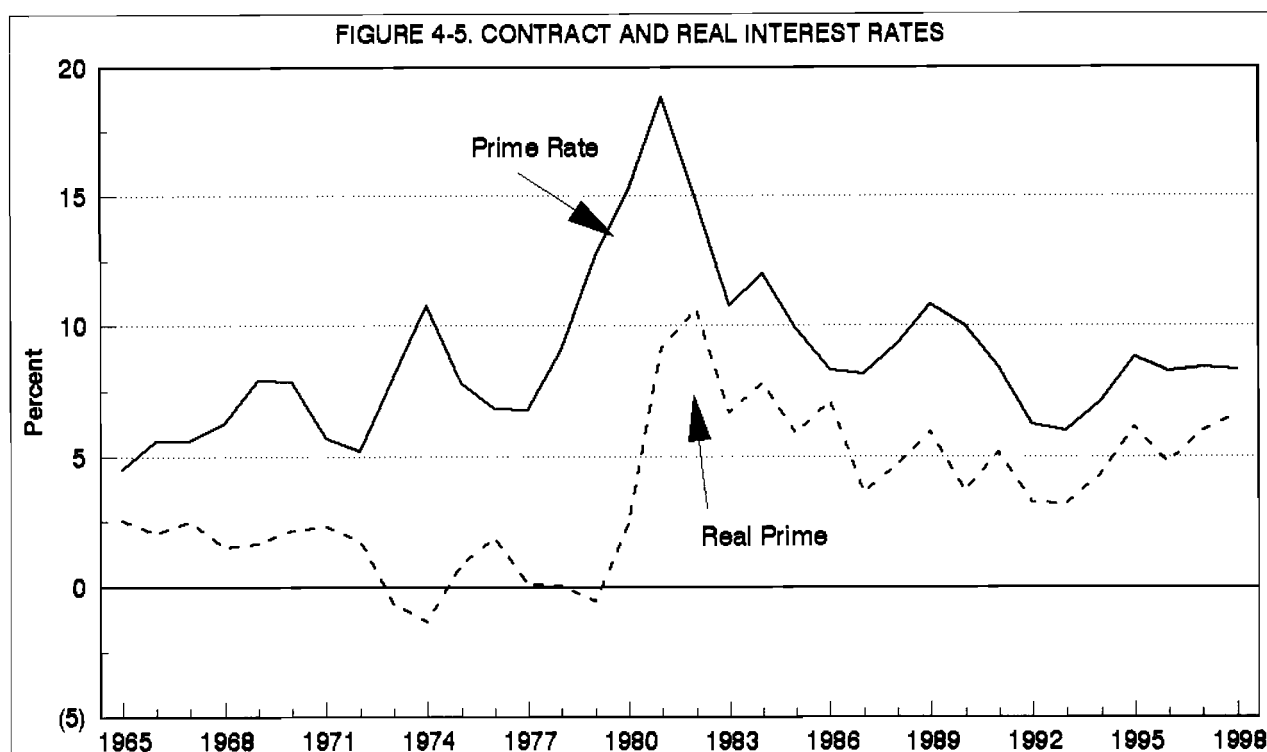
3 Month Treasury Bills		
	1997	1998
Jan.	5.05	5.09
Feb.	5.00	5.11
Mar.	5.14	5.03
Apr.	5.17	5.00
May	5.13	5.03
June	4.92	4.99
July	5.07	4.96
Aug.	5.13	4.91
Sept.	4.97	4.66
Oct.	4.95	4.01
Nov.	5.15	
Dec.	5.16	



Following a three year period of near stability, short term interest rates dropped sharply in late 1998. During October and November, the Federal Reserve Board lowered the Federal Funds target rate by 0.75 percent. This resulted in immediate drops in the three month treasury bill rate and the prime rate.



U.S. Gov't. Bonds 10 Year Constant Maturity		
	1997	1998
Jan	6.58	5.54
Feb	6.42	5.57
Mar	6.69	5.65
Apr	6.89	5.64
May	6.91	5.65
June	6.49	5.50
July	6.22	5.46
Aug	6.30	5.36
Sept	6.21	4.86
Oct	6.03	4.73
Nov	5.88	
Dec	5.81	

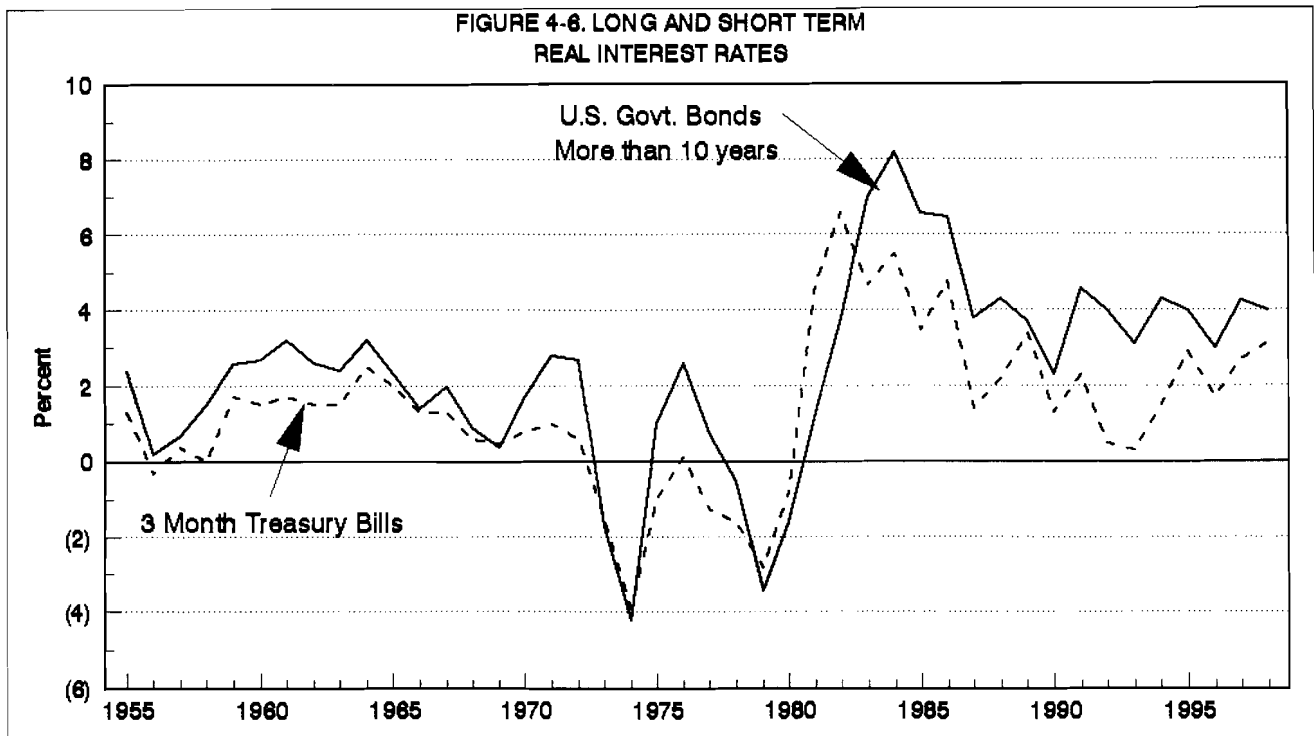


Throughout 1998, long term interest rates continued the gradual decline initiated in early 1997. By the end of the year, long term rates were at their lowest levels in over 30 years. Average rates for ten year government bonds averaged about one percent lower in 1998 than 1997.

Average real short-term interest rates rose again in 1998 because interest rates were constant for most of the year and inflation rates declined. For example, the real three month treasury bill increased from 2.7 to 3.1 percent. However, real long-term rates declined as the interest rate declined more than the rate of inflation. By historical standards, real rates are relatively high.

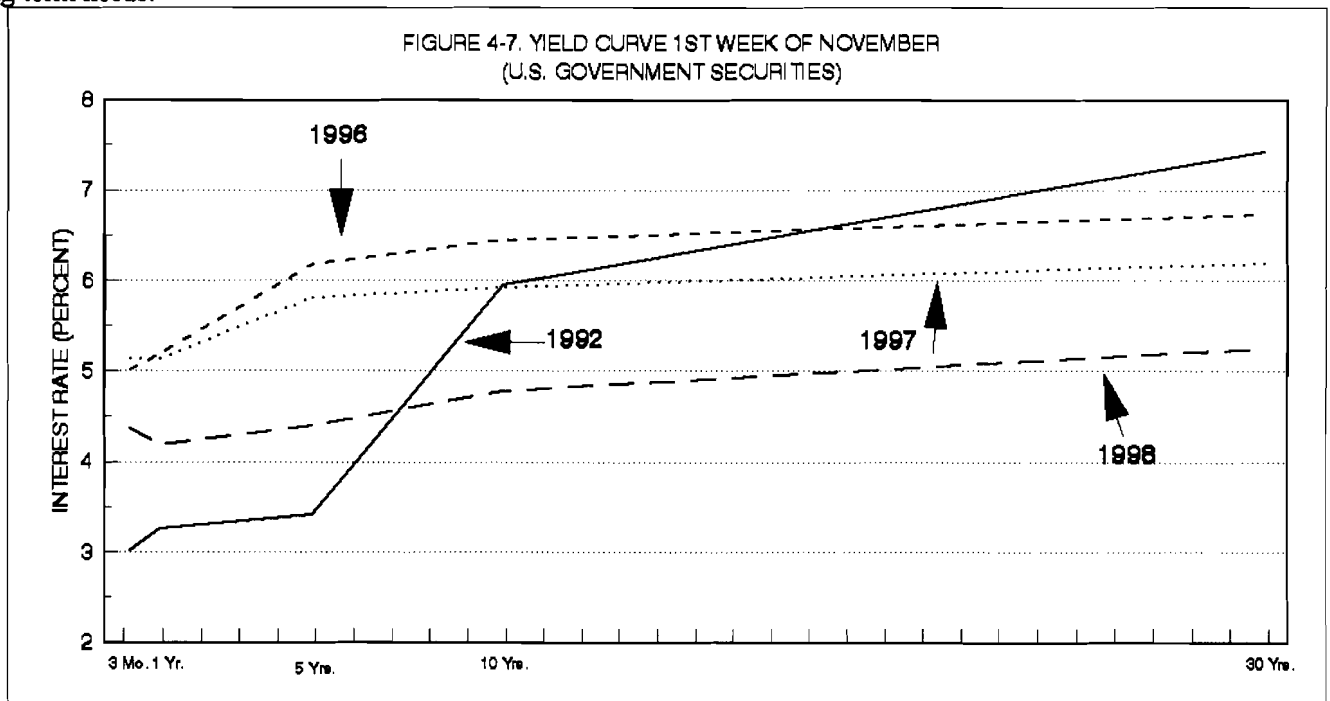
The early November 1998 yield curve is slightly flatter and considerably below the 1997 curve. This means that the short-run cost of selecting a fixed rate loan rather than a variable rate loan was again quite low. Fixed rate loans in the seven to eight percent range were widely available in late 1998.

Expected economic conditions for 1999 provide little basis for anticipating significant changes in short term interest rates from late 1998 levels. For example, the three month treasury that is in the 4.2 - 4.4 range is unlikely to experience major change. The expected modest rates of growth of the economy should not create sufficient demand for loans to pull interest rates up. On the other hand a growth rate of 2.2 percent is high enough that the Federal Reserve Board is unlikely to force rates significantly lower in efforts to stimulate economic growth. Inflation rates are low and the expected modest rise over 1998 levels should have little impact on interest rates. Similarly, unemployment is under control and not expected to rise significantly.



Long term rates may decline modestly before firming up later in the year, but any change is expected to be small, compared to 1998 declines.

Farm level interest rates will be about three quarters of a percent lower in 1999 than 1998. Although rates are not expected to move strongly in either direction, there will be variability. Farmers should plan to lock in rates at any dip in farm level rates. 1999 should be a good year to lock in fixed rates on a part of a farm's long term needs.



Chapter 5. Grain and Feed

William G. Tomek, Professor

Wheat production was relatively large in the 1997 and 1998 crop years, both in the world and in the United States. World inventories are at average levels, while stocks in the U.S. are large relative to expected demand (Table 5-1). Last year, U.S. prices were forecast to decline about 75 cents per bushel; the actual decrease was 92 cents per bushel. For the current crop year, ending next May 31, wheat prices are expected to decrease another 73 cents. U.S. wheat production was over 2.5 billion bushels this year and last, and export trade remains at moderate levels, especially as measured relative to available supplies.

TABLE 5-1. PRODUCTION, STOCKS AND PRICES OF WHEAT,
WORLD AND U.S., 1989-99

Year	World Wheat					U.S. Wheat			
	Production	Use	Export trade	Ending stocks	Stocks as % of use	Production	Ending stocks	Stocks as % of use	Average price per bu.
	--- million metric tons ---					percent			
1989-90	538	532	102	121	23	2,037	536	24	3.72
1990-91	588	564	102	145	26	2,736	866	35	2.61
1991-92	542	559	123	129	23	1,981	472	20	3.00
1992-93	562	545	124	147	27	2,459	529	21	3.24
1993-94	559	563	118	141	25	2,396	568	23	3.26
1994-95	525	549	111	118	21	2,321	507	20	3.45
1995-96	537	550	114	105	19	2,183	376	16	4.55
1996-97	583	578	124	111	19	2,285	444	19	4.30
1997-98 ^a	611	585	118	137	23	2,527	722	31	3.38
1998-99 ^b	588	601	115	124	21	2,557	827	33	2.65

^a Preliminary.

^b Forecast.

Source: Various issues of *World Agricultural Supply and Demand Estimates*, ERS and FAS, USDA.

World-wide corn production will be record high in 1998 (597 million metric tons), but use has grown too. Hence, stocks are expected to increase only slightly relative to use in the world as a whole. The U.S. is estimated to have produced the second largest crop in history, 9.8 billion bushels, and stocks of corn in the U.S. are expected to increase in the 1998-99 crop year (Table 5-2). Export trade in corn is forecast to be fairly flat compared to last year. Prices were forecast to decline only five or six cents per bushel last year, but export demand weakened during the year. Thus, the season average price for corn in 1997-98 was down 36 cents from the year before. With supplies increasing still further relative to demand, the USDA expects prices in 1998-99 to be down 25 to 45 cents per bushel from 1997-98.

Table 5-3 provides more information about acres harvested, yield, and production for selected crops in New York State and the Nation. New York mirrored the nation in the sense that we had large crops of wheat, corn, and soybeans. The corn crop in the state this year was record large, 79.8 million bushels produced on 700,000 acres. The previous record of 77 million bushels, set in 1981, was produced on 830,000 acres. Soybean production in the State in 1998 was a bit below last year's record high, but is still

large by historical standards. Soybean acreage and yields have been growing in the State. Local grain prices, like those in the rest of the country, are low. The State's hay crop was larger in 1998 and prices lower.

TABLE 5-2. PRODUCTION, STOCKS AND PRICES OF CORN,
WORLD AND U.S., 1989-99

Year	World Corn					U.S. Corn			Average price per bu.
	Production	Use	Export trade	Ending stocks	Stocks as % of use	Production	Ending stocks	Stocks as % of use	
	----- million metric tons -----					percent			dollars
1989-90	461	477	74	73	15	7,532	1,344	17	2.10
1990-91	478	471	59	80	17	7,934	1,521	20	2.12
1991-92	487	488	67	79	16	7,477	1,100	14	2.25
1992-93	533	509	70	105	21	9,477	2,113	25	1.89
1993-94	471	506	67	72	14	6,336	850	11	2.31
1994-95	560	539	72	94	17	10,103	1,558	17	2.26
1995-96	515	544	78	66	12	7,374	426	5	3.24
1996-97	591	569	73	91	16	9,293	883	10	2.71
1997-98 ^a	577	582	74	85	15	9,366	1,308	15	2.45
1998-99 ^b	597	589	70	94	16	9,836	1,779	19	2.00

^a Preliminary. ^b Forecast.

Source: Various issues of *World Agricultural Supply and Demand Estimates*, ERS & FAS, USDA.

TABLE 5-3. CROP PRODUCTION, UNITED STATES AND NEW YORK, 1996-98^a

Crop	Acres harvested			Yield per acre			Production		
	1996	1997	1998	1996	1997	1998	1996	1997	1998
United States	million acres			bushels			million bushels		
Feed grains	94.5	92.4	90.4	2.83 ^b	2.87 ^b	3.02 ^b	267.3 ^c	265.2 ^c	273.3 ^c
Wheat	62.9	63.6	59.1	36.3	39.7	43.3	2,285	2,527	2,557
Soybeans	63.4	69.6	71.6	37.6	38.8	38.6	2,382	2,703	2,763
New York	thousand acres			bushels			thousand bushels		
Corn grain	630	650	700	107	116	114	67,410	75,400	79,800
Oats	75	110	105	57	70	62	4,275	7,700	6,510
Wheat	150	135	130	43	56	54	6,450	7,560	7,020
Soybeans	77	107	97	37	40	37	2,849	4,280	3,589
				tons			thousand tons		
Corn silage	510	545	N.A.	15.5	15.0	N.A.	7,905	8,175	N.A.
All hay	1,510	1,500	1,450	2.30	2.26	2.60	3,468	3,384	3,769

^a All 1998 data are preliminary. U.S. estimates as of 11/10/98; NY estimates as of 10/9/98.

^b Metric tons.

^c Million metric tons.

Source: USDA *World Agricultural Supply and Demand Estimates* and New York Crop Reporting Service.

More detail about supply, disappearance, stocks, and prices at the national level is shown in Table 5-4. The price forecasts for the 1998-99 crop year are those of the USDA. They provide a range for the season

average price (around the point estimates shown in Table 5-1 and 5-2). Basically, prices for corn, wheat, and soybeans are forecast to be lower than last year.

TABLE 5-4. BALANCE SHEETS, 1995-96 THROUGH 1998-99

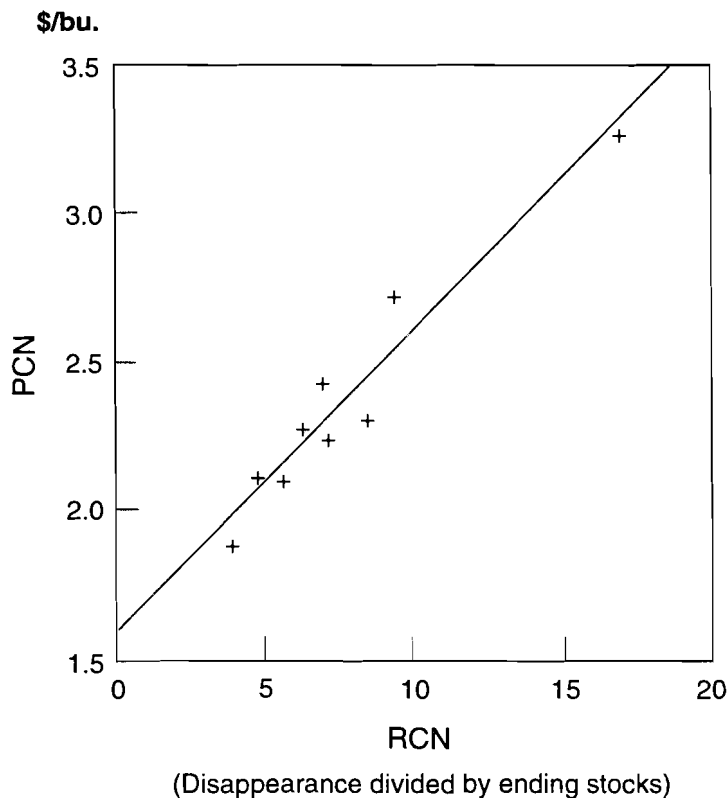
Item	1995-96	1996-97	1997-98(est.)	1998-99 (proj.)
Supply				
FEED GRAINS^a (million metric tons)				
Beginning Stocks (Sept. 1)	45.3	14.4	27.0	38.2
Production	209.2	267.3	265.2	273.3
Imports	2.7	2.8	2.8	2.5
Total	257.2	284.6	295.0	314.0
Disappearance				
Feed and Residual	133.4	156.8	159.6	162.2
Food, Industrial and Seed	46.3	49.2	51.8	53.3
Total Domestic	179.8	206.1	211.4	215.5
Exports	63.0	51.5	45.3	48.3
Total Disappearance	242.8	257.6	256.8	263.8
Ending Stocks	14.4	27.0	38.2	50.2
Season average farm price, corn, per bu.	\$3.24	\$2.71	\$2.45	\$1.80-\$2.20
Supply				
WHEAT (million bushels)				
Beginning Stocks (June 1)	507	376	444	722
Production	2,183	2,285	2,527	2,557
Imports	68	92	95	90
Total	2,757	2,753	3,065	3,370
Disappearance				
Food	883	891	917	925
Seed	104	103	93	93
Feed and Residual	153	314	293	375
Total Domestic	1,140	1,308	1,302	1,393
Exports	1,241	1,001	1,040	1,150
Total Disappearance	2,381	2,310	2,342	2,543
Ending Stocks (May 31)	376	444	722	827
Season average farm price	\$4.55	\$4.30	\$3.38	\$2.55-\$2.75
Supply				
SOYBEANS (million bushels)				
Beginning Stocks (Sept. 1)	335	183	131	200
Production	2,177	2,382	2,703	2,763
Imports	4	9	5	6
Total	2,516	2,575	2,839	2,968
Disappearance				
Crushings	1,370	1,436	1,597	1,615
Exports	851	882	870	840
Seed, Feed	72	83	86	86
Residual	40	43	85	62
Total Disappearance	2,333	2,443	2,639	2,603
Ending Stocks (Aug. 31)	183	131	200	365
Season average farm price	\$6.72	\$7.35	\$6.45	\$5.15-\$5.75

^a Marketing year beginning September 1 for corn and sorghum, June 1 for barley and oats.

Source: World Agricultural Supply and Demand Estimates, USDA.

These data can be summarized via scatter plots. In Figure 5-1, the season average price of corn in the U.S. is plotted against the total crop-year disappearance, divided by year-ending stocks for all feed grains. The data cover the crop years 1989-90 through 1997-98. During this period, the highest price occurred in 1995-96, when the disappearance-to-stocks ratio was 16.9. This is the point in the upper right-hand corner. The lowest price, \$1.89, occurred in the 1992-93 crop year when the disappearance-to-stocks ratio was 3.95; that is, use was only four times larger than year-ending stocks.

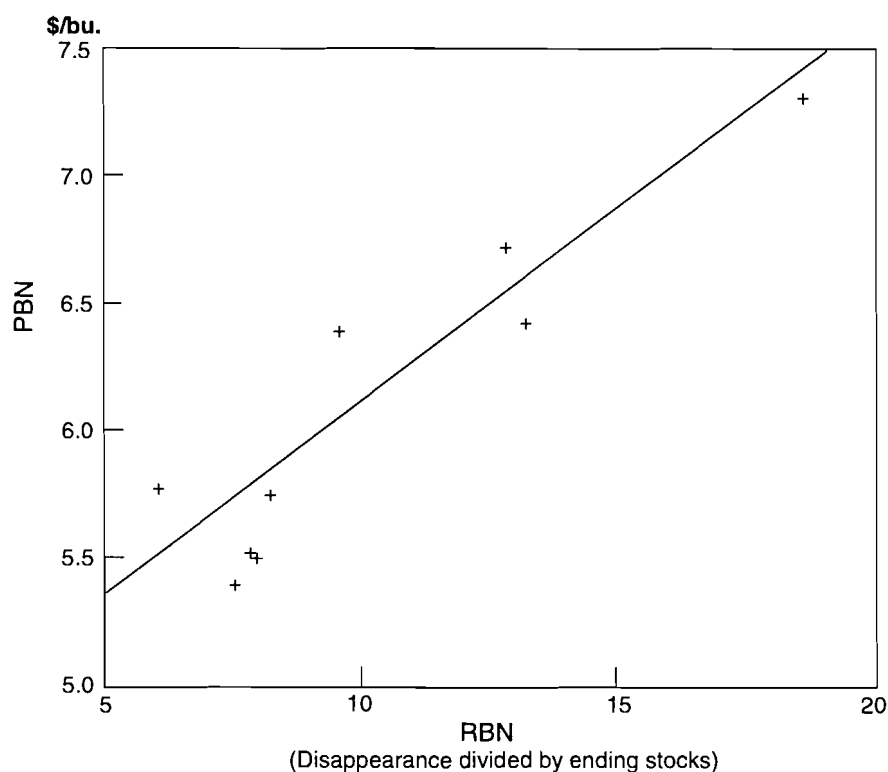
FIGURE 5-1. CORN PRICES VERSUS USE/STOCKS RATIO FOR FEED GRAINS, U.S., 1989-90 TO 1997-98



This year, the USDA estimates that disappearance of feed grains will be about 5.25 times larger than ending stocks. Using the historical relationship, the season average price for 1998-99 is estimated to be \$2.14 per bushel. This is within, but toward the top end of, the range forecast by the USDA.

The corresponding data for soybeans are shown in Figure 5-2. Again, the vertical axis provides the season average price, and the horizontal axis provides the ratio of total use to year-ending stocks. In 1996-97, use was 18.6 times larger than ending inventories, and the season average price was \$7.35 per bushel. For 1998-99, the USDA estimates that use will be about 7.1 times larger than ending stocks, and if this estimate is correct, then the corresponding estimate of season average price is \$5.69 per bushel. As for corn, this estimate is within, and a bit above, the mid-point of the range forecast by the USDA.

FIGURE 5-2. SOYBEAN PRICES VERSUS USE/STOCKS RATIO FOR SOYBEANS, U.S., 1989-90 TO 1997-98



Short-Run Implications for Feed Users

Prices for selected feedstuffs are shown in Table 5-5. Lower commodity prices resulted in lower feed prices in the first half of 1998 than in 1997. Feed prices continued to decline during 1998, as we entered the new crop year, and prices should remain relatively low at least during the first half of 1999. The current crop year is likely, however, to differ from last year in one respect. Namely, last year at this time, the probability of a seasonal price rise was small, and prices did indeed fall. This year, the probability of a seasonal price increase is larger than the probability of a decrease. For grain producers, storage should be profitable. For grain users, prices will likely rise from those experienced this past Fall.

Monthly prices for corn in New York State are shown in Table 5-6. The first column is a five-year average of prices. While the averages are influenced by the exceptionally large price rise in 1996-97, they illustrate that, on average, prices rise seasonally. The second column provides monthly prices for last year, when prices decreased 25 cents per bushel from November through May. The last column provides the initial estimates of prices for the current crop year, and I have inserted a plausible estimate of prices for the April-June window.

The price increases expected to occur over the storage season would cover costs of storage, including the opportunity cost of holding the grain. (This cost is low because the price of corn and interest rates are low.) Of course, an unpredictable shock in the economy could lower (or raise) prices from those expected. To have assured a return to storage, inventory-holders could have sold futures contracts (hedged) at the

beginning of the storage period. It should be noted, however, that a hedging decision should have been made at the same time as the storage decision was made.

TABLE 5-5. PRICES PAID BY FARMERS, NORTHEAST REGION U.S.,
SELECTED FEEDS/FEEDSTUFFS, 1989-98

Year ^a	Mixed dairy feed 16% protein	Complete laying feed	Corn meal	Soybean meal
	--- \$ per ton ---		--- \$ per cwt. ---	
1989	189	207	8.75	15.88
1990	177	194	8.88	13.25
1991	172	188	8.40	12.90
1992	174	194	8.60	12.70
1993	171	201	8.33	13.35
1994	181	211	9.28	14.10
1995	175	199	8.40	12.80
1996	226	243	11.30	15.80
1997	216	260	10.90	18.00
1998	199	216	10.20	14.20

^a Beginning in 1995, prices refer to April 1.

Source: *New York Agricultural Statistics, 1997-98*, New York Agricultural Statistics Service.

TABLE 5-6. MONTHLY PRICES OF CORN, NYS

Month	Five-year average ^a	1997-98	1998-99
	--- \$ per bushel ---		
September	3.22	3.51	2.13
October	2.91	3.02	2.18 ^p
November	2.68	2.64	
December	2.77	2.80	
January	2.90	2.85	
February	2.94	2.81	
March	2.94	2.51	
April	3.13	2.65	
May	3.17	2.39	2.40 ^f
June	3.22	2.56	
July	3.26	2.59	
August	3.11	2.31	
Change, Nov. to May	0.49	-0.25	

^a Average for 1993-94 through 1997-98 crop years.

^p Preliminary.

^f Forecast.

Source: New York Agricultural Statistics Service.

Feed users have some choices to protect against price increases. One is to buy futures contracts for corn and soybean meal. This has the effect of locking in the price of these ingredients, and obviously the buyer would only do it if prices appear favorable. Illustrative prices, as of November 10, 1998, are shown in Table 5-7.

TABLE 5-7. FUTURES PRICES, CBOT, NOVEMBER 10, 1998 CLOSE

Delivery month	Corn	Soybean meal
	<i>Cents per bushel</i>	<i>Dollars per ton</i>
December 1998	222 1/4	148.60
March 1999	233 1/4	155.40
May 1999	240	159.40
July 1999	245 1/2	162.50
September 1999	250 3/4	165.00
December 1999	257 1/2	170.00

Alternatively, a feed user could buy call options. If prices of the underlying commodity (corn and soybean meal) fall, the option is not exercised; if prices increase, the call option provides protection. Illustrative prices (premiums) for call options on March futures are provided in Table 5-8.

TABLE 5-8. PRICES OF CALL OPTIONS ON MARCH 1999 FUTURES, CBOT, NOV. 10, 1998

Corn		Soybean meal	
Strike	Premium	Strike	Premium
<i>--- Cents per bushel ---</i>		<i>--- Dollars per ton ---</i>	
210	24 1/2	140	17.10
220	16 1/4	145	12.75
230	10 1/4	150	9.50
240	6 1/4	155	6.75
250	3 1/2	160	5.00
260	1 5/8	165	3.50
270	7/8	170	2.40

For example, on November 10, the price of soybean meal for March delivery closed at \$155.50 per ton. A call option with a strike price of \$155 per ton (about the same as the price of the March futures) had a price of \$6.75 per ton. Thus, buying a call at this price would have protected the buyer of the call from price increases above the then current price of \$155. Of course, this protection comes at a cost of \$675 per contract (100 tons x \$6.75), and the protection lasts only until the expiration date of the option at the end of February. Many farmers would see this as rather costly insurance. It is also possible, however, to buy out-of-the-money calls more cheaply. On November 10, a call on March soybean meal with a strike price of \$165 was \$3.50 per ton. Thus, the feed user could have obtained protection for price increases that exceeded \$10 per ton (price rising from 155 to over 165) at a cost of \$350 per contract. Given the volatility of soybean prices, some producers might think that this is worthwhile protection against unexpectedly large increases in feed costs.

Of course, if storage space is available, the feed user can buy grain on the cash market and store. This obviously fixes the cost at the current price plus the cost of storage. Or, perhaps feed dealers would be willing to make forward contracts that lock in current prices (presumably plus some fee).

In sum, the evidence as of mid-November suggests that price increases are more probable than price decreases, at least during the first half of the year. Indeed, the prospect of subsidized exports to Russia and

the prospect of a slightly smaller soybean crop than originally expected has strengthened prices in mid-November compared with October and September levels. Nonetheless, spring-time prices of feed are likely to be comparable to those of 1998. The difference is that in 1998, monthly prices were declining from higher levels, while in 1999 monthly prices are more likely to be rising seasonally from harvest-time lows.

Beyond This Crop Year

As Table 5-7 shows, futures markets expect prices to be higher in the next crop year. Prices for delivery of corn and soybean meal in December 1999 are not only higher than the prices in December 1998, but they are higher than the prices for July 1998 delivery. Apparently, the market expects demands to strengthen relative to expected supplies.

The market's expectations contrast with those of Pro Farmer (as reported in *Futures*, November 1998, pp. 30-32). With average production in Fall 1999 (and with expected large carry-in from this year), Pro Farmer is projecting that corn and soybean prices will be the same, or perhaps lower, than this year. In their view, prices will be higher next year only if small crops occur.

Production depends, of course, on acres planted and yields. Figures 5-3 and 5-4 show the trends in corn and soybean yields from 1970 to date. Yields are trending upward, but with substantial variability around trend. Poor growing conditions do result in well-below average yields, but at this time, the best forecast of 1999 yields is a continuation of historic trends.

FIGURE 5-3. U.S. CORN YIELD, 1970 TO PRESENT

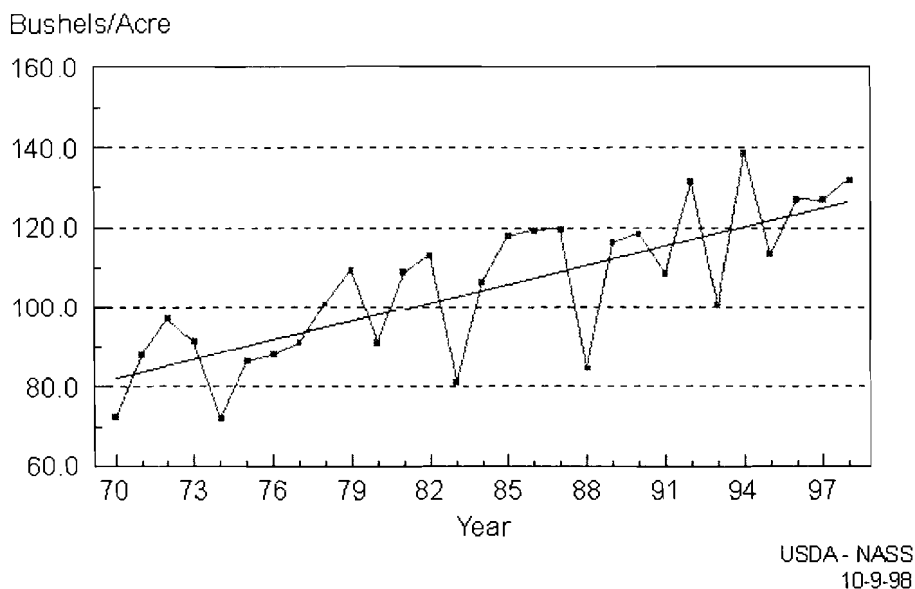
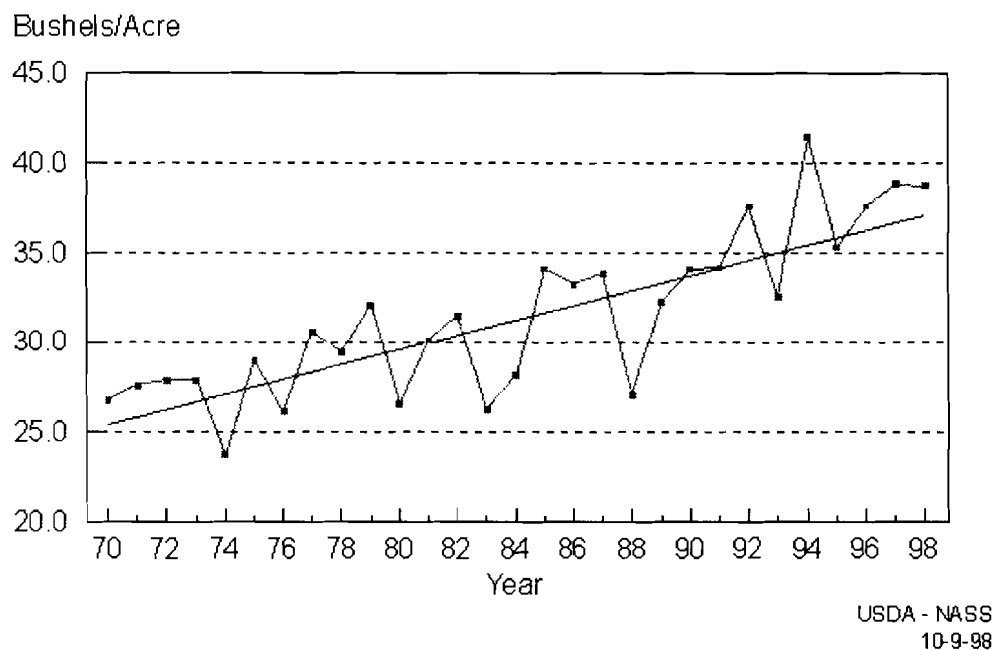


FIGURE 5-4. U.S. SOYBEAN YIELD, 1970 TO PRESENT



One might expect fewer acres to be planted to corn and soybeans in 1999 because of low prices, but prices are low for most commodities. Thus, many corn and soybean producers will not have more profitable alternatives. A clear picture about planting intentions will emerge in the Spring. Likewise, as time passes, more evidence will accumulate about export demand for next year. Uncertainties about next year will persist well into the summer.

A general discussion, such as this chapter, should not be interpreted as specific advice for an individual business. I merely call attention to the fact that, as of mid-November, prices for 1999-2000 delivery of corn and soybeans are above prices for current delivery, and above those expected by one respected analyst (unless a short harvest occurs). Producers may wish to consult marketing advisers or do their own analyses of choices. For example, if the higher prices for the future delivery of next year's crop seem attractive relative to costs, then it is possible to sell some portion of the expected crop output via forward contracts, hedging in futures, or via put options. While it typically is not advisable to sell all of one's crop at one price, use of "forward markets" can help price a part of expected output. Specific decisions, however, depend on the individual farm situation.

Chapter 6. Dairy — Markets and Policy

Mark W. Stephenson, Senior Extension Associate

1999 Dairy Outlook

Positive Factors:

- Quantity of feeds is good in most parts of the Northeast
- Quality of much of the forage harvested is also good
- Purchased grain prices will be low

Negative Factors:

- Milk price will drop
- Replacement animals are expensive

Uncertainties:

- Consumer confidence
- Proposed rule for federal order reform
- La Niña

New York Dairy Situation and Outlook 1996, 1997, Preliminary 1998, and Projected 1999						
Item					Percent Change	
	1996	1997	1998	1999	97-98	98-99
Number of milk cows (thousand head)	702	699	701	701	0.3	0.0
Milk per cow (lbs.)	16,423	16,519	16,660	16,800	0.9	0.8
Total milk production (million lbs.)	11,529	11,547	11,679	11,777	1.1	0.8
Blended milk price (\$/cwt.) ^a	14.41	12.76	14.67	13.74	15.0	-6.3

^a New York–New Jersey blend price, 201–210 mile zone, 3.5 percent fat, this price excludes any premiums, assessments, or hauling fees.

Table 6-1. U.S. Milk Supply and Utilization, 1992–1999.

	1992*	1993	1994	1995	1996*	1997 ^a	1998 ^b	1999 ^c
<u>Supply</u>								
Cows Numbers (thous.)	9,688	9,589	9,500	9,458	9,351	9,258	9,195	9,135
Production/cow (lbs)	15,574	15,704	16,175	16,433	16,498	16,916	17,115	17,530
Production	150.9	150.6	153.7	155.4	154.3	156.6	157.4	160.1
Farm Use	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3
Marketings	149.0	148.8	152.0	153.8	152.8	155.2	156.0	158.9
Beginning Commercial Stocks	4.5	4.7	4.5	4.3	4.1	4.7	4.9	4.1
Imports	2.5	2.8	2.9	2.9	2.9	2.7	4.0	2.8
Total Supply	156.0	156.3	159.4	161.0	159.8	162.6	164.9	165.8
<u>Utilization</u>								
Commercial Disappearance	141.3	145.1	150.3	154.8	155.0	156.6	160.4	160.9
Ending Commercial Stocks	4.7	4.5	4.3	4.1	4.7	4.9	4.1	4.3
DEIP	1.5	1.4	2.4	1.9	0.1	1.1	0.3	0.4
Net Removals (excluding DEIP)	8.4	5.3	2.4	0.2	0.0	0.0	0.0	0.2
Total Use	156.0	156.3	159.4	161.0	159.8	162.6	164.9	165.8

Source: Dairy Situation and Outlook, Milk Production, and Dairy Market News, U.S. Department of Agriculture. Note that total may not add exactly due to rounding.

* Leap year.

^a Revised.

^b Based on preliminary USDA data and Cornell estimates.

^c Projected by Mark Stephenson.

The U.S. Dairy Situation and Outlook

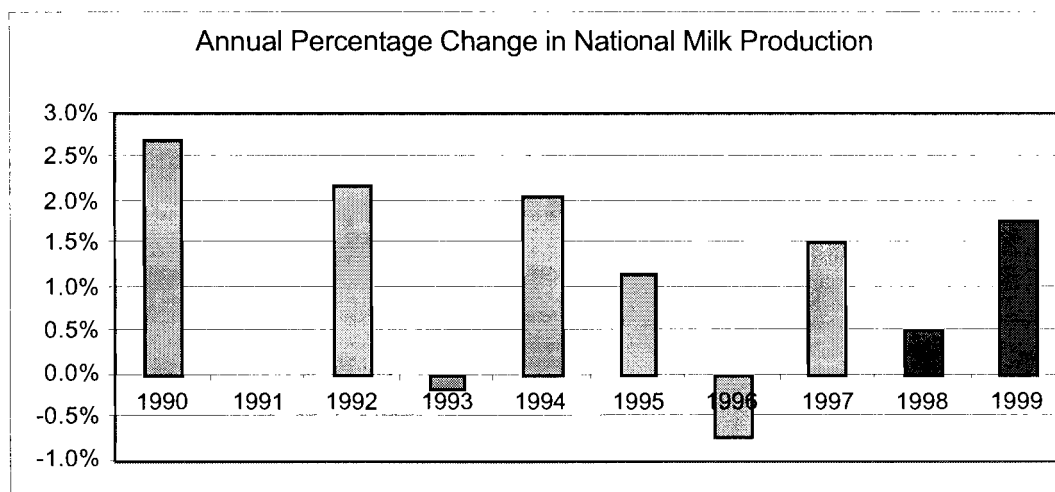
Milk Supplies

The real story of the 1998 U.S. milk supply is one of unusual weather. Last year's outlook described the anticipated effects of El Niño as an unknown but with foreboding overtones. The "little boy" certainly threw a tantrum and the dairy industry was one of its recipients. Projections are that U.S. milk supplies will have grown at about half their normal rate, and the states contributing to that meager growth were certainly a different set than we have come to expect in recent years.

The Northeast enjoyed a rather mild winter this past year complements of El Niño. The weather contributed to larger-than-expected growth in that region's milk supply. On the other side of the country, California was being clobbered with difficult weather. In late Winter and throughout the Spring, heavy rains turned western dry lots into bogs and animals suffered from mud stress. The Southeast, and particularly Florida, was also being hit with heavy rain storms and tornadoes. As we moved into Summer, the entire southern and western regions of the country experienced severe heat. Texas had more than a month of daily high temperatures in excess of 100 degrees. California also experienced much of that heat and the milk yields in those heat stressed cows dropped dramatically. At it's worst in August of 1998, California's milk production per cow had dropped by almost eight percent from year earlier levels. This contrasts sharply with the state's more normal annual growth in milk per cow of about two percent. Florida's heat sparked widespread wild fires and contributed to loss of milk production in that state as well. Overall, El Niño turned milk production trends upside down and raw milk supplies were not growing where processing plants expected them to be. The Northeast sent an unusual number of loads of milk out of the region to fill plants that were short of supply.

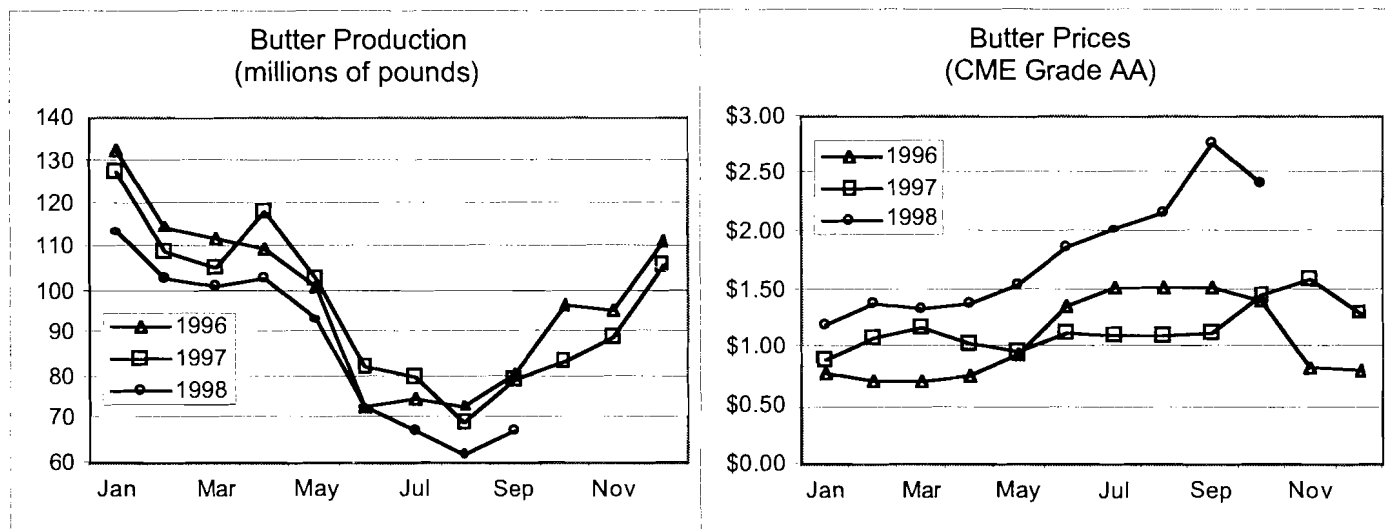
Prices

Milk and dairy product prices set new high water marks in 1998. The previous highs were two years ago (1996) when grain shortages caused milk supplies to decline from the previous year's level. The 1996 reduction of 0.7 percent was much more severe than this year's modest increase of about 0.5 percent. To understand why a modest decline from trend would yield the highest prices ever you have to look more closely individual dairy products, and in particular, butter.



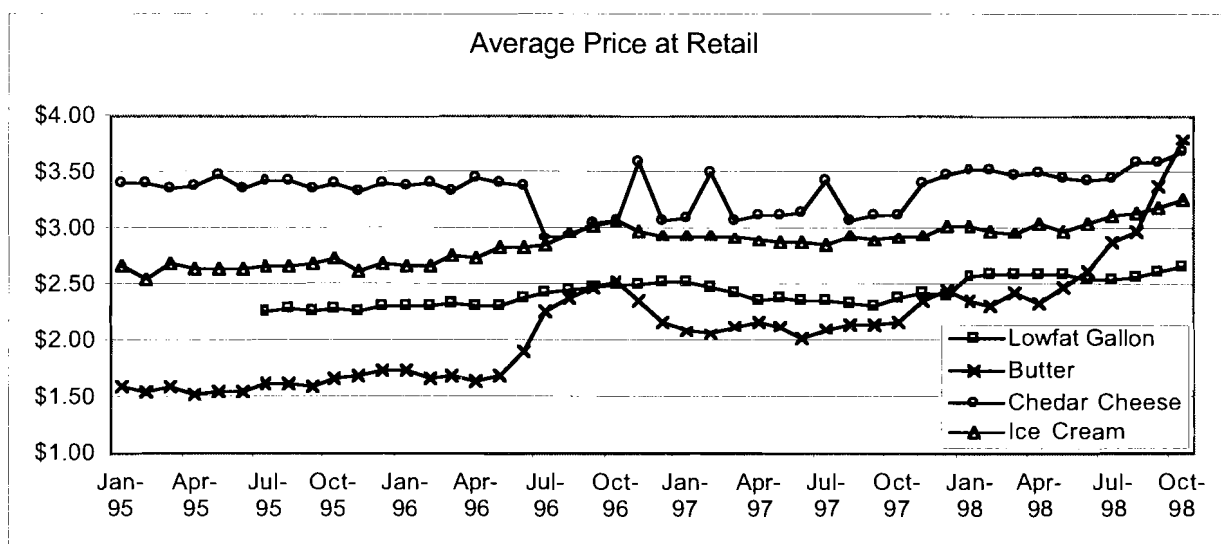
As a state, California has been producing more than 25 percent of the U.S. total butter production and that share has been increasing steadily for many years. This year California's butter production is far short of recent years production levels. Part of the decline is a result of the state's marginal loss in milk production but part of the decline is a shift in processing strategy in the state. In fact, several of the western states have begun to invest more heavily in cheese plants and move production out of butter and nonfat dry milk and into cheese manufacturing. During this year of short milk supplies in California, butter production has dropped by more than 30 percent while at the same time cheese production in that state has increased by about 4 percent. This has been a real shock to butter markets with wholesale prices having more than doubled in the late Summer and early Fall.

Butterfat is an ingredient in cheese making. Butter markets cannot move independently of other dairy products which contain butterfat. As such, cheese markets have responded to the general shortage of milk but also the unusual increase in butterfat value. In September, schools are back in session and demand for fluid milk increases. This increase in class I demand has the effect of tightening available milk supplies for cheese manufacturing but also increases the supply of cream to the butter markets. As we are now moving into the Winter months, retail butter buying for the holiday season is over and wholesale market prices have dropped rather dramatically from their September highs. Together, the butter and cheese markets have pulled farm milk prices to historically high levels. While that is good news for milk producers, consumers have had to face those higher prices at the supermarkets.



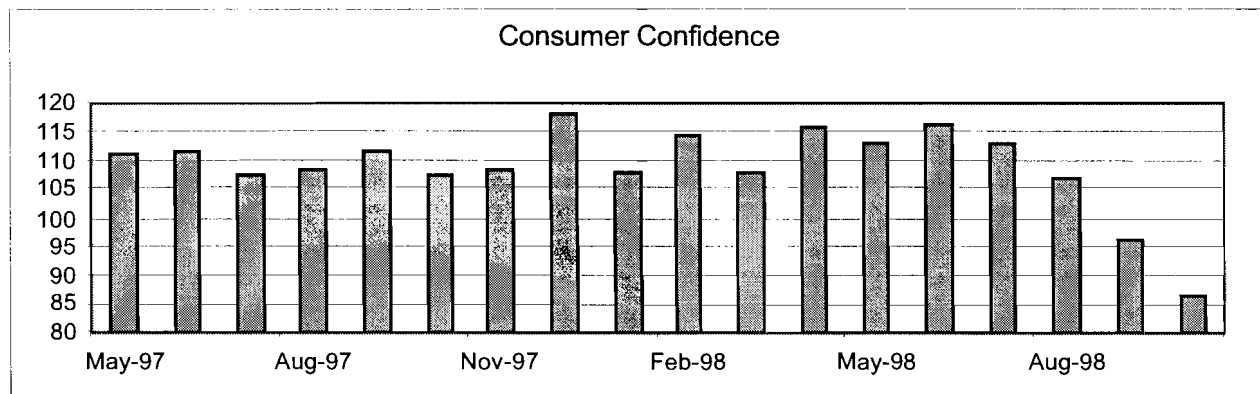
Demand for Dairy Products

Prices at retail have generally reflected the high wholesale prices. The chart below shows that lowfat beverage prices have drifted slightly upward this year. Butterfat value is a relatively small portion of lowfat milk values and the modest price increase is indicative of that. Ice cream on the other hand is 12-14 percent butterfat and, although those prices might have been expected to have increased more than lowfat milk at retail, they have actually increased somewhat less. The tremendous increase at retail is in the butter category. October butter at retail is nearly 75 percent higher than it was a year ago and it may well be expected that consumption would be adversely effected by these high prices. Oddly, butter consumption is currently higher than it was a year ago and the sum of all dairy product consumption is about 1.5 percent greater.



There are many reasons why consumption may increase in the face of increased prices. One of the things that we have observed in the past is a fairly long lag in consumer response to dairy product price changes. Another possibility is that demand (as an economist thinks of demand) may have increased or shifted for one of many reasons. Perhaps tastes or preferences have changed, or maybe the price of dairy products has not increased as rapidly as the price of other substitute products. Tastes or preferences are hard to observe but we can say something about substitutes. High quality dairy products are often compared with other protein sources such as beef or pork and the retail index of all meats has declined against last year's dairy prices. This does not seem to be an explanation for increased demand for dairy products. One other possibility is that our incomes, or expectation of incomes, is great enough to allow us to consume more dairy products.

The Conference Board's Consumer Confidence Index (CCI) and the Index of Consumer Sentiment (ICS) from the University of Michigan has tracked consumer confidence for several decades. The U.S. Chamber of Commerce considers these indexes to be generally good indicators of turning points in the economy. It has been observed that there is about a 6-9 month lag between these indicators and a change in demand for dairy products. We have enjoyed more than a decade of sustained growth in our economy but recently, fueled by fears from the Asian crisis and the stock market drop, the consumer confidence index has declined. This, coupled with relatively high retail prices for dairy products, may mean that consumers will reduce dairy product consumption, or at least the growth in consumption, over the next year. With the recent, and rather dramatic rebound in the stock markets, it remains to be seen if there is also a change in consumer confidence.



Policy

In recent years there has been much to speculate about changes in dairy policy. This year we can report that the major federal policy reform that we had expected has been delayed by an act of Congress. It was anticipated that we would have the final rule for federal milk marketing order reform before us now and that we would be conducting a referendum on the reform package shortly after the beginning of the new year. However, a part of the Omnibus Budget that was signed into law in October delayed the timetable for reform. We now anticipate that we will see a final rule in the time span between February 1 and April 4 (Friday, April 2, may be a good bet on the actual release of the final rule.) and that implementation will take place by October 1 of 1999. The delay of federal order reform will give a new congress time to examine the final rule and assess its impacts on lawmaker's states before it is implemented.

Dairy legislation was not a prominent feature of the Omnibus Budget legislation. The agricultural portions of the bill were largely crafted to address the concerns of low grain prices to growers. However, dairy producers do stand to gain directly from this bill as well. Because there were no "transition" payments to dairy producers in the 1996 FAIR Act, it was felt that some payments should be rendered to this sector as well as to crop growers who received transition payments in the so called "Freedom to Farm" bill. Because of the mandated reduction and ultimate elimination of the price support program, \$200 million has been appropriated to be paid to dairy farmers as transition payments to a more market oriented industry. At this time, there are several proposals from the industry as to how to disburse the money but nothing has yet been decided by the USDA. At current U.S. production levels, this total package would amount to less than 13 cents per cwt. or just a little more than \$1,700 per dairy farm.

With the extension of the federal order reform, the Northeast Dairy Compact legislation was also extended until October 1, 1999. Last year, an acrimonious battle was waged in New York's Assembly over passage of compact legislation for that state. The legislation was never brought to the floor for a vote and with the excellent milk prices of the Summer and Fall, the issue has been somewhat silent. It is likely that as milk prices decline through the Winter and into the Spring that a movement to have New York pass state legislation to join the existing Northeast Dairy Compact will again be a hot issue. The most recent court challenge to the Compact's authority to regulate milk that is produced and processed outside the region but distributed within New England was struck down in November. The District Court judge ruled in favor of the Northeast Compact Commission.

Outlook and Summary

As we look ahead into 1999 the only conclusion that can be reached with regard to milk prices is that they will decline from the 1998 levels. El Niño gave us weather patterns that were generally favorable for the Northeast. 1998 was mild winter and the west coast's loss in milk production was our gain in price. El Niño turns weather patterns upside down but El Niño's sister, La Niña, restores the pattern but exaggerates conditions considered normal. Climatologists are now saying that this winter's weather may be much colder and snowier than usual for the Northeast and more normal weather will return to California.

Dairy producers have never had a stronger set of signals to produce milk than we have seen in 1998. It has fallen out of fashion to talk about a milk/feed price ratio but it is a number that still makes sense. 1997 was a year of quite normal milk prices but feed prices, the single largest expense in producing milk, were also very high. As a result, 1997 was not a particularly good year for milk producers. On the other hand, 1998 was a year of great milk prices and some of the lowest feed prices that we have seen in many years. The chart below shows that the 1998 milk/feed price ratio was also in uncharted territory. In recent years, a milk/feed

price ratio of about 1.58 has been considered neutral. With that ratio we will increase national milk production at about one percent per year. If the ratio is below 1.58 the milk supply doesn't grow as much or may actually contract. If the ratio is much above that, the milk supply grows at a more rapid pace. We can already see the stimulus of the favorable prices in the cow numbers. A decline of one percent per year in the national herd is typical and recent months have shown cow numbers to be building and are essentially equal to the same time period a year ago...dairy producers want to make milk! The one thing that has held national production back at all is milk per cow. As cows enter new lactations free of mud and/or heat stress, production per cow will take off and a tsunami of milk may be the next observed phenomenon.

Taken together, lagging consumer confidence and greater milk production, milk prices must fall. The real trick is answering when and by how much. Expect prices to fall through the winter and into the flush season. Projections are that prices will decline by substantial margins when measured against this year's all time high prices but by no means will they be the worst of the 1990s. The balancing item that makes this story hang together is that there are still many dairy producers looking to retire from the industry. In recent years, asset values have not been strong enough to allow many of these producers to retire with any degree financial independence. This is likely to be a year when many of those producers decide to exit the business. Don't expect 1999 to be the great milk price year that 1998 was but with very low feed costs, it shouldn't be a bad year at all.

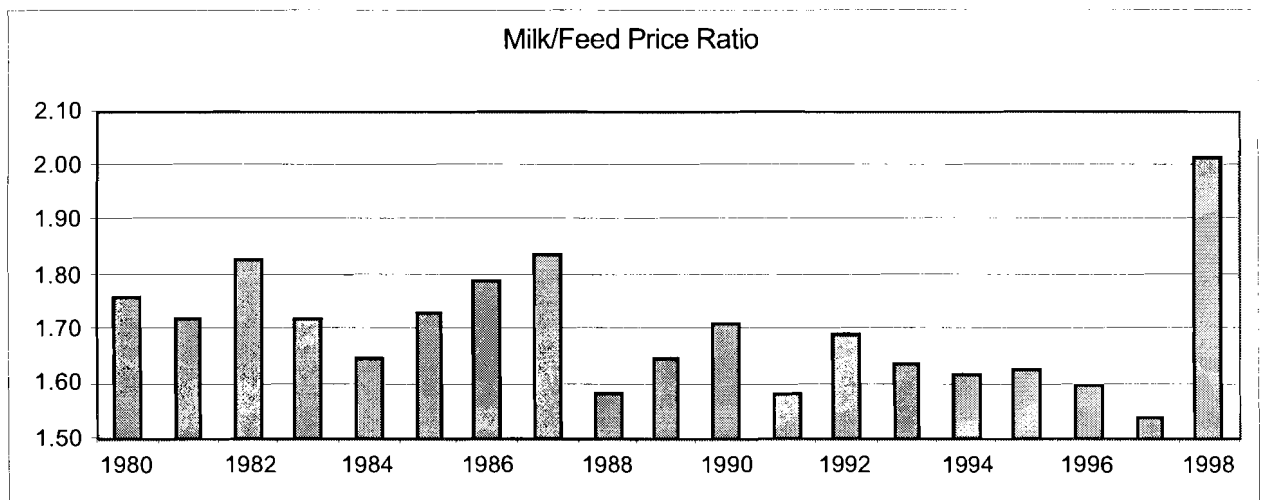
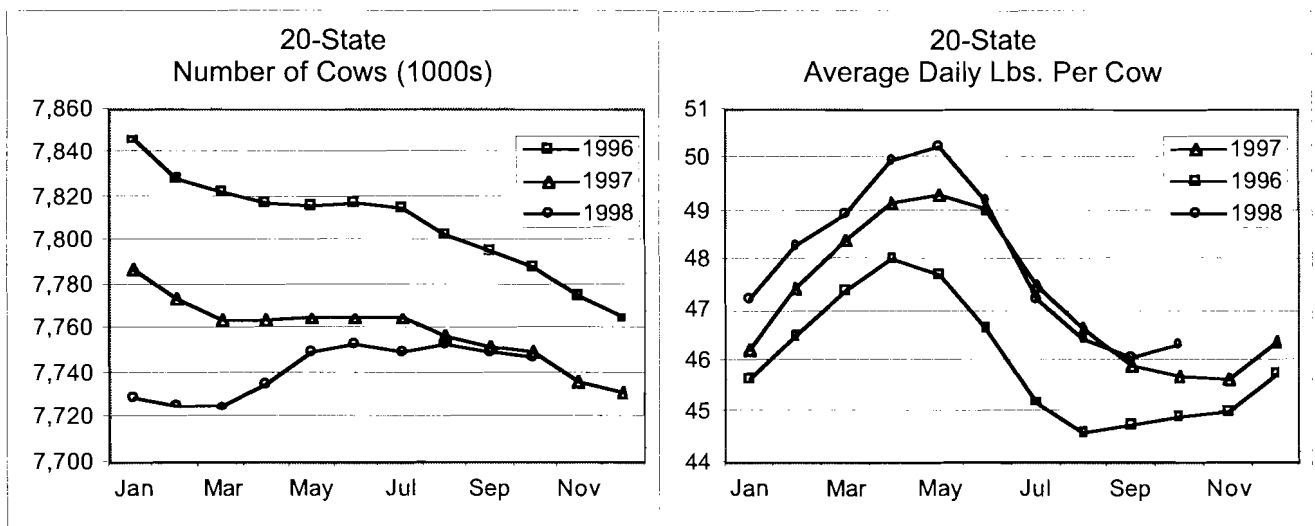


Table 6-2. National Farm Prices for Milk; CCC Purchase, Wholesale, and Retail Prices for Cheddar Cheese, Butter, and Nonfat Dry Milk; and Selected Retail Price Indices, 1990–1998.

	1990	1991	1992	1993	1994	1995	1996	1997 ^a	1998 ^b
Farm Milk (\$/cwt.)									
All Milk (ave. fat)	13.74	12.27	13.15	12.84	13.01	12.78	14.75	13.36	15.30
M–W or BFP (3.5%)	12.21	11.05	11.88	11.80	12.03	11.83	13.39	12.05	14.01
Support (3.5%)	9.89	9.90	9.96	9.98	9.99	9.99	10.25	10.10	9.95
Milk Price: Concentrate Value	1.72	1.58	1.69	1.65	1.62	1.63	1.60	1.54	1.98
Assessment	0.01	0.05	0.13	0.15	0.17	0.15	0.03 ^c	0.00	0.00
Cheddar Cheese, Blocks (\$/lb.)									
CCC Purchase	1.111	1.110	1.116	1.119	1.120	1.120	1.145	1.130	1.115
Wholesale, NCE/Chicago Mercantile Exchange	1.315	1.204	1.282	1.286	1.287	1.304	1.466	1.308	1.543
Butter (\$/lb.)									
CCC Purchase, Grade A or higher, Chicago	1.017	0.983	0.807	0.708	0.668	0.770	0.650	0.650	0.650
Wholesale, Gr. AA, Chicago Merc. Exchange	1.035	1.015	0.844	0.771	0.709	0.814	1.078	1.159	1.772
Nonfat Dry Milk									
CCC Purchase, Unfortified (\$/lb.)	0.831	0.850	0.948	1.002	1.034	1.034	1.065	1.047	1.028
Wholesale, Central States	1.066	0.942	1.092	1.120	1.079	1.086	1.222	1.100	1.053
Retail Price Indices (1982–84=100.0)									
Whole Milk	126.7	122.4	126.4	127.9	131.2	132.3	142.4	141.9	146.6
Cheese	131.2	132.8	135.5	135.3	136.4	137.9	144.7	147.7	152.0
All Dairy Products	126.5	125.1	128.5	129.4	131.7	132.8	142.1	145.5	150.6
All Food	132.4	136.3	137.9	140.9	144.3	148.4	153.3	157.5	160.9
All Consumer Prices	130.7	136.2	140.3	144.5	148.2	152.4	156.9	160.6	163.1

Source: Dairy Situation and Outlook, Dairy Market News, and Federal Milk Order Market Statistics, U.S. Department of Agriculture.

^a Revised.

^b Estimated by Mark Stephenson.

^c The Federal Agriculture Improvement and Reform Act of 1996 terminated the authority to assess marketings of milk on and after May 1, 1996.

The Northeast Dairy Situation and Outlook

Number of Producers Delivering Milk Northeast Federal and State Marketing Orders* 1992-1998							
Markets	1992	1993	1994	1995	1996	^a 1997	^b 1998
New York-New Jersey	12161	12046	11609	11352	10855	10300	10024
New England	4686	4456	4133	4102	4019	3896	3794
Middle Atlantic	5546	5396	5292	4967	4990	5000	4968
E. Ohio-W. Pennsylvania	4553	4357	4205	3983	3856	3474	3332
Western New York	822	705	640	583	553	522	487
Regional Total	29760	28953	27873	26982	26269	25189	24603

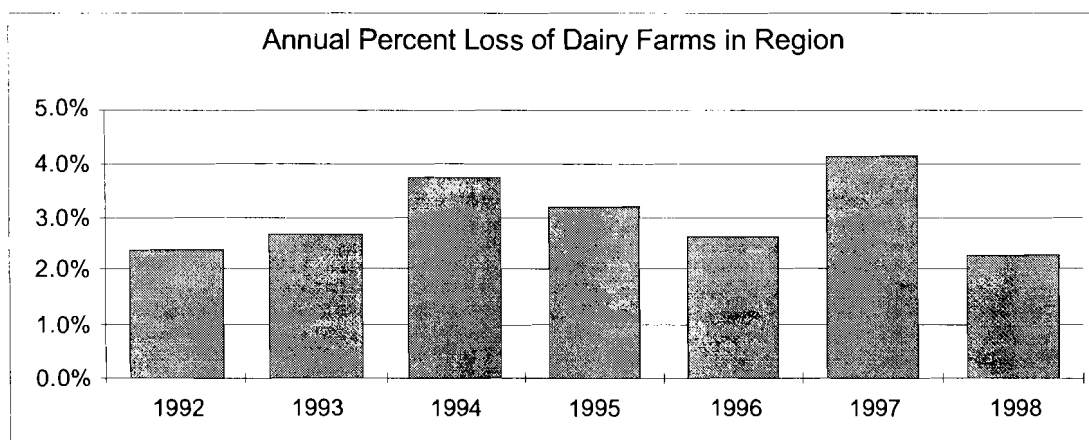
Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

* Simple average for 12 months.

^a Revised.

^b Projected.

In the five federal and state orders shown above, farm loss has averaged about three percent per year over the period from 1991-1997. In 1994, farm loss approached four percent balancing the smaller losses in 1992-1993. In 1996, the smaller than average farm loss may be attributable to a year of strong milk prices. The corollary is that in 1997, farm loss was slightly above trend, in part a result of lower milk prices in the summer. For any particular order, losses may appear to be higher than the actual loss of farm numbers because of where a plant was pooled. 1998 will be a year with the smallest percentage loss in farm numbers that we have seen in many years.



Receipts of Milk from Producers by Regulated Handlers, Million Pounds
Northeast Federal and State Marketing Orders
1992–1998

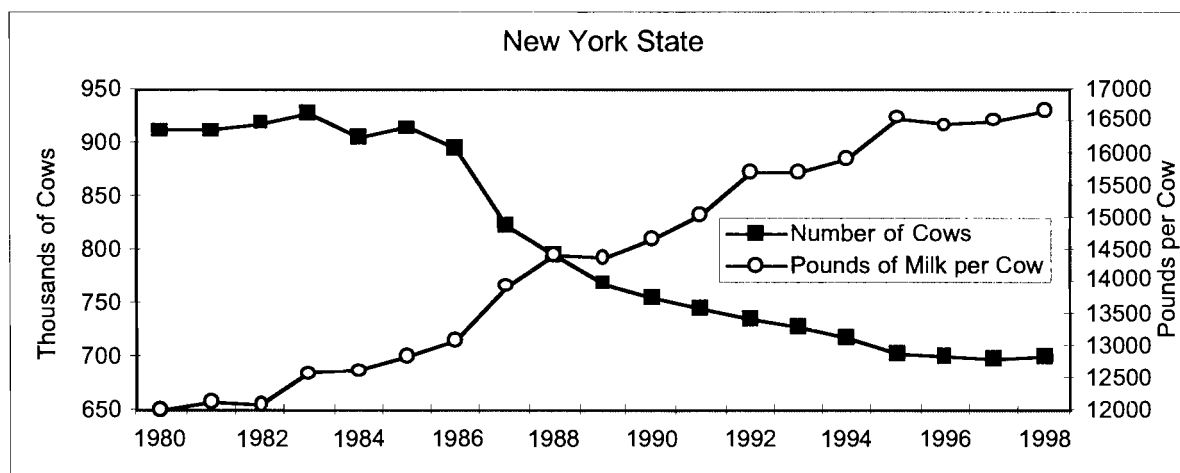
Markets	1992	1993	1994	1995	1996	^a 1997	^b 1998
New York-New Jersey	11254	11452	11519	11935	11721	11772	11873
New England	5478	5345	5099	5370	5383	5452	5768
Middle Atlantic	6543	6381	6295	6210	6092	6481	6289
E. Ohio-W. Pennsylvania	3622	3546	3575	3476	3282	3318	3301
Western New York	1273	1117	1057	969	972	961	996
Regional Total	28170	27841	27545	27960	27450	27984	28227

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

^a Revised.

^b Projected.

Milk production in the federal and state orders is estimated to be up by just less than one percent over year earlier levels. This is a slightly larger gain than is typical for the northeastern orders. The New England order is showing about a 5.8 percent gain over year earlier levels and is a much larger increase than the other four orders shown. The chart below shows that New York producers are responding to higher milk prices by increasing cow numbers. This is a phenomenon that has not been seen in more than a decade.



Source: Milk Production, US Department of Agriculture.

Producer Milk Used in Class I by Regulated Handlers, Million Pounds Northeast Federal and State Marketing Orders 1992–1998							
Markets	1992	1993	1994	1995	1996	^a 1997	^b 1998
New York-New Jersey	4434	4604	4779	4804	4785	4714	4821
New England	2686	2626	2518	2574	2598	2600	2708
Middle Atlantic	3143	2877	2825	2774	2903	2950	2724
E. Ohio-W. Pennsylvania	1866	1820	1790	1794	1754	1731	1721
Western New York	472	452	432	435	419	405	397
Regional Total	12601	12379	12344	12381	12459	12400	12371

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

^a Revised.

^b Projected.

In 1996, the dairy industry was congratulating itself on successful advertising campaigns that had turned around the deteriorating sales of fluid milk. The table above does indicate that in 1996 regional sales of fluid milk turned the corner from the slump of the previous three years. However, in 1997 and 1998 we have witnessed a decline in beverage milk sales from the year earlier levels. It is also apparent that class I utilization has declined in the past two years. This is a function of both a lower volume of class I sales and greater total milk production. The Northeast used to be considered to be net deficit in total milk production but currently there is a small surplus of milk produced in the region.

Percent Class I Utilization by Regulated Handlers Northeast Federal and State Marketing Orders 1992–1998							
Markets	1992	1993	1994	1995	1996	^a 1997	^b 1998
New York-New Jersey	39	40	41	40	41	40	41
New England	49	49	49	48	48	48	47
Middle Atlantic	48	45	45	45	48	46	43
E. Ohio-W. Pennsylvania	52	51	50	52	53	52	52
Western New York	37	40	41	45	43	42	40
Regional Average	44.7	44.5	44.8	44.3	45.4	44.3	43.8

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

^a Revised.

^b Projected.

Minimum Class I Prices for 3.5% Milk Northeast Federal and State Marketing Orders 1992–1998							
Markets	1992	1993	1994	1995	1996	^a 1997	^b 1998
New York-New Jersey ¹	14.41	14.04	14.59	14.04	16.05	14.19	15.96
New England ²	14.51	14.14	14.69	14.14	16.15	14.29	16.06
Middle Atlantic ³	15.02	14.65	15.20	14.65	16.66	14.80	16.56
E. Ohio-W. Pennsylvania ³	14.00	13.62	14.17	13.62	15.63	13.77	15.74
Western New York ³	14.29	13.92	14.47	13.92	15.93	14.07	15.84

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

^a Revised.

^b Projected.

¹ 201–210 mile zone.

² 21st zone.

³ Priced at major city in the marketing area.

In 1993, Class III–A was introduced for milk used in manufacturing nonfat dry milk. For this reason, the 1994–1996 values shown in the table below differ from one another according to the amount of Class III–A product pooled on an order. In some years, the III–A price has pulled the weighted average manufacturing price down by more than 75¢ in some orders. However, strong III–A prices (more than class III in several months) had the opposite impact this year actually increasing average manufacturing prices. This is especially apparent in the New England and Middle Atlantic orders where a higher average III–A utilization is observed.

Minimum Manufacturing Prices for 3.5% Milk Northeast Federal and State Marketing Orders 1992–1998							
Markets	1992	1993	^c 1994	^c 1995	^c 1996	^{a, c} 1997	^{b, c} 1998
New York-New Jersey ¹	11.88	11.80	11.59	11.77	13.36	12.07	14.10
New England ²	11.88	11.80	10.99	11.44	13.28	12.16	14.50
Middle Atlantic ³	11.90	11.51	11.50	11.60	13.24	12.23	14.76
E. Ohio-W. Pennsylvania ³	11.88	11.80	11.97	11.82	13.39	12.05	14.02
Western New York ³	11.83	11.75	11.96	11.48	13.32	12.00	14.04

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

^a Revised.

^b Projected.

^c Weighted average blend of Class III and Class III–A prices.

¹ 201–210 mile zone.

² 21st zone.

³ Priced at major city in the marketing area.

**Minimum Blend Prices for 3.5% Milk
Northeast Federal and State Marketing Orders
1992-1998**

Markets	1992	1993	1994	1995	1996	^a 1997	^b 1998
New York-New Jersey ¹	12.81	12.61	12.98	12.56	14.41	12.76	14.66
New England ²	13.08	12.79	13.10	12.66	14.64	13.02	14.88
Middle Atlantic ³	13.49	13.11	13.35	12.97	14.99	13.41	15.24
E. Ohio-W. Pennsylvania ³	13.01	12.78	13.12	12.75	14.66	12.94	14.82
Western New York ³	12.69	12.58	12.88	12.60	14.44	12.87	14.80
Regional Average	13.02	12.77	13.09	12.71	14.63	13.00	14.88

Source: Annual Federal Milk Order Market Statistics and Annual Statistical Reports for State Orders.

^a Revised.

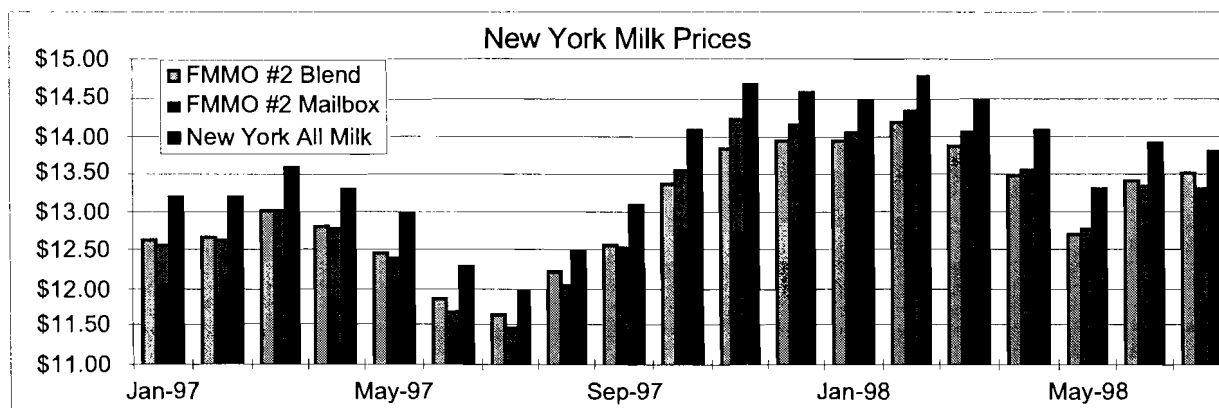
^b Projected.

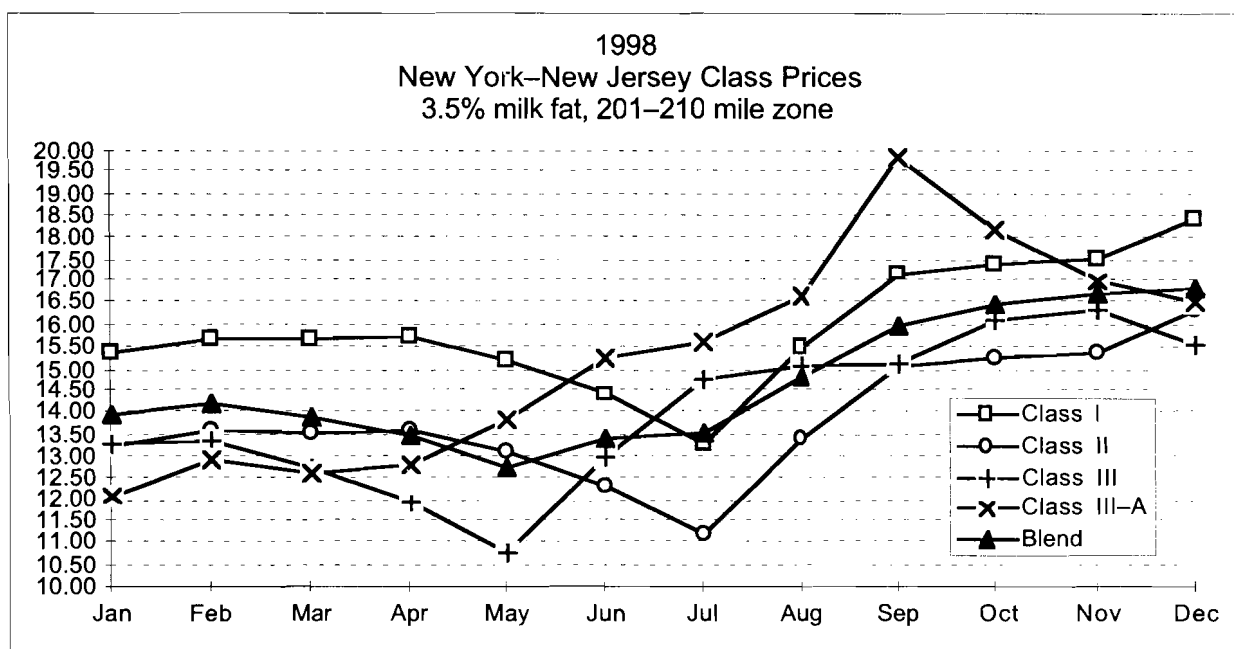
¹ 201-210 mile zone.

² 21st zone.

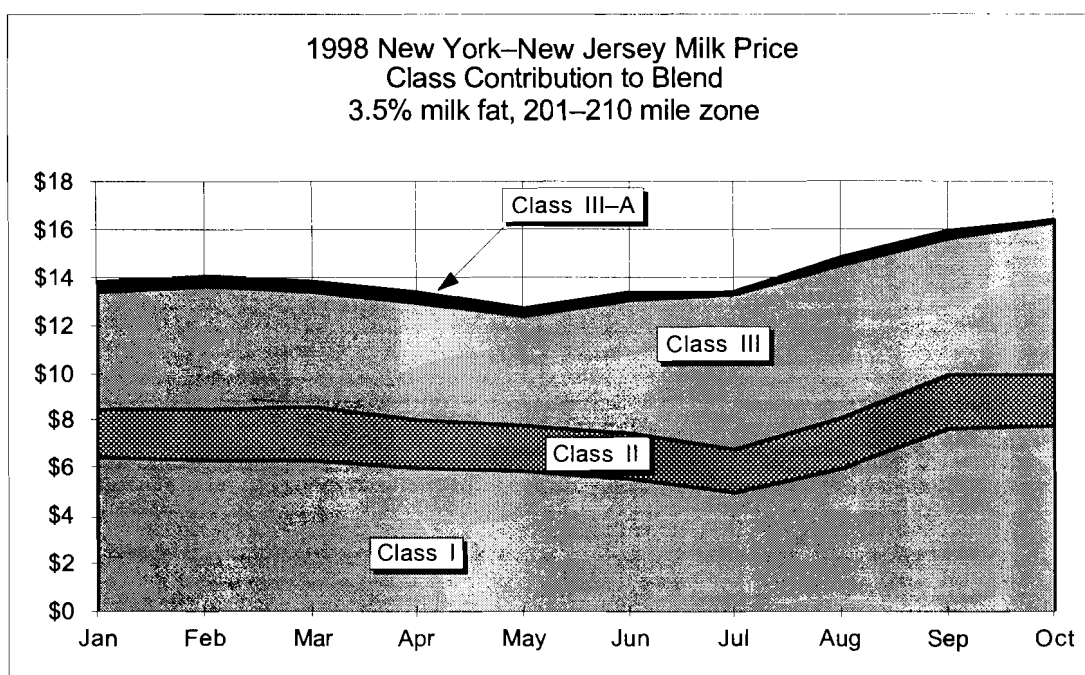
³ Priced at major city in the marketing area.

Several milk prices are often cited. The blend price is the minimum price that processors must pay to producers or their organization (cooperative) for milk purchased. The all-milk price is an estimate of what processors actually paid for milk delivered to their plant. The mailbox price is an estimate of what producers actually received for their milk, net of assessments and hauling costs. The difference between the New York All Milk price and the Mailbox price has averaged about 50¢ per cwt. over the past two years.





As shown in the chart above, class prices do not move in lockstep. Because of this and because of seasonal differences, the impact on farm prices differs from month to month. It has not been characteristic of the III-A price, but for most of the year, the III-A price was greater than the class III price. An even more unusual incident was in June through October when the III-A price was greater than the blend and class I and II prices. The value of butter was prominent in the III-A price calculation this year. The chart below shows that Class I, or fluid milk, and Class III, predominantly milk used for cheese, have the largest impacts on blend prices in the New York–New Jersey order.



MILK PRICE PROJECTIONS*			
New York-New Jersey Blend Price, 3.5 Percent, 201-210 Mile Zone			
Last Quarter 1998 – 1999			
Month	1997	1998	Difference
(dollars per hundredweight)			
October	13.37	16.47 ^a	3.10
November	13.86	16.70 ^a	2.84
December	13.95	16.85 ^a	2.90
<i>Fourth Quarter Average</i>	13.73	16.67 ^a	2.95
Annual Average	12.76	14.67	1.91
Month	1998	1999 ^a	Difference
(dollars per hundredweight)			
January	13.95	16.35	2.40
February	14.19	15.41	1.22
March	13.89	14.32	0.43
<i>First Quarter Average</i>	14.01	15.36	1.35
April	13.50	13.49	-0.01
May	12.73	12.73	0.00
June	13.41	12.43	-0.98
<i>Second Quarter Average</i>	13.21	12.88	-0.33
July	13.53	12.37	-1.16
August	14.88	12.68	-2.20
September	15.98	13.21	-2.77
<i>Third Quarter Average</i>	14.80	12.75	-2.04
October	16.47 ^a	13.74	-2.73
November	16.70 ^a	14.08	-2.62
December	16.85 ^a	14.03	-2.82
<i>Fourth Quarter Average</i>	16.67 ^a	13.95	-2.72
Annual Average	14.67^a	13.74^a	-0.94

* Totals may not add due to rounding.

^a Projected.

Chapter 7. Dairy -- Farm Management

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Herd Size Comparisons

Data from the 253 New York dairy farms that participated in the Dairy Farm Business Summary (DFBS) Project in 1997 have been sorted into nine herd size categories with the averages for the farms in each category presented in Tables 7-1 and 7-2. Note that after the less than 40 cow category, the herd size categories increase by 15 cows up to 100 cows, then by 50 cows up to 200 cows and by 100 cows up to 300 cows. The 300 or more cow category contains the greatest herd size range with one herd exceeding 2,000 cows.

As herd size increases, the average profitability generally increases (Table 7-1). Net farm income without appreciation averaged \$-603 per farm for the less than 40 cow farms and \$131,897 per farm for those with 300 cows and over. This relationship generally holds for all measures of profitability including rate of return on capital.

It is more than size of herd that determines profitability on dairy farms. If size were the only factor, net farm income per cow would be constant throughout all size categories. Farms with 85 to 99 cows averaged \$367 net farm income per cow while the 150 to 199 cow dairy farms average only \$106 net farm income per cow. The 40 to 54 herd size category had the second highest net farm income per cow at \$315. Other factors that affect profitability and their relationship to the size classifications are shown in Table 7-2.

TABLE 7-1. COWS PER FARM AND FARM FAMILY INCOME MEASURES
253 New York Dairy Farms, 1997

Number of Cows	Number of Farms	Avg. No. of Cows	Net Farm Income w/o Apprec.	Net Farm Income Per Cow	Labor & Management Inc./Oper.	Return to all Capital w/o Apprec.
Under 40	10	35	\$-603	\$-17	\$-16,100	-5.8%
40 to 54	30	47	14,821	315	-4,263	-1.9%
55 to 69	26	63	11,609	184	-9,170	-1.5%
70 to 84	24	76	13,189	174	-8,682	-1.2%
85 to 99	16	91	33,388	367	-527	0.6%
100 to 149	58	123	16,428	134	-9,455	-0.8%
150 to 199	23	173	18,378	106	-10,602	0.8%
200 to 299	24	246	34,849	142	-4,863	2.3%
300 & over	42	582	131,897	227	21,371	5.2%

As herd size increased to 85 to 99 cows, net farm income per cow generally increased. Net farm income per cow increased as economies were attained while utilizing family labor. Farms with over 100 cows saw purchased inputs increase per cow before economies of size again appeared. Net farm income per cow will increase as farms become larger if the costs of increased purchased inputs are offset by greater and more efficient output.

The dairy farms with 85 to 99 cows averaged 18,265 pounds of milk sold per cow, 1,611 pounds more per cow than the average of all the smaller farms in the study. The operating costs of producing milk were \$10.73 per hundredweight on this group of farms, the second lowest of all size categories.

Note: All data in this section are from the New York Dairy Farm Business Summary and Analysis Project unless a specific source is specified.

TABLE 7-2. COWS PER FARM AND RELATED FARM FACTORS
253 New York Dairy Farms, 1997

Number of Cows	Avg. No. of Cows	Milk Sold Per Cow (lbs.)	Milk Sold Per Worker (cwt.)	Till-able Acres Per Cow	Forage DM Per Cow (tons)	Farm Capital Per Cow	Cost of Producing Milk/Cwt.	
							Oper.	Total
Under 40	35	14,200	2,881	3.51	5.11	\$8,798	\$11.83	\$20.08
40 to 54	47	17,093	4,330	3.51	7.53	8,609	10.66	17.39
55 to 69	63	17,620	5,067	3.33	7.41	7,988	11.34	16.91
70 to 84	76	17,704	4,644	3.08	7.51	7,599	11.61	16.60
85 to 99	91	18,265	5,685	3.58	8.78	6,789	10.73	15.58
100 to 149	123	18,511	5,971	2.90	7.11	6,571	12.01	16.07
150 to 199	173	19,361	7,302	2.78	6.66	6,535	12.15	15.64
200 to 299	246	20,726	7,993	2.73	7.67	6,176	12.25	14.93
300 & over	582	22,329	10,112	1.90	6.79	5,583	11.67	13.76

With 22,329 pounds of milk sold per cow, farms in the largest herd size group averaged 18 percent more milk output per cow than the average of all herds in the summary with less than 300 cows.

The ability to reach high levels of milk output per cow with large herds is a major key to high profitability. Three times a day milking (3X) is a herd management practice commonly used to increase milk output per cow in large herds. Many dairy farmers who have been willing and able to employ and manage the labor required to milk 3X have been successful. Only 5 percent of the 106 DFBS farms with less than 100 cows used a milking frequency greater than 2X. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 149 cows reported 14 percent of the herds milking more often than 2X, the 150-199 cow herds reported 39 percent, 200-299 cow herds reported 58 percent and the 300 cow and larger herds reported 88 percent exceeding the 2X milking frequency.

A new technology, bovine somatotropin (bST), was used on a much larger proportion of the large herd farms. bST was used sometime during 1997 on 28 percent of the herds with less than 100 cows, 64 percent of the farms with 100 to 299 cows and on 95 percent of the farms with 300 cows and more.

Milk output per worker has always shown a strong correlation with farm profitability. The farms with 100 cows or more averaged over 780,000 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 500,000 pounds per worker. In addition to achieving the highest productivity per cow and per worker, the largest farms practiced the most efficient use of cropland with 1.90 tillable acres per cow, and the most efficient use of farm capital with an average investment of \$5,583 per cow.

The last column in Table 7-2 may be the most important in explaining why profits were significantly higher on the 300 plus cow farms. The 42 farms with 300 and more cows held their average total costs of producing milk to \$13.76 per hundredweight, \$2.10 below the \$15.86 average for the remaining 193 dairy farms. The lower average costs of production plus a similar milk price gave the managers of the 300 plus cow dairy farms profit margins (milk price less total cost of producing milk) that averaged \$1.81 per hundredweight above the average of the other 193 DFBS farms.

Ten-Year Comparisons

The total cost of producing milk on DFBS farms has increased \$1.46 per cwt. over the past 10 years (Table 7-3). In the intervening years, total cost of production had increased before exhibiting a downward trend to 1995. Over the past 10 years milk sold per cow has increased 22 percent and cows per worker by 19 percent on DFBS farms (Table 7-4). Farm net worth has increased significantly, while percent equity has been stable to declining.

**TABLE 7-3. TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1988 to 1997**

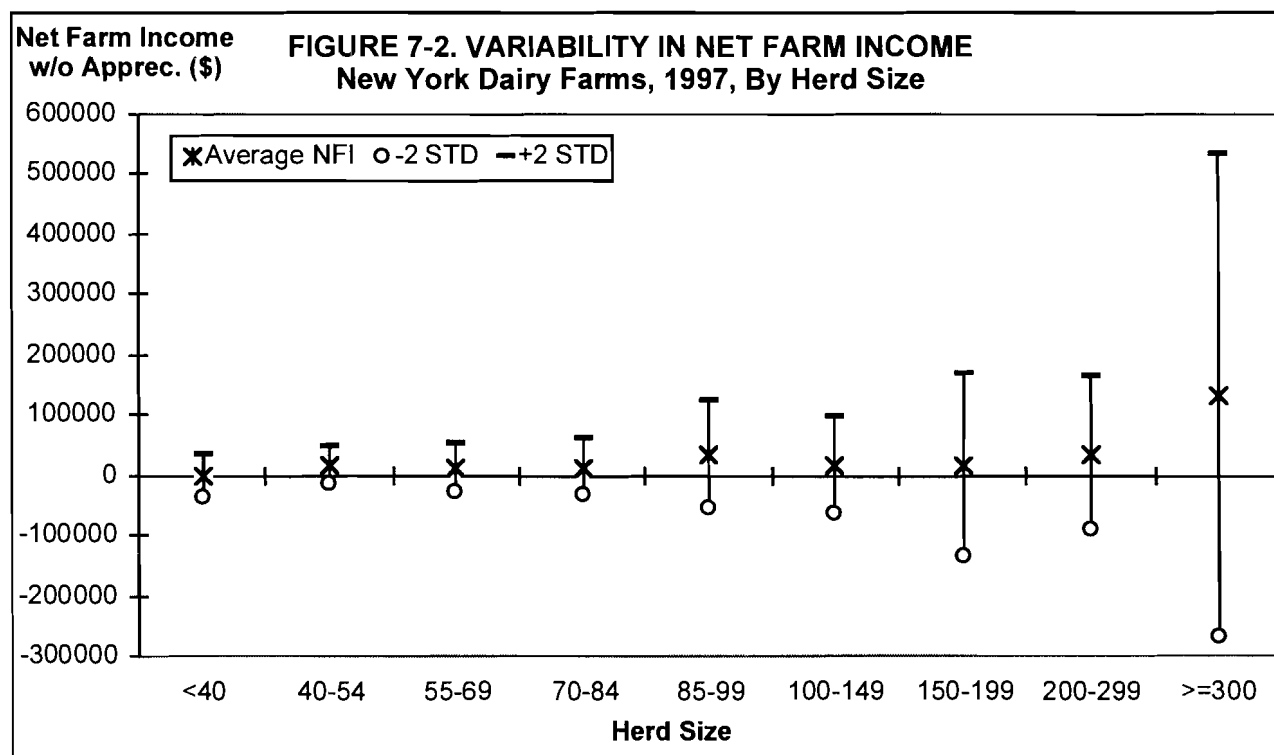
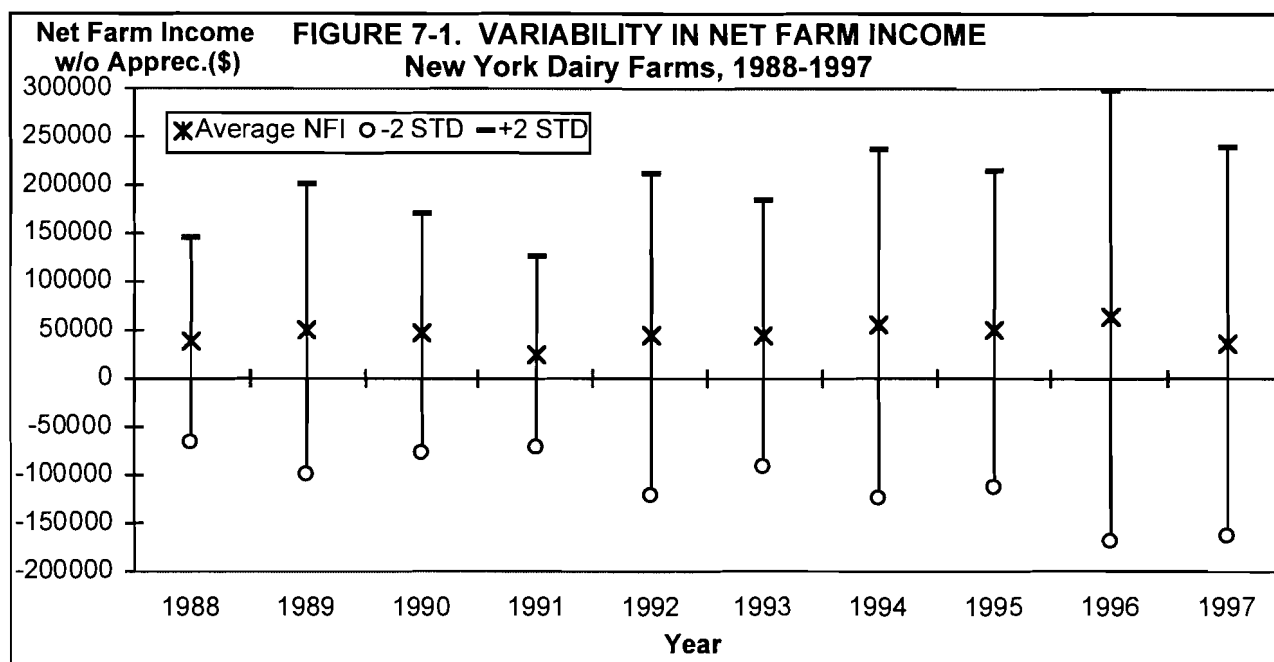
Item	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Operating Expenses										
Hired labor	\$ 1.46	\$ 1.62	\$ 1.77	\$ 1.74	\$ 1.80	\$ 1.86	\$ 1.80	\$1.78	\$1.89	\$1.97
Purchased feed	3.73	4.02	4.28	3.88	3.92	3.85	3.89	3.71	4.73	4.63
Machinery repair, vehicle expense & rent	.87	.96	1.11	.93	.97	.93	.92	.85	1.02	.94
Fuel, oil & grease	.34	.33	.41	.37	.35	.34	.31	.27	.31	.28
Replacement livestock	.11	.17	.20	.15	.21	.17	.21	.15	.19	.18
Breeding fees	.18	.18	.19	.18	.18	.19	.17	.15	.15	.15
Veterinary & medicine	.28	.30	.32	.33	.35	.37	.40	.39	.42	.41
Milk marketing	.52	.49	.53	.58	.63	.64	.67	.70	.59	.52
Other dairy expenses	.56	.60	.68	.65	.70	.72	.88	.92	.99	1.05
Lime & fertilizer	.51	.50	.50	.40	.37	.36	.33	.31	.32	.33
Seeds & plants	.21	.22	.22	.20	.21	.20	.19	.19	.20	.21
Spray & other crop expense	.19	.21	.22	.20	.21	.20	.20	.20	.21	.23
Land, building & fence repair	.22	.27	.32	.19	.24	.21	.21	.16	.23	.19
Taxes	.35	.36	.37	.38	.35	.34	.29	.27	.26	.23
Insurance	.23	.23	.24	.23	.22	.20	.18	.17	.18	.16
Utilities (farm share)	.38	.39	.39	.39	.38	.39	.38	.38	.39	.35
Interest paid	1.02	1.06	1.05	1.07	.88	.80	.81	.94	.91	.90
Misc. (including rent)	.41	.43	.47	.43	.44	.41	.40	.40	.41	.38
Total Operating Expenses	\$11.57	\$12.34	\$13.27	\$12.30	\$12.41	\$12.18	\$12.24	\$11.94	\$13.40	\$13.12
Less: Nonmilk cash receipts	1.86	1.75	1.75	1.73	1.67	1.65	1.30	1.15	1.07	1.14
Increase in grown feed & supplies	.16	.02	.26	.04	.23	.13	.25	.14	.15	.07
Increase in livestock	.08	.12	.15	.18	.08	.22	.21	.25	.18	.15
OPERATING COST OF MILK PRODUCTION	\$ 9.47	\$10.45	\$11.11	\$10.35	\$10.43	\$10.18	\$10.47	\$10.40	\$12.00	\$11.76
Overhead Expenses										
Depreciation: machinery & buildings	\$ 1.31	\$ 1.31	\$1.35	\$ 1.28	\$ 1.19	\$ 1.17	\$ 1.13	\$1.07	\$1.04	\$0.95
Unpaid labor	.11	.12	.19	.18	.16	.15	.12	.12	.13	.13
Operator(s) labor ^a	.95	.98	1.10	1.06	.99	1.00	.86	.92	.88	.79
Operator(s) management (5% of cash receipts)	.74	.81	.85	.73	.76	.74	.73	.70	.80	.73
Interest on farm equity capital (5%)	1.19	1.24	1.24	1.20	1.11	1.11	1.00	.94	.94	.87
Total Overhead Expenses	\$ 4.30	\$ 4.46	\$ 4.73	\$ 4.45	\$ 4.21	\$ 4.17	\$ 3.84	\$ 3.75	\$3.79	\$3.47
TOTAL COST OF MILK PRODUCTION	\$13.77	\$14.91	\$15.84	\$14.80	\$14.64	\$14.35	\$14.31	\$14.15	\$15.79	\$15.23
AVERAGE FARM PRICE OF MILK	\$13.03	\$14.53	\$14.93	\$12.95	\$13.58	\$13.14	\$13.44	\$13.03	\$14.98	\$13.65
Return per cwt. to operator labor, capital & mgmt.	\$ 2.14	\$ 2.65	\$ 2.28	\$ 1.14	\$ 1.80	\$ 1.64	\$ 1.72	\$ 1.44	\$ 1.81	\$ 0.81
Rate of return on farm equity capital	1.8%	3.3%	1.3%	-2.7%	0.2%	-0.4%	0.6%	-1.0%	0.7%	-4.1%

^a1986 = \$850/month, 1987 = \$900/month, 1988 = \$1,000/month, 1989 = \$1,050/month, 1990 = \$1,250/month, 1991 = \$1,300/month, 1992 = \$1,350/month, 1993 = \$1,400/month, 1994 and 1995 = \$1,450/month, 1996 = \$1,500, and 1997 = \$1,550/month of operator labor.

TABLE 7-4. TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1988 to 1997

Item	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Number of farms	406	409	395	407	357	343	321	321	300	253
<u>Cropping Program</u>										
Total tillable acres	302	316	325	330	346	351	392	399	415	462
Tillable acres rented	104	117	121	124	135	135	159	166	183	207
Hay crop acres	156	164	166	169	171	182	195	197	198	219
Corn silage acres	74	81	82	88	98	96	110	117	120	156
Hay crop, tons DM/acre	2.6	2.6	2.7	2.4	2.8	2.7	3.0	2.8	2.8	2.5
Corn silage, tons/acre	14.1	13.4	14.4	13.7	14.5	14.9	16.4	15.6	15.9	16.1
Fert. & lime exp./tillable acre	\$29	\$29	\$29	\$25	\$25	\$25	\$25	\$25	\$26	\$28
Machinery cost/cow	\$398	\$425	\$483	\$438	\$444	\$430	\$438	\$402	\$450	\$429
<u>Dairy Analysis</u>										
Number of cows	102	104	107	111	123	130	151	160	167	190
Number of heifers	82	83	87	92	96	100	116	121	124	139
Milk sold, cwt.	17,200	17,975	19,005	20,060	23,130	24,448	30,335	32,362	33,504	39,309
Milk sold/cow, lbs.	16,882	17,259	17,720	18,027	18,789	18,858	20,091	20,269	20,113	20,651
Purchased dairy feed/cwt. milk	\$3.71	\$3.99	\$4.27	\$3.87	\$3.91	\$3.85	\$3.89	\$3.70	\$4.73	\$4.63
Purc. grain & conc. as % of milk receipts	28%	27%	28%	29%	28%	29%	28%	27%	30%	33%
Purc. feed & crop exp/cwt. milk	\$4.62	\$4.92	\$5.21	\$4.67	\$4.70	\$4.61	\$4.61	\$4.39	\$5.46	\$5.39
<u>Capital Efficiency</u>										
Farm capital/cow	\$6,133	\$6,407	\$6,556	\$6,688	\$6,587	\$6,462	\$6,398	\$6,264	\$6,218	\$6,196
Real estate/cow	\$2,902	\$2,977	\$2,977	\$3,063	\$3,015	\$2,932	\$2,859	\$2,763	\$2,701	\$2,650
Mach. invest./cow	\$1,083	\$1,154	\$1,233	\$1,267	\$1,203	\$1,165	\$1,150	\$1,098	\$1,107	\$1,108
Asset turnover ratio	.45	.48	.48	.43	.47	.46	.50	.49	.55	.52
<u>Labor Efficiency</u>										
Worker equivalent	3.17	3.30	3.37	3.38	3.60	3.68	4.02	4.40	4.48	5.01
Operator/manager equivalent	1.35	1.39	1.39	1.37	1.41	1.45	1.49	1.56	1.56	1.60
Milk sold/worker, lbs.	542,708	544,598	563,349	593,297	641,893	664,868	755,178	736,269	747,861	784,604
Cows/worker	32	32	32	33	34	35	38	36	37	38
Labor cost/cow	\$426	\$469	\$541	\$538	\$552	\$568	\$558	\$570	\$582	\$598
<u>Profitability & Financial Analysis</u>										
Labor & mgmt. income/operator	\$11,911	\$18,004	\$14,328	\$-955	\$11,254	\$9,000	\$14,789	\$10,346	\$18,651	\$-1,424
Farm net worth	\$426,123	\$468,848	\$471,322	\$480,131	\$515,215	\$542,126	\$608,749	\$624,261	\$648,186	\$685,665
Percent equity	66%	68%	66%	64%	64%	65%	63%	61%	61%	57%

Distribution of Income



The range in individual farm profitability has been increasing over time. Figure 7-1 shows the average net farm income, plus and minus two standard deviations, over the past ten years. Figure 7-2 shows the variability in net farm income by herd size in 1997, again plus and minus two standard deviations. The range in profit for larger farms is significantly greater than for smaller farms.

TABLE 7-5. COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 63 New York Dairy Farms, 1988 - 1997

Selected Factors	1988	1989	1990	1991
Milk receipts per cwt. milk	\$13.05	\$14.54	\$14.85	\$12.90
<u>Size of Business</u>				
Average number of cows	125	134	139	148
Average number of heifers	101	105	115	123
Milk sold, cwt.	22,329	24,586	25,580	27,692
Worker equivalent	3.64	3.82	3.96	4.19
Total tillable acres	342	346	387	397
<u>Rates of Production</u>				
Milk sold per cow, lbs.	17,879	18,361	18,375	18,663
Hay DM per acre, tons	2.8	2.6	2.9	2.5
Corn silage per acre, tons	13	13	14	13
<u>Labor Efficiency</u>				
Cows per worker	34	35	35	35
Milk sold per worker, lbs.	612,803	643,658	646,573	661,027
<u>Cost Control</u>				
Grain & concn. purchased as % of milk sales	28%	27%	28%	29%
Dairy feed & crop expense per cwt. milk	\$4.70	\$5.06	\$5.22	\$4.75
Operating cost of producing cwt. milk	\$8.81	\$9.75	\$10.61	\$9.77
Total cost of producing cwt. milk	\$13.76	\$14.91	\$16.26	\$15.03
Hired labor cost per cwt.	\$1.12	\$1.27	\$1.50	\$1.37
Interest paid per cwt.	\$0.80	\$0.86	\$0.84	\$0.86
Labor & machinery costs per cow	\$875	\$948	\$1,055	\$1,027
Replacement livestock expense	\$1,873	\$2,806	\$4,221	\$2,388
Expansion livestock expense	\$8,692	\$7,965	\$8,363	\$17,576
<u>Capital Efficiency</u>				
Farm capital per cow	\$6,249	\$6,674	\$7,011	\$7,068
Machinery & equipment per cow	\$1,245	\$1,359	\$1,473	\$1,510
Real estate per cow	\$2,843	\$2,947	\$3,059	\$3,112
Livestock investment per cow	\$1,278	\$1,387	\$1,484	\$1,485
Asset turnover ratio	0.50	0.53	0.48	0.44
<u>Profitability</u>				
Net farm income without appreciation	\$62,261	\$82,377	\$69,969	\$37,757
Net farm income with appreciation	\$79,843	\$115,907	\$84,436	\$59,792
Labor & management income per operator/manager	\$29,063	\$42,505	\$26,210	\$1,390
Rate return on:				
Equity capital with appreciation	7.5%	12.0%	4.3%	0.9%
All capital with appreciation	7.0%	10.4%	5.4%	3.1%
All capital without appreciation	3.9%	5.8%	4.0%	0.7%
<u>Financial Summary, End Year</u>				
Farm net worth	\$506,546	\$586,768	\$616,155	\$627,789
Change in net worth with appreciation	\$43,009	\$78,215	\$27,683	\$5,639
Debt to asset ratio	0.30	0.28	0.29	0.31
Farm debt per cow	\$1,801	\$1,783	\$1,997	\$2,037

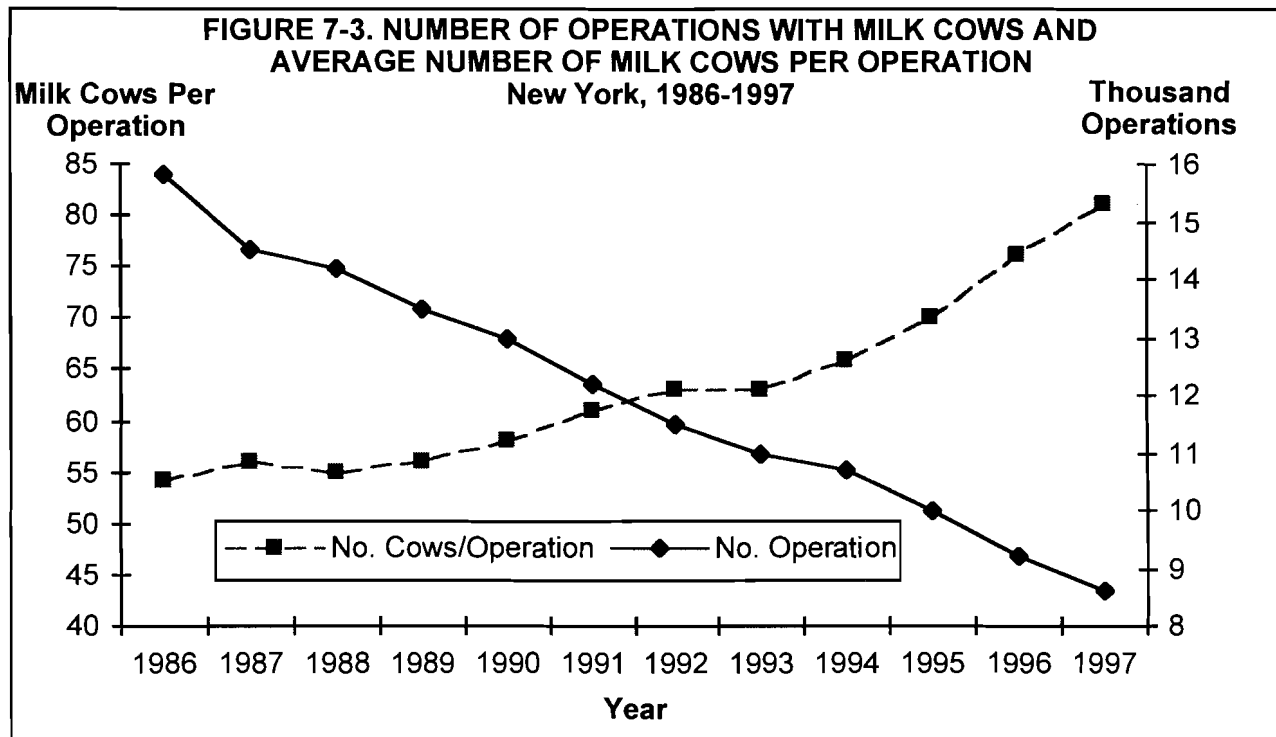
Farms participating in the DFBS each of the last 10 years have increased size of business, labor efficiency and milk sold per cow (Table 7-5). While net farm income has generally increased, rates of return on capital have not.

TABLE 7-5. COMPARISON OF FARM BUSINESS SUMMARY DATA (Continued)
Same 63 New York Dairy Farms, 1988 - 1997

1992	1993	1994	1995	1996	1997
\$13.51	\$13.17	\$13.47	\$13.03	\$15.02	\$13.67
167	183	196	211	225	230
126	137	150	160	168	177
32,388	35,327	40,703	44,038	47,373	50,156
4.40	4.61	4.95	5.19	5.44	5.65
405	429	452	476	500	521
19,350	18,855	19,628	20,852	21,093	21,831
2.9	2.8	3.1	2.8	2.8	2.5
14	15	16.4	15	15	14
38	40	40	41	41	41
735,515	766,109	822,583	848,989	870,978	887,712
29%	29%	27%	27%	29%	31%
\$4.82	\$4.69	\$4.53	\$4.34	\$5.21	\$5.18
\$9.71	\$9.77	\$9.72	\$9.90	\$11.15	\$11.01
\$14.74	\$14.68	\$14.63	\$14.63	\$16.09	\$15.72
\$1.34	\$1.41	\$1.41	\$1.44	\$1.51	\$1.48
\$0.72	\$0.71	\$0.68	\$0.75	\$0.72	\$0.73
\$1,044	\$1,046	\$1,089	\$1,067	\$1,152	\$1,133
\$4,997	\$5,749	\$7,564	\$3,674	\$4,975	\$6,074
\$16,760	\$11,888	\$11,704	\$10,701	\$7,446	\$6,873
\$7,087	\$7,207	\$7,236	\$7,194	\$7,235	\$7,261
\$1,500	\$1,518	\$1,527	\$1,505	\$1,505	\$1,538
\$3,160	\$3,243	\$3,231	\$3,216	\$3,239	\$3,232
\$1,474	\$1,498	\$1,532	\$1,526	\$1,521	\$1,509
0.47	0.45	0.47	0.44	0.49	0.44
\$76,317	\$70,992	\$89,072	\$81,373	\$106,797	\$71,617
\$97,966	\$91,061	\$110,110	\$97,829	\$123,766	\$79,693
\$31,829	\$22,630	\$34,271	\$26,717	\$46,669	\$12,199
4.5%	3.0%	4.4%	1.9%	4.9%	-1.1%
4.9%	4.0%	4.8%	3.5%	5.3%	1.4%
2.9%	2.2%	3.3%	2.3%	3.7%	0.8%
\$687,366	\$729,504	\$785,951	\$831,229	\$912,066	\$915,259
\$50,089	\$40,644	\$55,104	\$46,218	\$71,765	\$6,395
0.29	0.30	0.29	0.29	0.28	0.29
\$1,985	\$2,020	\$2,007	\$1,934	\$1,914	\$1,943

Debt to asset ratio has remained stable while debt per cow increased and farm net worth almost doubled. During this time, crop yields have not increased, while purchased grain and concentrate as a percent of milk sales has increased slightly.

Milk Cow Operations and Milk Cow Inventory



As the number of milk cow operations decreases, the average number of milk cows per operation increases as shown by the above chart. There were 5,900 less milk cow operations in 1997 than there were in 1987. The average number of milk cows per operation has increased by 27 cows, or 50 percent over the same period. On January 1, 1998, 35 percent of the total milk cows were in herds with 50-99 head, 51 percent were in herds with over 100 milk cows, and 14 percent were in herds with less than 50 head.

TABLE 7-6. MILK COW OPERATIONS AND MILK COW INVENTORY
by Herd Size, 1987 to 1998

MILK COW OPERATIONS BY HERD SIZE & TOTAL, 1987-1997							MILK COWS ON FARMS, JAN. 1 BY HERD SIZE & TOTAL, 1988-1998						
(Number of Milk Cows in Herd)							(Number of Milk Cows in Herd)						
Year	1-29	30-49	50-99	100-199 ^a	200 plus	Total	Year	1-29	30-49	50-99	100-199 ^a	200 plus	Total
(Number of Operations)							(Thousand Head)						
1987	3,300	4,300	5,000	1,900		14,500	1988	32	171	332	281		816
1988	3,200	3,850	5,300	1,850		14,200	1989	30	144	335	271		780
1989	2,700	3,400	5,400	2,000		13,500	1990	29	121	321	289		760
1990	2,650	3,150	5,300	1,900		13,000	1991	27	116	319	288		750
1991	2,500	2,900	5,000	1,800		12,200	1992	24	111	314	291		740
1992	2,600	2,600	4,400	1,900		11,500	1993	27	97	300	306		730
1993	2,400	2,500	4,200	1,500	400	11,000	1994	22	87	297	189	130	725
1994	2,400	2,200	4,200	1,500	400	10,700	1995	21	92	277	178	142	710
1995	2,100	2,200	4,000	1,300	400	10,000	1996	19	79	259	196	147	700
1996	1,800	2,000	3,700	1,300	400	9,200	1997	18	80	245	196	161	700
1997	1,700	2,000	3,300	1,200	400	8,600	1998	18	80	245	196	161	700

^a100 plus category prior to 1993.

Source: NYASS, New York Agricultural Statistics, 1997-1998.

Prices Paid and Received by New York Dairy Farmers

The prices dairy farmers pay for a given quantity of goods and services has a major influence on farm production costs. The astute manager will keep close watch on unit costs and utilize the most economical goods and services. The table below shows average prices of selected goods and services used on New York dairy farms.

**TABLE 7-7. PRICES PAID AND RECEIVED
BY NEW YORK FARMERS FOR SELECTED ITEMS
Northeast^a, 1987-1998**

Year	Mixed Dairy Feed 16% Protein (\$/ton)	Soybean Meal 44% Protein (\$/cwt)	Fertilizer, Urea 45-46%N (\$/ton)	Fertilizer 10-20-20 (\$/ton)	Seed Corn, Hybrid ^b (\$/80,000) Kernels	Tractor 50- 59PTO ^b (\$)
1987	153	12.00	190	184	64.90	16,650
1988	181	15.65	208	206	64.20	17,150
1989	189	15.88	227	207	71.40	17,350
1990	177	13.25	215	199	69.90	17,950
1991	172	12.90	243	205	70.20	18,650
1992	174	12.70	221	194	71.80	18,850
1993	171	13.35	226	185	72.70	19,200
1994	181	14.10	233	192	73.40	19,700
1995	175 ^c	12.80 ^c	316 ^c	223 ^c	77.10	20,100
1996	226	15.80	328	228	77.70	20,600
1997	216	13.00	287	225	83.50	21,200
1998	199	14.20	221	225	86.90	21,800

New York and New England					Prices Received	
Year	Diesel Fuel (\$/gal)	Gasoline, Unleaded, Bulk Delivery ^d (\$/gal)	Wage Rate All Hired Farm Workers (\$/hr)	Ground Limestone Spread on Field (\$/ton)	Alfalfa Hay Baled ^e (\$/ton)	Corn Grain ^f (\$/bu)
1987	0.77	0.91	4.60	24.30	N/A	2.20
1988	0.81	0.94	5.02	23.30	N/A	2.83
1989	0.83	1.05	5.25	24.30	88.00	2.80
1990	1.08	1.19	5.51	25.30	85.50	2.44
1991	1.00	1.25	6.06	23.10	84.50	2.70
1992	0.91	1.18	6.42	25.70	95.50	2.30
1993	0.90	1.20	6.76	26.60	97.00	2.85
1994	0.85	1.14	6.96	27.10	93.00	2.65
1995	0.85 ^c	1.17 ^c	6.92	22.30 ^c	94.00	3.85
1996	1.02	1.30	7.19	23.30	99.50	2.98
1997	0.96	1.33	7.33	27.60	105.00	2.95
1998	0.81	1.17	7.56	29.80	----	----

SOURCE: NYASS, New York Agricultural Statistics.

USDA, NASS, Agricultural Prices.

^aNortheast region includes New England, New York, Pennsylvania, New Jersey, Maryland, and Delaware.

^bUnited States average.

^cPrices prior to 1995 are annual averages. Beginning 1995, prices refer to April 1.

^dPrices prior to 1993 represent gasoline, regular, bulk delivery.

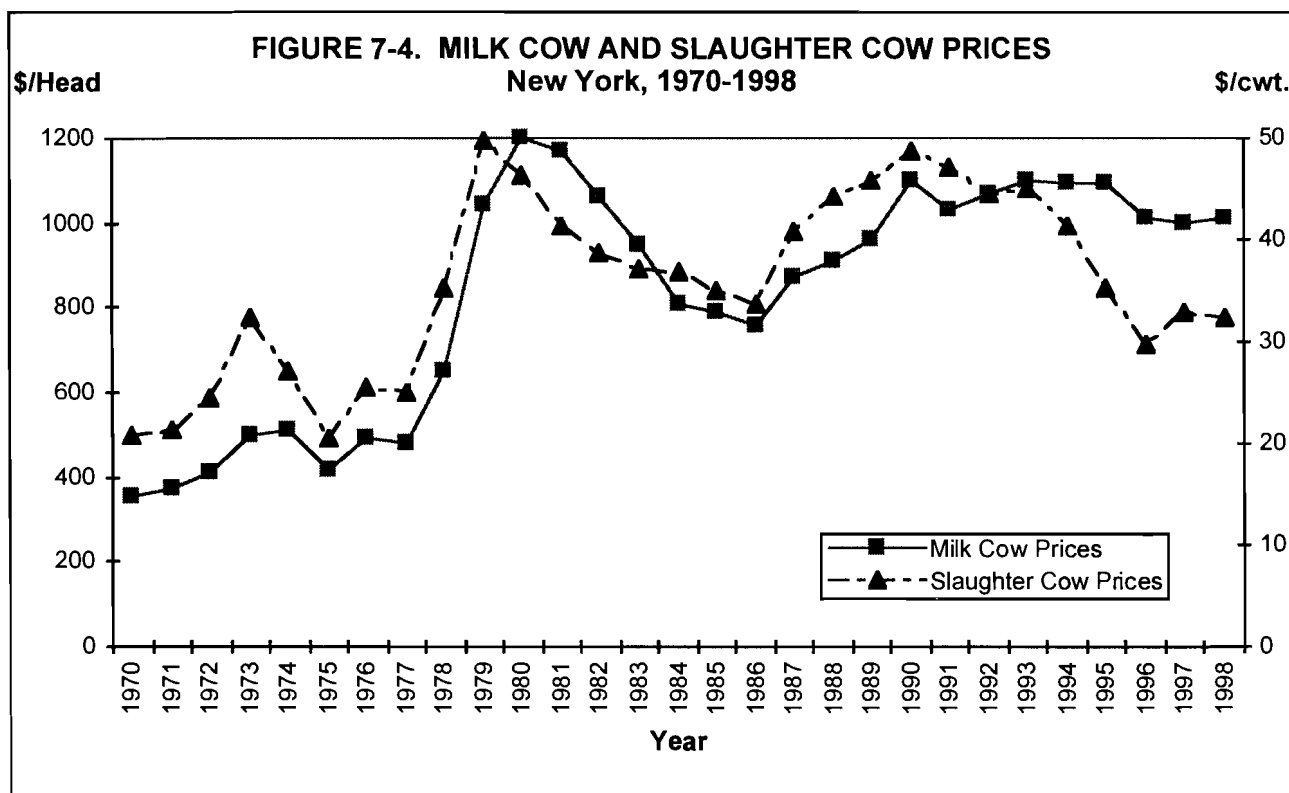
^eMarketing year average, June through May.

^fMarketing year average, October through September.

Milk cow prices remained level for the first part of 1997 then decreased to \$980 in October. In 1998, milk cow prices have increased throughout the year. Slaughter cow prices averaged \$1.02 per hundredweight less than a year earlier. Calf prices averaged \$3.40 per hundredweight higher in 1998 compared to 1997. Beef cattle prices average \$1.42 per hundredweight less than a year earlier.

**TABLE 7-8. PRICES RECEIVED BY NEW YORK FARMERS FOR SELECTED LIVESTOCK
1997 & 1998**

Month	Milk Cows \$/Head		Slaughter Cows \$/Cwt.		Calves \$/Cwt.		Beef Cattle \$/Cwt.	
	1997	1998	1997	1998	1997	1998	1997	1998
January	\$ 1,000	\$ 980	\$30.90	\$30.40	\$42.10	\$47.50	\$32.30	\$31.60
February	---	---	32.10	33.60	49.00	58.00	33.30	34.60
March	---	---	34.50	33.50	41.00	51.50	36.20	35.10
April	1,000	1,000	35.60	33.80	46.90	56.70	37.20	35.70
May	---	---	35.70	34.80	62.20	64.10	37.70	36.60
June	---	---	35.80	35.20	58.50	53.00	37.70	36.60
July	1,000	1,020	35.40	32.50	38.80	47.40	37.10	33.70
August	---	---	32.70	31.80	47.50	50.30	35.80	33.20
September	---	---	31.30	29.90	49.70	44.30	33.30	31.40
October	980	1,050	30.80	29.10	53.10	50.00	32.80	30.70
November	---	---	29.20	---	43.20	---	30.80	---
December	---	---	30.40	---	47.50	---	31.60	---



SOURCE: New York Agricultural Statistics.

TABLE 7-9. MILK PRODUCTION CASH COSTS AND RETURNS BY REGION
\$ Per Hundredweight, 1997

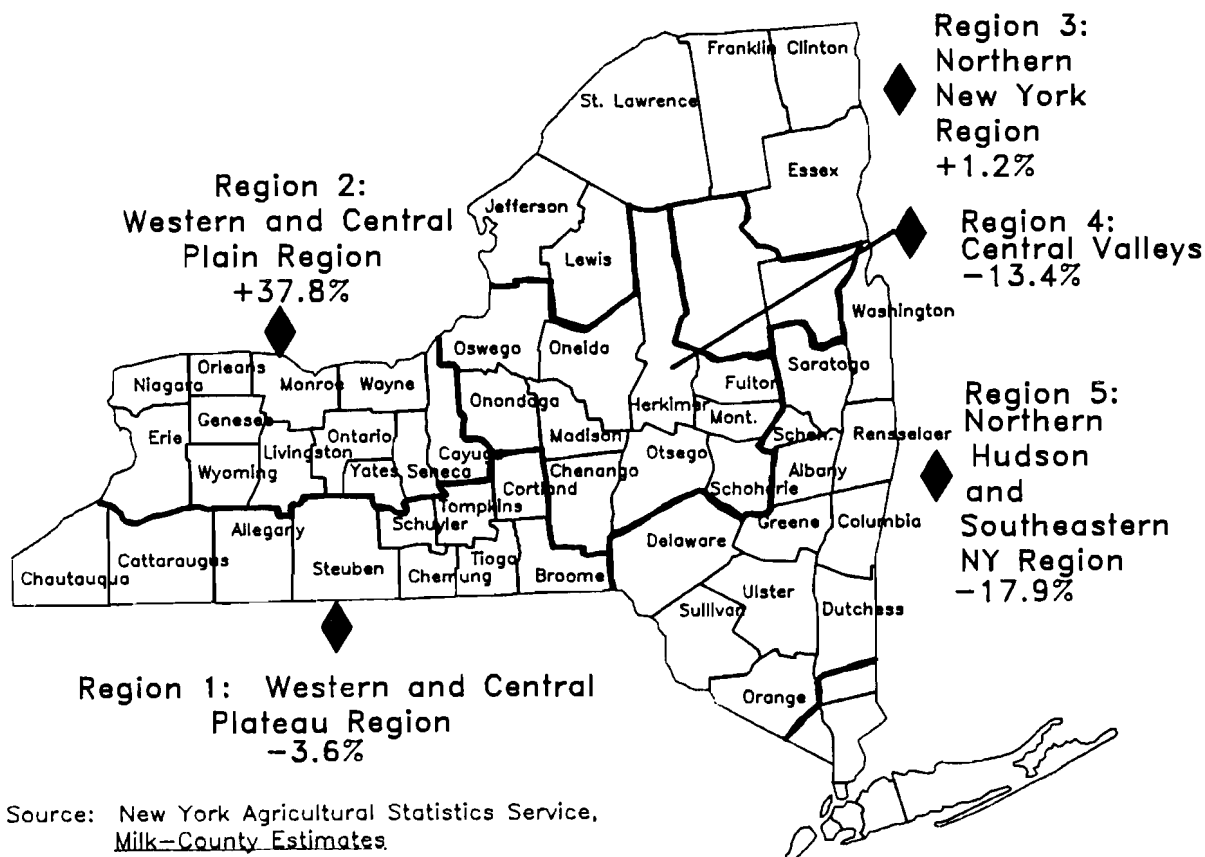
Item	Northeast	Southeast	Upper Midwest	Corn Belt	Southern Plains	Pacific
Gross value of production:						
Milk	\$13.74	\$15.87	\$13.32	\$13.46	\$13.70	\$12.77
Cattle	0.75	0.95	0.97	1.06	0.85	0.63
Other income	0.46	0.52	0.75	0.50	0.38	0.56
Total, gross value of production	14.95	17.34	15.04	15.02	14.93	13.96
Cash expenses:						
Feed						
Concentrates	4.04	5.90	4.19	4.49	5.86	3.14
By-products	0.04	0.45	0.11	0.26	0.19	0.43
Liquid whey	0.14	0.05	0.17	0.25	0.01	0.05
Hay	1.61	0.67	1.36	2.07	2.28	2.83
Silage	2.16	0.96	1.98	1.71	0.12	1.15
Pasture and other forage	0.03	0.07	0.12	0.13	0.08	0.20
Total feed costs	8.02	8.10	7.93	8.91	8.54	7.80
Other						
Hauling	0.75	0.97	0.28	0.43	0.59	0.41
Artificial insemination	0.21	0.12	0.17	0.12	0.05	0.12
Veterinary and medicine	0.49	0.50	0.47	0.40	0.20	0.21
Bedding and litter	0.39	0.01	0.34	0.32	0.00	0.06
Marketing	0.49	0.54	0.28	0.30	0.27	0.47
Custom services and supplies	0.60	0.66	0.37	0.38	0.31	0.43
Fuel, lube, and electricity	0.69	0.34	0.61	0.56	0.48	0.29
Machinery and building repairs	0.99	0.64	1.09	0.96	0.45	0.31
Hired labor	0.58	1.31	0.53	0.57	0.76	0.54
DHIA fees	0.11	0.06	0.08	0.07	0.05	0.07
Dairy assessment	0.00	0.00	0.00	0.00	0.00	0.00
Total, variable cash expenses	13.32	13.25	12.15	13.02	11.70	10.71
General farm overhead	0.60	0.72	0.73	0.64	0.51	0.38
Taxes and insurance	0.43	0.35	0.42	0.29	0.16	0.13
Interest	0.76	0.59	1.13	0.69	0.59	0.62
Total, fixed cash expenses	1.79	1.66	2.28	1.62	1.26	1.13
Total, cash expenses	15.11	14.91	14.43	14.64	12.96	11.84
Gross value of production less cash exp.	-0.16	2.43	0.61	0.38	1.97	2.12
Economic (full ownership) costs:						
Variable cash expenses	13.32	13.25	12.15	13.02	11.70	10.71
General farm overhead	0.60	0.72	0.73	0.64	0.51	0.38
Taxes and insurance	0.43	0.35	0.42	0.29	0.16	0.13
Capital replacement	2.14	2.59	2.50	2.23	2.13	1.48
Operating capital	0.12	0.12	0.11	0.12	0.10	0.09
Other nonland capital	0.94	1.68	1.12	0.98	0.94	0.69
Land	0.00	0.00	0.00	0.01	0.00	0.01
Unpaid labor	2.44	0.31	2.04	2.84	0.88	0.44
Total, economic costs	19.99	19.02	19.07	20.13	16.42	13.93
Residual returns to management and risk	-5.04	-1.68	-4.03	-5.11	-1.49	0.03
Source: USDA, ERS, Costs of Production						

TABLE 7-10. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
253 New York Dairy Farms, 1997

Item	Western & Central Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	No. Hudson & South- eastern New York
Number of farms	46	84	26	17	80
ACCRUAL EXPENSES					
Hired labor	\$47,219	\$154,276	\$33,931	\$29,850	\$38,954
Feed	113,259	337,347	84,480	94,297	109,148
Machinery	37,893	78,305	26,777	23,409	34,797
Livestock	48,475	170,605	38,495	37,800	58,760
Crops	19,093	50,152	18,128	14,094	22,356
Real estate	19,837	41,899	15,983	22,756	17,250
Other	44,937	109,078	29,277	34,133	36,700
Total Operating Expenses	330,713	\$941,662	\$247,071	\$256,339	\$317,965
Expansion livestock	5,282	23,870	1,762	1,141	4,433
Machinery depreciation	20,091	37,407	14,632	11,686	13,978
Building depreciation	13,538	24,712	6,575	7,209	8,250
Total Accrual Expenses	\$369,624	\$1,027,651	\$270,040	\$276,375	\$344,626
ACCRUAL RECEIPTS					
Milk sales	\$342,174	\$970,987	\$274,760	\$281,934	\$330,956
Livestock	28,162	83,502	21,281	9,644	25,825
Crops	1,716	17,136	6,116	4,220	1,597
All other	9,915	20,598	7,048	5,975	10,009
Total Accrual Receipts	\$381,967	\$1,092,223	\$309,205	\$301,773	\$368,387
PROFITABILITY ANALYSIS					
Net farm income (w/o appreciation)	\$12,343	\$64,572	\$39,165	\$25,398	\$23,761
Net farm income (w/ appreciation)	\$25,384	\$79,883	\$43,383	\$27,916	\$30,569
Labor & management income	\$-20,289	\$11,979	\$10,804	\$3,188	\$-12,125
Number of operators	1.46	1.77	1.40	1.37	1.56
Labor & mgmt. income/operator	\$-13,897	\$6,768	\$7,717	\$2,327	\$-7,772
BUSINESS FACTORS					
Worker equivalent	4.01	7.74	3.14	2.97	3.75
Number of cows	135	329	107	105	121
Number of heifers	110	228	79	72	94
Acres of hay crops ^a	215	257	190	181	199
Acres of corn silage ^a	98	264	86	56	120
Total tillable acres	403	658	338	283	367
Pounds of milk sold	2,544,862	7,201,685	2,040,011	2,068,523	2,303,735
Pounds of milk sold/cow	18,866	21,871	18,990	19,645	18,980
Tons hay crop dry matter/acre	2.4	3.0	2.5	2.5	1.9
Tons corn silage/acre	16.2	17.4	16.4	15.4	12.9
Cows/worker	34	43	34	35	32
Pounds of milk sold/worker	634,629	930,450	649,685	696,472	614,329
% grain & conc. of milk receipts	33%	34%	30%	33%	31%
Feed & crop expense/cwt. milk	\$5.20	\$5.38	\$5.03	\$5.24	\$5.70
Fertilizer & lime/crop acre	\$16.80	\$32.01	\$22.35	\$20.94	\$29.36
Machinery cost/tillable acre	\$163	\$201	\$147	\$147	\$154

* Average of all farms in the region, not only those producing the crop.

**FIGURE 7-5. PERCENT INCREASE IN MILK PRODUCTION
Five Regions in New York, 1987-1997**



**TABLE 7-11. MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK
Five Regions of New York, 1997**

Item	Region ^a				
	1	2	3	4	5
Milk Production^b	(million pounds)				
1987	2,151.3	2,351.1	2,170.7	3,043.9	1,699.9
1997	2,073.9	3,240.6	2,196.9	2,635.5	1,395.6
Percent change	-3.6%	+37.8%	+1.2%	-13.4%	-17.9%
Cost of Producing Milk	(\$ per hundredweight milk)				
Operating cost	\$11.64	\$11.72	\$10.51	\$11.49	\$12.37
Total cost	15.76	14.04	14.60	14.98	16.19
Average price received	13.45	13.48	13.47	13.63	14.37
Return per cwt. to operator labor, management & capital	\$0.30	\$0.82	\$1.75	\$1.15	\$0.79

^aSee Figure 7-5 for region descriptions.

^bSource: New York Agricultural Statistics Service, Milk-County Estimates.

Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 253 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. Each column of the chart is independent of the others. The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

TABLE 7-12. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
253 New York Dairy Farms, 1997

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
16.3	749	16,977,721	24,322	4.1	22	57	1,169,242
8.0	318	6,801,234	22,395	3.4	19	46	929,873
5.8	214	4,351,063	21,446	3.0	18	41	819,044
4.5	155	3,051,237	20,524	2.6	17	37	731,958
3.9	128	2,361,619	19,512	2.4	16	34	659,774
3.4	106	1,896,078	18,496	2.2	15	32	597,572
2.9	85	1,512,359	17,718	2.0	14	30	532,282
2.4	69	1,177,556	16,584	1.8	13	28	486,658
1.9	55	940,983	15,088	1.5	11	24	413,316
1.4	40	601,704	12,762	1.0	8	19	288,154
Cost Control							
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk		
\$435	20%	\$226	\$675	\$576	\$3.68		
600	26	296	813	774	4.51		
673	28	336	903	874	4.82		
745	29	393	975	943	5.10		
820	32	429	1,021	1,016	5.37		
883	33	465	1,079	1,092	5.61		
939	35	503	1,172	1,146	5.85		
987	37	550	1,254	1,202	6.09		
1,059	39	613	1,350	1,279	6.47		
1,183	45	741	1,553	1,411	7.41		

The next section of the Farm Business Chart provides for comparative analysis of the value and costs of dairy production.

The profitability section shows the variation in farm income by decile and enables a dairy farmer to determine where he or she ranks by using several measures of farm profitability. Remember that each column is independently established and the farms making up the top decile in the first column will not necessarily be on the top of any other column. The dairy farmer who ranks at or near the top of most of these columns is in a very enviable position.

**TABLE 7-12.(CONTINUED) FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
253 New York Dairy Farms, 1997**

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Oper. Cost Milk Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cow	Total Cost Production Per Cwt.
\$3,381	\$15.09	\$1,319	\$8.30	\$2,127	\$12.68
3,052	14.56	1,690	10.02	2,552	13.72
2,941	14.20	1,870	10.58	2,726	14.27
2,836	13.86	2,079	11.05	2,847	14.84
2,719	13.66	2,158	11.46	2,947	15.45
2,553	13.53	2,279	11.81	3,056	16.12
2,428	13.41	2,403	12.24	3,151	16.61
2,271	13.25	2,525	12.81	3,285	17.46
2,030	13.01	2,682	13.59	3,486	18.63
1,686	12.54	3,039	15.55	3,820	22.37
Profitability					
Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income
Total	Per Cow	As % of Total Accrual Receipts	Total	Per Cow	Per Farm Per Operator
\$258,543	\$806	25.1%	\$270,808	\$847	\$160,233
77,869	516	17.3	100,963	573	37,347
46,999	392	13.3	63,703	461	15,083
34,998	326	11.1	45,449	396	5,143
27,155	261	8.6	34,877	320	-1,948
19,291	165	5.8	24,515	239	-10,582
8,889	86	3.0	14,345	147	-20,185
-2,819	-28	-1.1	4,254	40	-31,873
-19,342	-181	-6.9	-11,524	-118	-52,868
-74,027	-473	-22.2	-67,379	-442	-114,768

Financial Analysis Chart

The farm financial analysis chart is designed just like the farm business chart on pages 7-14 and 7-15 and may be used to measure the financial health of the farm business.

TABLE 7-13. FINANCIAL ANALYSIS CHART
253 New York Dairy Farms, 1997

Liquidity (repayment)					
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	
\$66	\$720	2.32	3%	\$218	
209	565	1.40	8	910	
297	500	1.18	11	1,452	
363	442	1.01	13	1,913	
410	379	0.89	16	2,291	

445	318	0.76	18	2,675	
496	258	0.62	19	3,031	
565	197	0.44	22	3,349	
620	87	0.17	25	3,818	
770	-210	-0.60	38	4,870	
Solvency				Profitability	
Leverage Ratio*	Percent Equity	Debt/Asset Ratio		Percent Rate of Return with appreciation on:	
		Current & Intermediate	Long Term	Equity	Investment**
-3.88	97%	0.04	0.00	15%	10%
0.10	89	0.13	0.00	7	7
0.23	79	0.21	0.08	4	5
0.37	72	0.29	0.21	1	4
0.51	65	0.36	0.31	-1	2

0.71	57	0.41	0.41	-3	1
0.90	52	0.47	0.49	-5	-1
1.12	46	0.56	0.59	-8	-3
1.55	38	0.68	0.71	-14	-5
7.09	16	1.01	1.14	-241	-11
Efficiency (Capital)					
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation	
.75	\$1,142	\$513	\$3,881	\$144,340	
.62	1,845	749	4,914	49,494	
.55	2,138	900	5,538	31,463	
.52	2,395	1,041	6,043	19,820	
.48	2,708	1,169	6,505	10,964	

.44	3,158	1,319	6,937	2,421	
.40	3,544	1,484	7,378	-6,589	
.35	3,888	1,704	7,957	-22,343	
.30	4,476	2,033	9,059	-48,040	
.22	7,015	2,778	11,938	-157,818	
*Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.					
**Return on all farm capital (no deduction for interest paid) divided by total farm assets.					

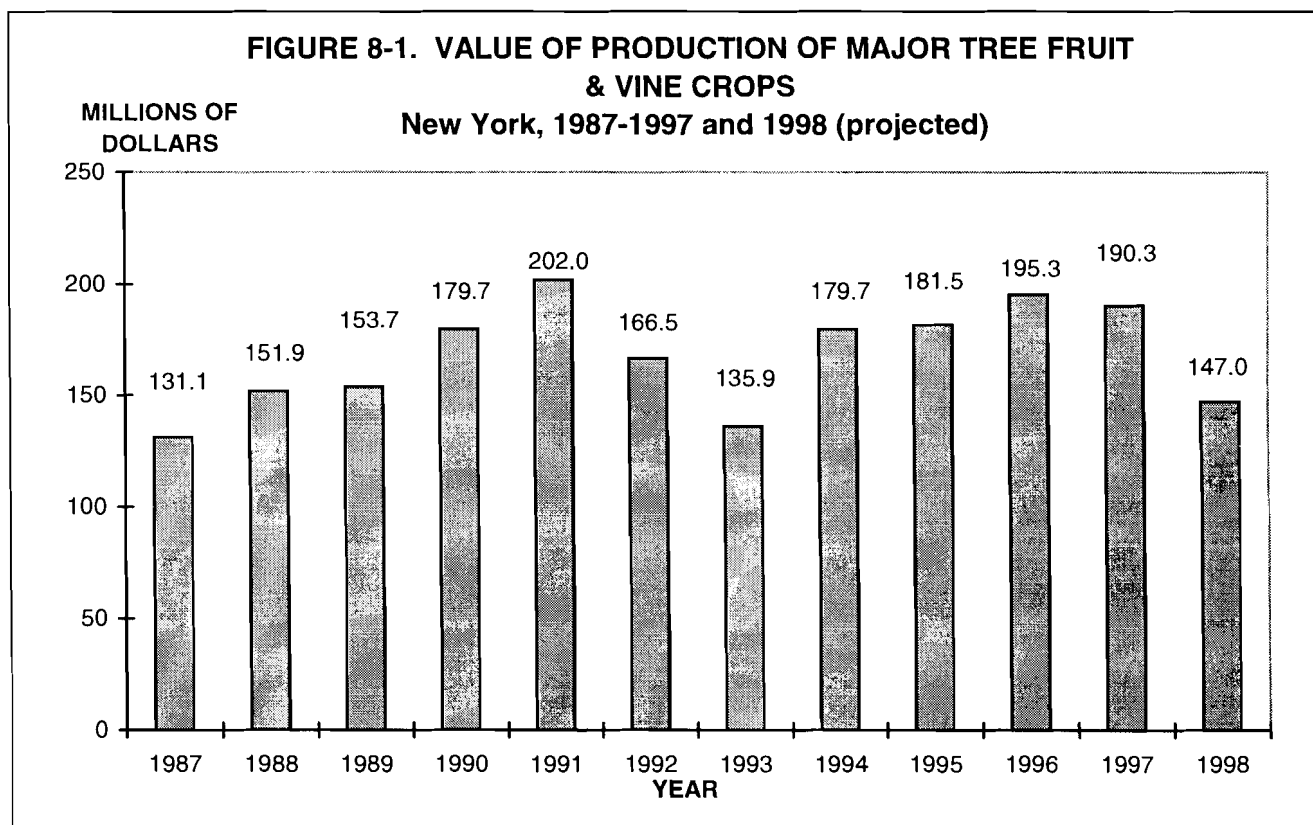
Chapter 8. Fruit

Gerald B. White, Professor

The total production of the 6 tree and vine crops which are important to New York's agricultural economy was projected to decrease by 8 per cent nationally. The national production of apples and tart cherries were forecast to increase compared with last year's production, while decreased production was indicated for grapes, pears, peaches, and sweet cherries. The national production of apples was forecast at 265.6 million bushels, up 7 percent from 1997. Grape production was expected to total 6,002 thousand tons, a decrease of 18 percent from last year's record crop, but still a normal sized crop.

In New York, apple production is indicated to be 24.0 million bushels, down 10 percent from last year; Indicated production is 3 percent below the average production of the last 5 years. However, a severe storm, which hit the Lake Ontario region on Labor Day, resulted in damaged fruit which will result in perhaps 2.1 million bushels of non-utilized apples. Grape production of 120 thousand tons was estimated, 14 percent below last year and the shortest crop since 1993. Total production of the six major fruit and vine crops of 648 thousand tons is projected for the State, down 10 percent from the previous year. Total production is the lowest since the 582 thousand tons realized in 1993.

The utilized value of the major fruit tree and vine crops in New York for the last ten years and the projected value for 1998 is shown below. With the marketable quantity of apples from western New York sharply reduced from storm damage and spring frost and the state's grape crop also reduced by spring frost damage, the value of the state's major fruit tree and vine crops is projected at \$147.0 million, the lowest since 1993.



Source: New York Agricultural Statistics, 1997-1998.

**TABLE 8-1. COMMERCIAL NONCITRUS FRUIT PRODUCTION
New York and United States**

Fruit	New York				United States			
	1995	1996	1997	1998*	1995	1996	1997	1998*
----- thousand tons -----								
Apples	555	515	560	505	5,294	5,196	5,193	5,577
Grapes	165	189	139	120	5,922	5,454	7,282	6,002
Tart Cherries	16	10	7	5	198	136	144	146
Pears	15	15	9	12	948	821	1,044	918
Peaches	6	6	6	5	1,151	1,058	1,326	1,210
Sweet Cherries	1	1	1	1	166	154	223	193
Total New York's Major Fruit Crops	758	736	722	648	13,679	12,819	15,212	14,046

*indicated

**TABLE 8-2. AVERAGE FARM PRICES OF NONCITRUS FRUITS
New York and United States**

Fruit	New York				United States			
	1994	1995	1996	1997	1994	1995	1996	1997
----- dollars per ton -----								
Apples								
Fresh	360	374	354	352	372	480	416	444
Processed	135	141	190	166	114	159	171	129
All Sales*	236	242	270	252	258	340	318	306
Grapes	213	228	238	270	321	346	428	420
Tart Cherries	244	112	288	346	320	118	322	312
Pears	303	372	383	384	223	272	376	276
Peaches	502	414	696	922	266	370	384	358
Sweet Cherries	850	960	1,420	1,720	1,040	1,260	1,470	1,250

**TABLE 8-3. VALUE OF UTILIZED PRODUCTION, NONCITRUS FRUITS
New York and United States**

Fruit	New York				United States			
	1994	1995	1996	1997	1994	1995	1996	1997
----- million dollars -----								
Apples								
Fresh	88.2	89.8	88.5	91.5	1,184	1,404	1,291	1,293
Processed	41.5	44.7	50.4	49.8	283	361	353	290
All Sales*	129.7	134.5	138.9	141.3	1,467	1,766	1,644	1,583
Grapes	39.8	37.2	43.8	36.9	1,883	2,047	2,371	3,056
Tart Cherries	2.9	1.1	2.0	2.3	48	18	42	44
Pears	4.8	5.4	5.7	3.5	233	258	308	289
Peaches	1.8	2.3	4.0	5.3	315	405	394	451
Sweet Cherries	0.7	1.0	0.9	1.1	201	193	223	275
Total New York's Major Fruit Crops*	179.7	181.5	195.3	190.4	4,147	4,686	4,982	5,698

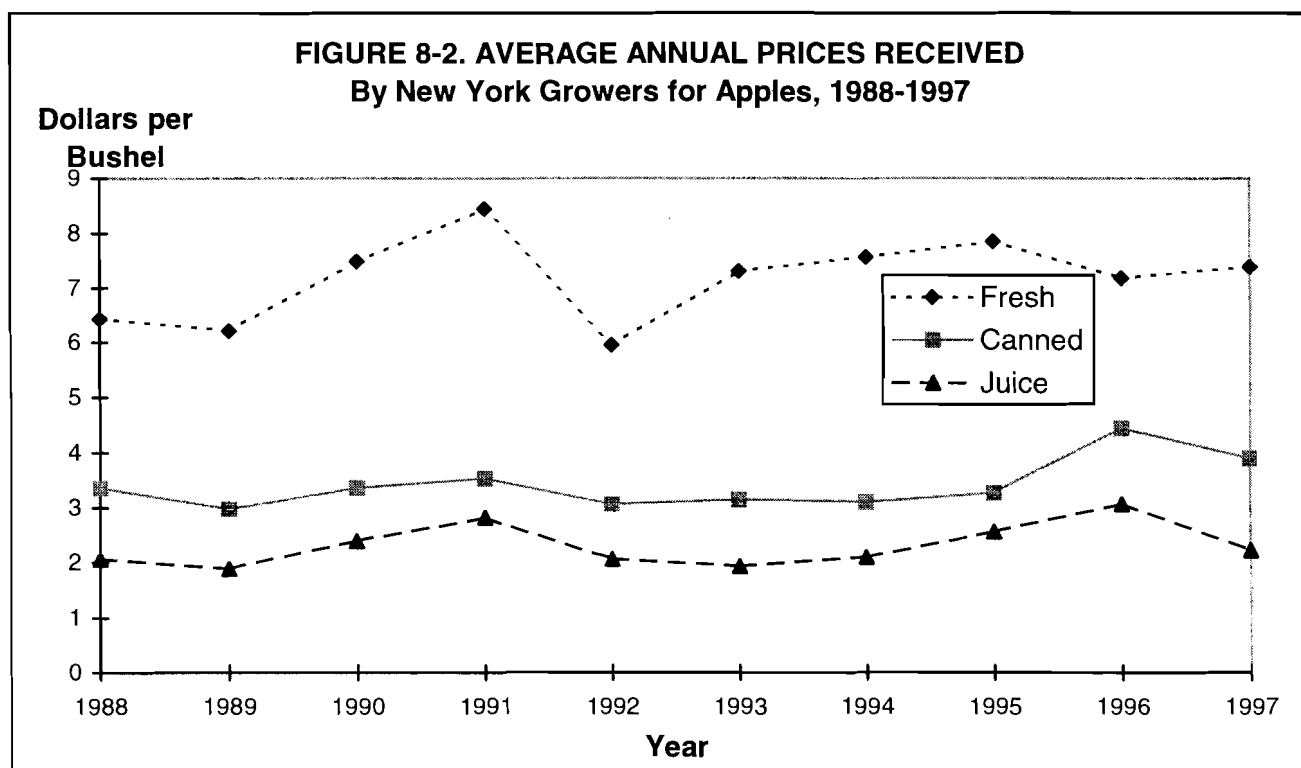
*May not add from total of fresh and processed due to rounding errors.

Source: NASS, USDA, *Noncitrus Fruits and Nuts 1997 Summary*, July 1998.

**TABLE 8-4. APPLE PRODUCTION, UNITED STATES,
1993-1997, Five-Year Average Production, and 1998 Forecast
1,000 42-Pound Bushels**

States/Regions	5-Year Average 1993-1997*	1997*	1998 USDA Estimate**	1998 Compared to USDA 5-Year Average % Change	1998 vs. 1997 % Change
Maine	1,448	1,524	1,119	-22.7	-26.6
New Hampshire	950	952	500	-47.4	-47.5
Vermont	964	952	714	-25.9	-25.0
Massachusetts	1,467	1,512	714	-51.3	-52.8
Rhode Island	129	155	107	-17.0	-30.8
Connecticut	548	595	476	-13.0	-20.0
New York	24,905	26,667	24,048	-3.4	-9.8
New Jersey	1,643	1,548	1,310	-20.3	-15.4
Pennsylvania	11,219	12,738	9,810	-12.6	-23.0
Maryland	838	833	857	2.3	2.9
Virginia	7,714	6,429	7262	-5.9	13.0
West Virginia	3,452	2,738	2,500	-27.6	-8.7
North Carolina	5,676	3,619	4,167	-26.6	15.1
South Carolina	1,262	1310	1,071	-15.1	-18.2
Georgia	657	619	571	-13.0	-7.7
Total East	63,243	62,190	55,226	-12.7	-11.2
Ohio	2,238	1,548	1,905	-14.9	23.1
Indiana	1,443	1,190	1,286	-10.9	8.0
Illinois	1,638	1,762	1,190	-27.3	-32.4
Michigan	23,857	25,000	24,286	1.8	-2.9
Wisconsin	1,436	1,333	1,569	9.3	17.7
Minnesota	530	524	524	-1.1	0.0
Iowa	248	264	202	-18.4	-23.4
Missouri	933	1,000	833	-10.7	-16.7
Kansas	145	238	143	-1.6	-40.0
Kentucky	357	333	405	13.3	21.4
Tennessee	314	238	286	-9.1	20.0
Arkansas	219	214	143	-34.8	-33.3
Total Central	33,359	33,645	32,771	-1.8	-2.6
Total East & Central	96,602	95,836	87,998	-8.9	-8.2
Colorado	1,390	833	1,905	37.0	128.6
New Mexico	152	214	***	***	-100.0
Utah	995	952	1,119	12.4	17.5
Idaho	3,524	2,619	4,524	28.4	72.7
Washington	124,762	119,048	142,857	14.5	20.0
Oregon	3,886	3,810	4,286	10.3	12.5
California	22,343	22,905	21,786	-2.5	-4.9
Arizona	1,338	1,071	1,095	-18.1	2.2
Total West	158,390	151,452	177,571	12.1	17.2
TOTAL U.S.	254,992	247,288	265,569	4.1	7.4

*1997 and 5-year average production from NASS, USDA, Non-Citrus Fruits and Nuts Summary July 1998.
 **NASS, USDA, Crop Production, October 1, 1998.
 ***Forecast discontinued.



SOURCE: New York Agricultural Statistics, 1997-1998.

Over the past decade until 1996, prices for processed apples had been fairly constant, while fresh apple prices have more pronounced fluctuations due to particular supply and demand conditions in a given year. In 1996, prices for canned and juice apples increased dramatically while the price for fresh apple decreased. The value of the 1996 apple crop was a record 138.9 million dollars, buoyed by record prices for processed fruit. In 1997, prices fell to more normal levels, but the value of the crop increased to a record 141.3 million dollars due to the large crop.

In October 1998, the average price for fresh apples in New York State was 17.90 cents per pound, marginally below last year. Prices for all packed apples (100 count and larger) were generally down, while bagged apple prices were up. Exports of fresh apples were running ahead of last year at the beginning of the season, but will fall from the record 1.15 million bushels last year to about .8 million this season—not from lack of demand, but from reduced supplies, especially in western New York. For the entire marketing season, New York's average price for fresh apples will fall to about 17 cents per pound, about three per cent below last year.

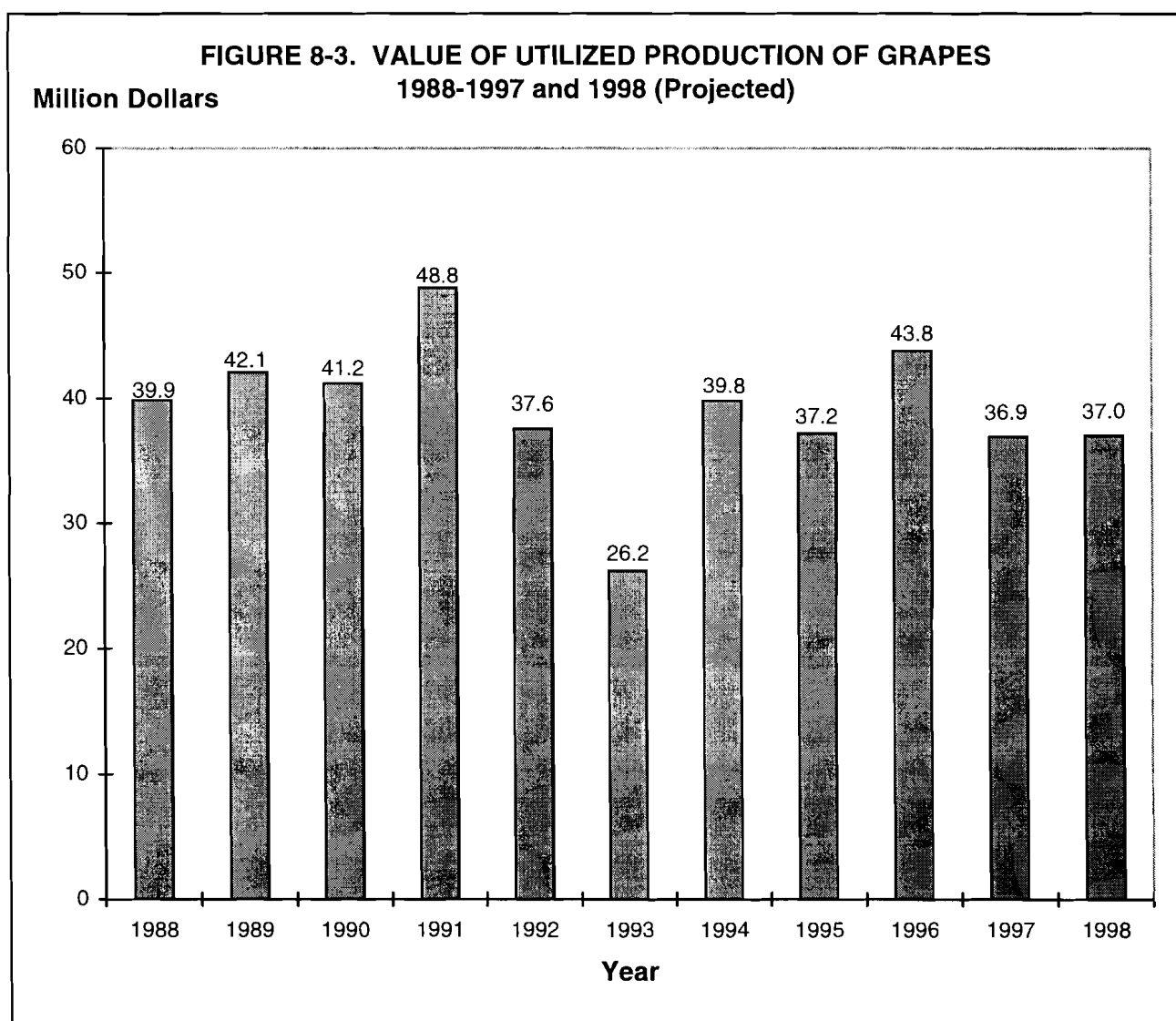
Processing apple prices in 1998 were down for peelers, and especially for juice apples—which were being sold for 3-4 cents per pound, the lowest since 1980. The emergence of China as an apple producing country, as well as a major producer of apple juice concentrate, has severely depressed the market for juice apples for the foreseeable future.

Thus apple growers can expect decreased revenue compared with last year's \$141.3 million record. Low production, and even lower utilization of the '98 crop due to the Labor Day storms will reduce the value of New York's crop to about \$100 million. Eastern New York growers will experience returns similar to last year, while western New York grower's returns will be severely reduced. For individual growers, much will depend upon whether they were in the path of the Labor Day wind storm or one of several hail storms that did major damage. (The assistance of Alison DeMarree, Area Specialist, Cornell Cooperative Extension, is acknowledged for this section of the handbook.)

Grapes

Following the record year of 1991, with a large crop, high prices, and excellent quality, the value of the state's grape crop decreased. In 1993, an extremely short crop, as well as low prices, led to an utilized value of only \$26.2 million. Production rebounded in 1994 with a large crop; however the overall utilized value was held back by low prices for juice grapes. In 1996, another large crop, increased prices for juice grapes, and strong prices for vinifera grapes led to a crop value of \$43.8 million. In 1997, a short crop of only 139 thousand tons led to a crop value of only 36.9 million.

Prospects for the utilized value of the State's 1998 crop are for a similar crop value of \$37 million. Indicated production was 120 thousand tons, down 14 percent from 1996. The average price received for the 1997 crop will probably increase enough to offset the lower production. Even though production was well below average, prices were strong, reflecting increased demand for both juice and wine grapes and limited local supply.

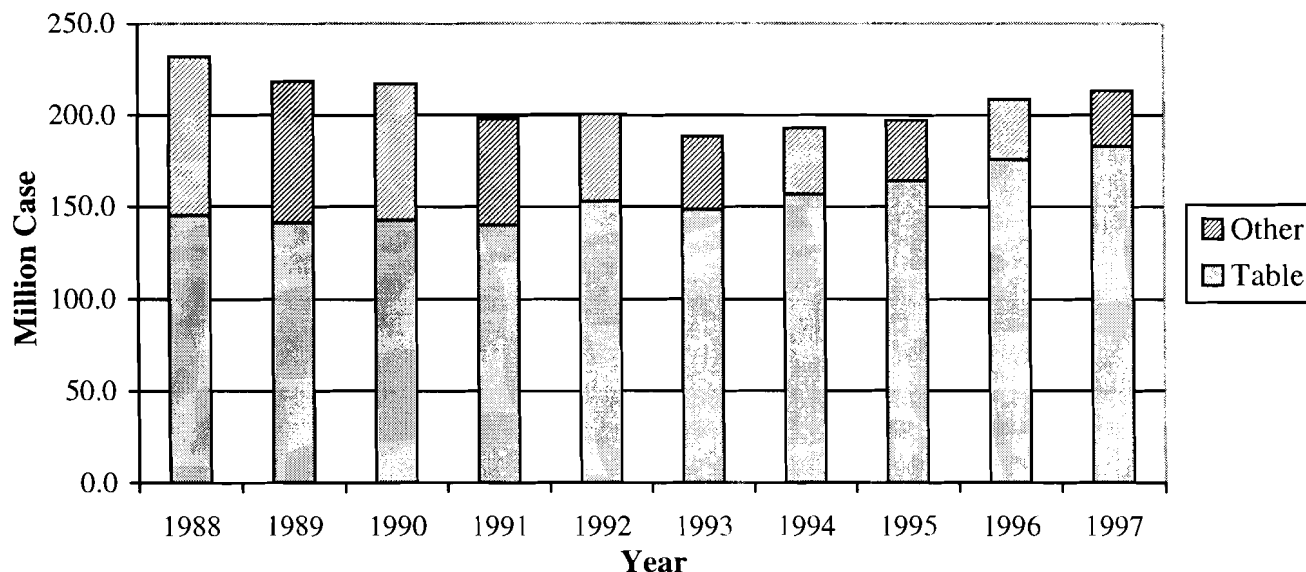


Source: New York Agricultural Statistics, 1997-1998.

Total wine consumption in 1997 increased 2.3 percent. The increase in consumption was driven by the fourth consecutive strong gain in the table wine category (+4.1%). Favorable publicity given to research showing positive health benefits from regular, moderate wine consumption have undoubtedly caused increased consumption.

This trend bodes well for the growing small premium winery sector of New York.

**Table 1. Wine Consumption, US Market
1988-1997**



Source: Adams Wine Handbook, 1998.

Concords are the predominant variety grown and processed in New York. There were 96,600 tons of Concords from New York processed in 1997 (see page 8-7). Over the past five years, Concords have comprised 73 percent of total tonnage utilized. The second leading variety is Niagara with 8.3 percent of tonnage followed by Catawba with 5.3 percent.

The average price for Aurora over the last five years has been flat to declining. The prices of other major French American varieties, however, have been increasing. Native American varieties used for juice (i.e. Concord and Niagara) are in a cycle of increasing prices, while American varieties used primarily in wine are experiencing flat to declining prices.

Vitis Vinifera prices are heavily influenced by the price for Reisling and Chardonnay, which are harvested in larger quantities than other *vinifera* varieties. Most Reisling and Chardonnay sold in the \$1,000 - 1,250 per ton range in 1997, while red *vinifera* generally brought \$1,200 - 1,600 per ton. Hence, the average *vinifera* price in 1997 was \$1,240, a 10 percent increase over '96 prices.

**TABLE 8-5. GRAPES: NEW YORK GROWN
Received By Wineries and Processing Plants, 1993-1997**

Variety	1993	1994	1995	1996	1997	5-Year Avg.
----- tons -----						
Concord	82,914	136,000	111,000	139,000	96,600	113,103
Niagara	9,623	15,300	15,600	10,700	12,800	12,805
Catawba	6,636	10,116	8,700	7,900	7,335	8,137
Elvira	3,533	4,826	4,600	5,100	4,110	4,434
Delaware	2,407	2,316	2,350	1,650	1,010	1,947
Dutchess	223	298	250	120	***	***
Ives	***	***	***	***	130	***
Aurora	3,121	6,282	5,250	4,900	3,295	4,570
de Chaunac	1,363	1,126	1,450	910	575	1,085
Baco Noir	824	923	1,300	1,200	670	983
Seyval Blanc	575	678	900	900	600	731
Cayuga White	313	523	740	1,000	630	641
Rougeon	414	735	800	720	585	651
Vitis Vin.(all)	1,115	1,134	3,435	3,700	3,650	2,607
Other varieties	<u>1,939</u>	<u>2,743</u>	<u>2,625</u>	<u>2,200</u>	<u>2,010</u>	<u>2,303</u>
Total, all varieties	115,000	183,000	159,000	180,000	134,000	154,200

SOURCE: New York Agricultural Statistics, 1997-1998.

**TABLE 8-6. GRAPES: PRICES PAID FOR NEW YORK GROWN GRAPES PROCESSED
1993-1997**

Variety	1993	1994	1995	1996	1997	5-Year Avg.
<u>American Varieties</u>						
Catawba	203	205	210	215	220	211
Concord	206	195	205	207*	228*	208*
Delaware	200	205	200	210	230	209
Dutchess	195	200	200	200	***	***
Ives	***	***	***	***	300	***
Elvira	201	210	210	215	215	210
Niagara	208	213	195	220*	233*	214*
<u>French American Hybrid</u>						
Aurora	205	230	220	230	220	221
Baco Noir	252	270	260	280	330	278
Cayuga White	295	290	240	270	335	286
de Chaunac	245	260	250	280	315	270
Rougeon	252	270	270	280	320	278
Seyval Blanc	250	280	280	290	335	287
<u>Vitis Vinifera</u>						
All varieties	1,002	1,000	980	1,130	1,240	1,070
TOTAL	215	207	222	230	258	226

*Preliminary estimates of future payments by cooperatives have been included based upon historical data.

SOURCE: Fruit, 975-2-98, NY Agricultural Statistics Service.

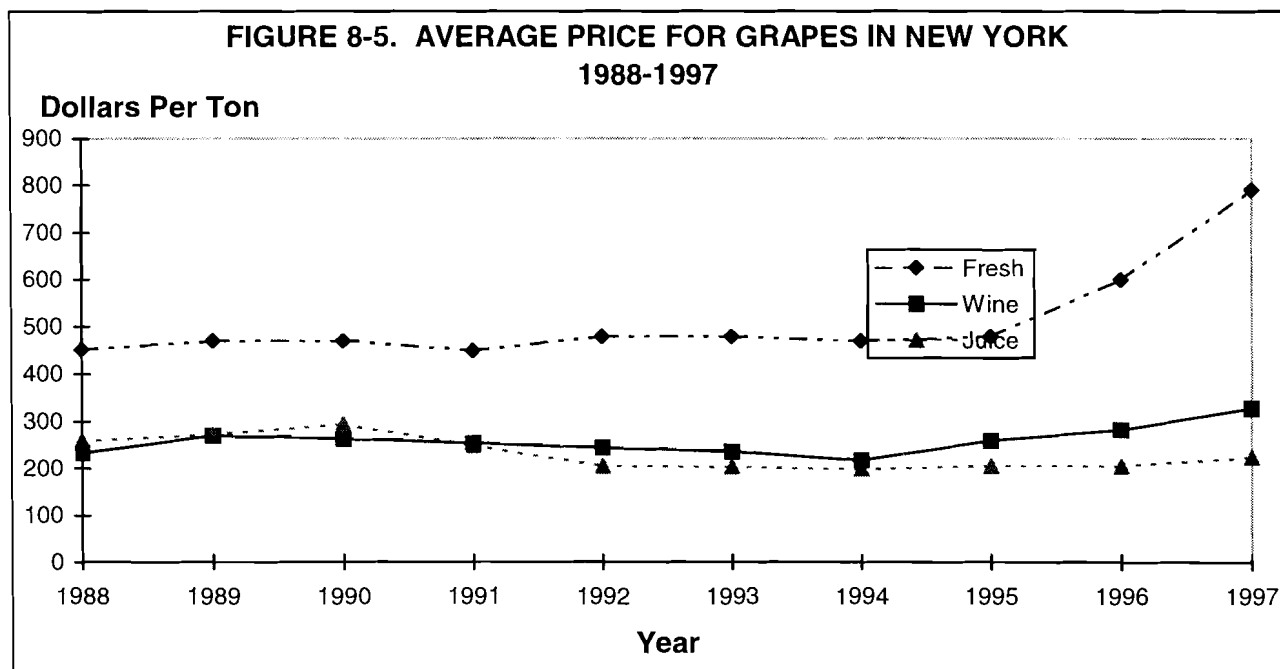
The national crop of Concord and Niagara grapes decreased in 1998 with Washington State's production at about an average level following last year's large crop.

The crop in New York was harvested very early this year. Warm weather in the fall contributed to almost ideal ripening conditions, and allowed most varieties to attain good maturity levels by harvest. Ripening was further facilitated by lighter than normal crop levels. Virtually all grapes were harvested and competition was strong among processors for the available grapes.

National Grape paid a harvest cash advance of \$100 per ton, (the highest in recent years) compared to \$95 per ton last year. Favorable publicity about the health benefits of grape juice have caused a surge in demand for Concord grapes. With a short crop in New York and Pennsylvania due to spring frost damage, cash prices were the strongest in recent years. With strong prices (cash prices in the \$280-\$300 range) grower's cash flow will depend upon whether they experienced frost damage. Some growers with low crop proceeds will be insulated from large losses either by crop insurance and/or previous year's earnings from cooperatives.

Canandaigua Wine Company (the major purchaser of the State's wine grapes) paid slightly higher prices for some varieties. Concord (+10 percent) and red hybrids (+15 percent) advanced the most, while prices for traditional varieties such as Delaware and Dutchess were unchanged at \$200 per ton. Elvira was increased by about four per cent to \$240 per ton.

The small winery sector of the State's grape industry continued its strong performance. Despite the somewhat short crop in New York, it will be a good year for the state's small wineries. Small wineries with quality wines and good marketing skills will experience strong sales growth again this year. In a survey of 13 small wineries this summer, vintners estimated annual growth rates in sales of 18 per cent annually for recent years, and strong growth in sales is likely for the immediate future. (The assistance of Barry Shaffer and Tim Martinson, area Extension Educators in the Lake Erie region and the Finger Lakes region, is acknowledged for this section of the handbook.)



Source: New York Agricultural Statistics, 1997-1998.

OTHER A.R.M.E. EXTENSION BULLETINS

<u>EB No</u>	<u>Title</u>	<u>Author(s)</u>
98-16	Farm Income Tax Management and Reporting, Reference Manual	Smith, S.F. and C.H. Cuykendall
98-15	Determining and Reporting Income Tax Losses and Gains from Storm Damage	Smith, S.F. and C.H. Cuykendall
98-14	Dairy Farm Business Summary, Intensive Grazing Farms, New York, 1997	Conneman, G., C. Crispell, J. Grace, J. Karszes, L. Torbert and L. Putnam
98-13	Dairy Farm Business Summary, Eastern New York Renter Summary, 1997	Knoblauch, W.A. and L.D. Putnam
98-12	Dairy Farm Business Summary, Central Valleys Region, 1997	LaDue, E.L., S.F. Smith, W.A. Knoblauch, D. Bowne, Z. Kurdieh, C. Mentis, C.Z. Radick and L.D. Putnam
98-11	Dairy Farm Business Summary, Northern New York Region, 1997	Milligan, R.A., L.D. Putnam, G. Yarnall, P. Beyer, A. Deming and W. Van Loo
98-10	Dairy Farm Business Summary, Southeastern New York Region, 1997	Knoblauch, W.A., L.D. Putnam, S.E. Hadcock, L.R. Hulle, M. Kiraly and J.J. Walsh
98-09	Dairy Farm Business Summary, Western and Central Plateau Region, 1997	Knoblauch, W.A., L.D. Putnam, C.A. Crispell, J.W. Grace, J.S. Petzen, A.N. Dufresne and G. Albrecht
98-08	Dairy Farm Business Summary, Northern Hudson Region, 1997	Conneman, G.J., L.D. Putnam, C.S. Wickswat, S. Buxton and D.R. Wood
98-07	Dairy Farm Business Summary, Western and Central Plain Region, 1997	Knoblauch, W.A., L.D. Putnam, J. Karszes, C. Mentis, G. Allhusen and J. Hanchar
98-06	Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 1997	Karszes, J., K.A. Knoblauch and L.D. Putnam
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