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New York Economic Handbook 2001



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This publication contains information pertaining to the general economic situation and New York agriculture. It is prepared primarily for use by professional agricultural workers in New York State. USDA reports provide current reference material pertaining to the nation's agricultural situation. Many of these reports are available on the internet at: <http://www.usda.gov/news/calindex.htm>.

Chapter 1. Economic Situation

Steven C. Kyle, Associate Professor

Internet Sources for Economic Information and Commentary

1.	http://www.whitehouse.gov/fsbr/esbr.html/	<i>Economic Statistics Briefing Room</i> Easy access to latest Federal data at national level
2.	http://www.economagic.com/	<i>Economagic: Economic Times Series Page</i> Easy access to figures and graphs of important data from a variety of sources for the present as well as going back decades into the past
3.	http://www.bea.doc.gov/	<i>Bureau of Economic Analysis Home Page</i> Links to: State level AGSP@ figures (AGross State Product@) ASurvey of Current Business@ BEA news releases Overview of U.S. economy Many data sources
4.	http://www.dismal.com/	<i>AThe Dismal Scientist@</i> Forecasts Great site for commentary on current events; latest leading indicators; calendar of
5.	http://www.nber.com/	<i>National Bureau of Economic Research</i> Access to the latest cutting edge academic research Also the home of business cycle analysis
6.	http://www.federalreserve.gov/	<i>Federal Reserve</i> Latest news on monetary policy Functions of Federal Reserve General information on national banking system Links to regional Federal Reserve Bank sites Many articles on national economy at this, plus regional, sites
7.	http://stats.bls.gov/	<i>Bureau of Labor Statistics</i> Latest employment figures
8.	http://www.conference-board.org/	<i>The Conference Board</i> Latest leading indicators -- to reach directly, go to http:// www.tcb-indicators.org/ Consumer confidence index
9.	http://europa.eu.int/	<i>European Union</i> Links to economic information and news for all members of the European Union
10.	http://www.worldbank.org/ http://www.imf.org/	<i>The World Bank and the International Monetary Fund</i> Best single sources for data and information on other countries Includes cross country data banks; news releases; information on the organizations= structures and activities

Chapter 2. Marketing Costs

Kristen S. Park, Extension Support Specialist

Internet Technology

After overcoming hurdles imposed by Y2K, companies' technology departments are now engaged in evaluating the costs and benefits of business-to-business e-commerce as one more way to use technology to eke out efficiencies in the marketing system.

Business-to-business e-commerce, or B2B, is an exciting, hot topic in the global market place. It is made possible by the Internet which can link companies and allows them to exchange information quickly, accurately and, one hopes, confidentially. Yes, computers from different companies have long been able talk between each other without the Internet, however, the Internet is the tool which has allowed a collective market place of companies to exchange information such as business transactions. As a matter of fact, entire Internet businesses have been formed in the past year or two to help facilitate company exchanges. These new, B2B dot-com facilitators have developed their businesses on the Internet and act as information hubs. Potential buyers and sellers within the business community can access these facilitating companies in order to conduct business transactions.

Agribuys.com and Buyproduce.com are just two examples of facilitators operating in the food industry. They have developed websites and software which allow buyers and sellers to procure or sell product across the Internet. The facilitators have designed services to meet the procurement needs of food companies and claim to significantly reduce process order costs. Buyers and suppliers registered with the companies place their requests or quotes on the website in much the same manner as the usual telephone calls or faxes. For example, buyers may send out:

- **Requisitions:** This duplicates the traditional method of purchasing product from an agent who solicits the quotes. A requisition or inquiry goes to a specific supplier, several identified suppliers or to all potential suppliers.
- **New requests for quotes:** Buyer enters the item that he/she is looking to attain (buyer initiates the contact).

Sellers may:

- **Manage quotes:** Sellers prepare quotes in reply to any buyer's Request For Quotes that are sent to them.
- **Post prices:** post prices with immediate updates to one buyer, several preferred buyers or all potential buyers.
- **List products:** A special listing of items to show special prices, inventory levels to selected business partners or to set automatic quotations.
- **Manage shipping:** Create Bills of Lading and track the shipment to the buyer.

Handling these and a number of other procurement activities over the Internet have the potential to reduce errors in placing or receiving orders, eliminate paperwork, and reduce time spent on mundane or non-productive tasks. Therefore, it allows buyers and sellers to increase their reach and enhance their relationships. In addition, the Internet has allowed a greater number of suppliers to transact business with the

given buyers. The access by smaller firms is due to the low barriers to entry. Firms merely need the computer capacity and Internet hook-up to increase their exposure to the buying world.

Internet exchanges such as Agribuys and Buyproduce will need large numbers of buyers and sellers to survive, which means they will have to be able to convince small suppliers as well as large of the benefits of moving to online exchanges. In addition, they will need to keep expanding the services they offer beyond the simple "auction" style of servicing buying and selling exchanges. Services to exchange most of the supply chain information such as tracking real-time transportation from sellers to buyers are necessary. However, enormous start-up costs and a slow down in investor funding have stricken many of these trading exchanges leaving industries to wonder whether the exchanges have been able to achieve any of the touted supply chain cost efficiencies.

The Food Marketing System

Total food and beverage sales grew 5.2 percent between 1998 and 1999 to the amount of \$42.2 billion (Table 2-1). The majority of food sales still comes from the food at home sector which saw total food sales of \$407.3 billion in 1999. Most of the food sales growth, however, occurred in the food away from home sector. Food away from home grew 6.7 percent or \$21.6 billion between 1998 and 1999 to total \$343.7 billion.

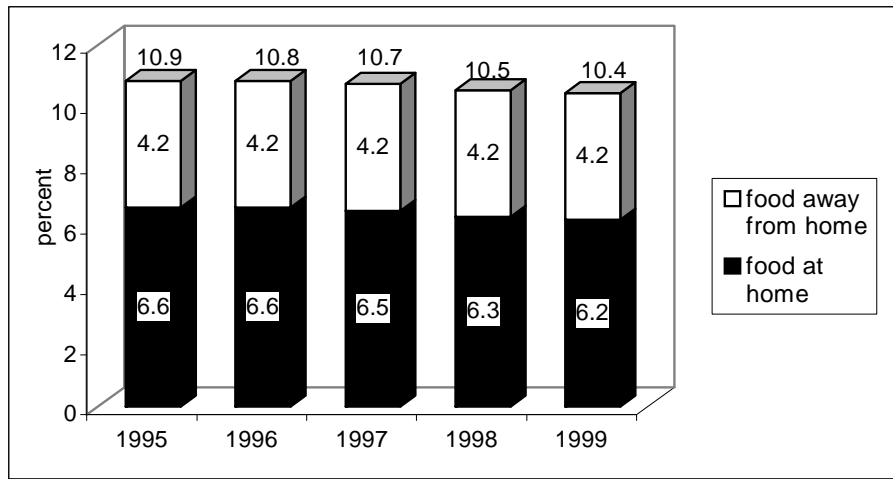
TABLE 2-1. FOOD SALES				
Sector	Sales 1998	Sales 1999	Increase	Growth
	--\$ billion--		--\$ billion--	--% change--
Total food and beverage sales	804.9	847.1	42.2	5.2
Total food sales (excluding alcohol)	714.4	751.0	36.6	5.1
Food at home sales	392.3	407.3	15.0	3.8
Food away from home sales	322.1	343.7	21.6	6.7
Alcoholic beverage sales	90.5	96.1	5.6	6.2

Source: Clauson, Annette. USDA-ERS, 2000.

Food expenditures as a share of disposable personal income dropped to an all time low of 10.4 percent in 1999 (Figure 2-1). A drop in the share of food at home from 6.3 to 6.2 percent accounted for the overall drop in food expenditures, while the share of food away from home as a percent of disposable personal income remained steady at 4.2. The food away from home share has remained at 4.2 percent since 1993.

The drop in food at home share of disposable personal income occurred despite the fact that during the period from August 1999-August 2000, grocery store prices grew at a rate slightly greater than menu prices. According to the Bureau of Labor Statistics, the growth for grocery store prices during this time period was 2.9 percent, compared to 2.4 percent for menu prices. Prior to this, grocery store price growth had remained below menu price growth for the past 3 years.

FIGURE 2-1. FOOD EXPENDITURES AS A SHARE OF DISPOSABLE PERSONAL INCOME

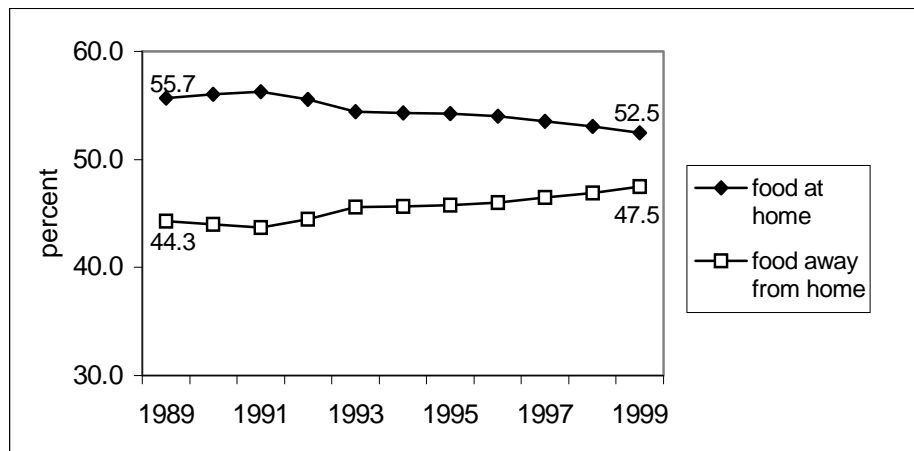


Expenditures include food purchases from grocery stores and other retail outlets, including purchases with food stamps and WIC vouchers and food produced and consumed on farms (valued at farm prices) because the value of these foods is included in personal income. Excludes government-donated foods. Purchases of meals and snacks by families and individuals, and food furnished employees since it is included in personal income. Excludes food paid for by government and business, such as donated foods to schools, meals in prisons and other institutions, and expense-account meals.

Source: Clauson, Annette. USDA-ERS, 2000.

In 1999 away from home consumer food expenditures rose to 47.5 percent of total consumer food expenditures (Figure 2-2). This was an increase from 1998 when food away from home accounted for 46.9 percent of consumer food expenditures. The increase shows no signs of stopping any time soon despite efforts by grocery stores to stem the tide by offering home meal replacement or restaurant-type items to grocery shoppers. A firm economy and falling wholesale food prices will support continued growth in the foodservice sector.

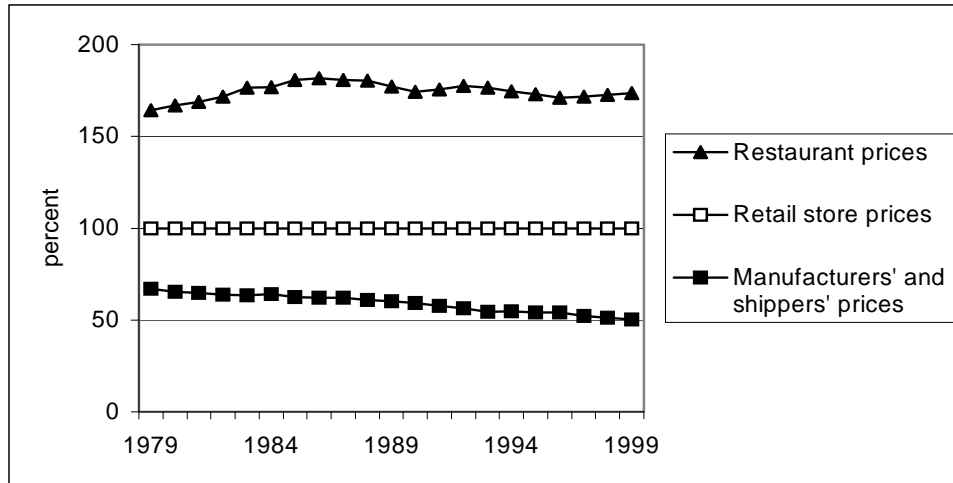
FIGURE 2-2. PERCENT OF TOTAL CONSUMER FOOD EXPENDITURES, AT HOME AND AWAY FROM HOME



Source: Clauson, Annette. USDA-ERS, 2000.

Industry market economies have been shaping the relative prices observed among three different facets of the food sector. Along with farm production value, manufacturers' and shippers' prices have continued to slip when compared with retail prices, showing a downward trend since the 1970s (Figure 2-3). Restaurant prices on the other hand have exhibited a general increase, although somewhat erratic, relative to retail food prices. Strong demand for food away from home and, in general, rising labor costs since the 70s likely contributed to this increase.

FIGURE 2-3. RELATIVE PRICES OF FOOD AT THREE STAGES OF THE SYSTEM



Source: Clauson, Annette, USDA-ERS, 2000.

Supermarkets and other grocery stores provide the vast majority of food purchased for at home consumption. Traditionally, consumers have purchased their food from supermarkets, convenience stores, mom-and-pop grocery stores, and specialty stores. However, these sales are slowly being eroded by encroaching sales from relatively new food outlets. Warehouse clubs, such as Costco and Sam's Club, and mass merchandisers such as Wal-Mart and SuperTarget have been adding food items to their traditional non-food product mix since the late 1980s. In only a decade, these new food formats have established themselves as major competitors, garnering approximately 9.3 percent of total food sales for at home consumption (Table 2-2). Wal-Mart continues an impressive expansion of their supercenter stores, those stores with both mass merchandise and supermarket combined under one roof, and predicts that their food sales will outstrip the number one U.S. supermarket company, Kroger, in 2001.

TABLE 2-2. SALES FOR FOOD AT HOME, BY TYPE OF OUTLET								
Year	Super-Markets	Convenience stores	Other grocery stores	Specialty food stores	Warehouse clubs	Mass merchandisers	Other stores	Other outlets ¹
				--percent--				
1989	62.7	4.8	13.8	5.7	1.2	1.8	6.3	3.7
1990	61.5	4.7	14.8	5.4	1.5	1.8	6.5	3.7
1991	61.5	4.6	14.5	5.1	1.8	2.1	6.6	3.8
1992	62.2	4.6	13.2	4.7	2.2	2.4	6.4	4.1
1993	63.1	4.6	11.5	4.6	2.4	2.8	6.7	4.3
1994	61.2	4.4	13.3	4.5	2.2	3.1	6.9	4.5
1995	60.4	4.1	12.9	4.4	2.1	4.2	7.3	4.6
1996	59.5	3.9	13.3	4.4	2.0	4.7	7.5	4.8
1997	59.0	3.8	13.5	4.4	1.8	5.4	7.5	4.8
1998	57.8	3.8	13.8	4.5	1.5	6.2	7.8	4.6
1999	55.4	3.7	14.6	4.3	1.9	7.4	8.2	4.5

¹Includes: home delivered, mail order, farmers, processors, wholesalers, and other
Source: Clauson, Annette, USDA-ERS, 2000.

Chapter 3. Cooperatives

Bruce L. Anderson, Professor

Brian M. Henehan, 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 1998-99 ¹								
Major Business Activity	Number		Net Volume			Net Income		
	1998	1999	1998	1999	1998	1999	1998	1999
			(\$ billion)				(\$ million)	
Marketing	1,863	1,749	76.7	72.6			1,017.5	940.6
Farm Supply	1,347	1,313	24.5		23.5		578.8	350.5
Related Service	441	404	3.5		3.9		146.0	105.7
TOTAL	3,651	3,466	104.7	100.0			1,742.3	1,396.7

¹ Totals may not add due to rounding.
 Source: Farmer Cooperative Statistics, 1998, Rural Business - Cooperative Service, USDA, RBS Service Report 57, Washington, D.C., November, 1999 and preliminary release from Rural Business - Cooperative Service, USDA, September, 2000.

The number of cooperatives in the United States has continued to decline to a total of 3,466 in 1999, a net decrease of 185 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 increased over the past year. Total net business volume, which excludes intercooperative business, amounted to \$100.0 billion, down over \$4 billion from 1998. A 19.2 percent (or \$4.1 billion) decline in the value of grains and oilseeds marketed and sharp drops in feed and fertilizer prices were among the major causes for the decrease.

Total net income for 1999 was \$1.4 billion, down 19.8 percent from \$1.7 billion in 1998 which is the lowest net income level since 1993. Lower margins for farm supplies and grains were major factors contributing to the decline.

Combined assets in 1999 for all cooperatives reached a record high of \$47.7 billion, a 2.4 percent increase from 1998. Total liabilities of \$27.4 billion increased 3.0 percent from the previous year. Net worth totaled nearly \$20.3 billion, up nearly 1.5 percent.

The estimated number of full-time employees in U.S. cooperatives for 1999 totaled 172,814, down from 173,782 in 1998.

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 1997 and 1999. 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, 1997 and 1999 ¹ .				
Major Business Activity	Number Headquartered in State		Net Volume	
	1997	1999	1997	1999
<u>Marketing:</u>				
Dairy	63	67		
Fruit & Vegetable	9	9	1,171.7	1,595.2
Other Products ²	7	6	285.8	492.4
			353.6	353.5
TOTAL MARKETING	79	82	1,811.1	2,441.1
<u>Supply:</u>				
Crop Protectants				
Feed			36.1	34.5
Fertilizer			133.1	121.3
Petroleum			55.3	54.1
Seed			244.9	182.5
Other Supplies			23.3	17.1
			139.2	152.2
TOTAL SUPPLY	11	11	631.9	561.7
<u>Service</u> ³	6	5	152.6	232.5
TOTAL	96	98	2,595.6	3,235.3

Source: Farmer Cooperative Statistics, 1999, RBS Service Report 59, USDA, RBS, Washington, DC, 2000 preliminary release and Farmer Cooperative Statistics, 1998. RBS Service Report 57, USDA, RBS, Washington, DC, November 1999.

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.

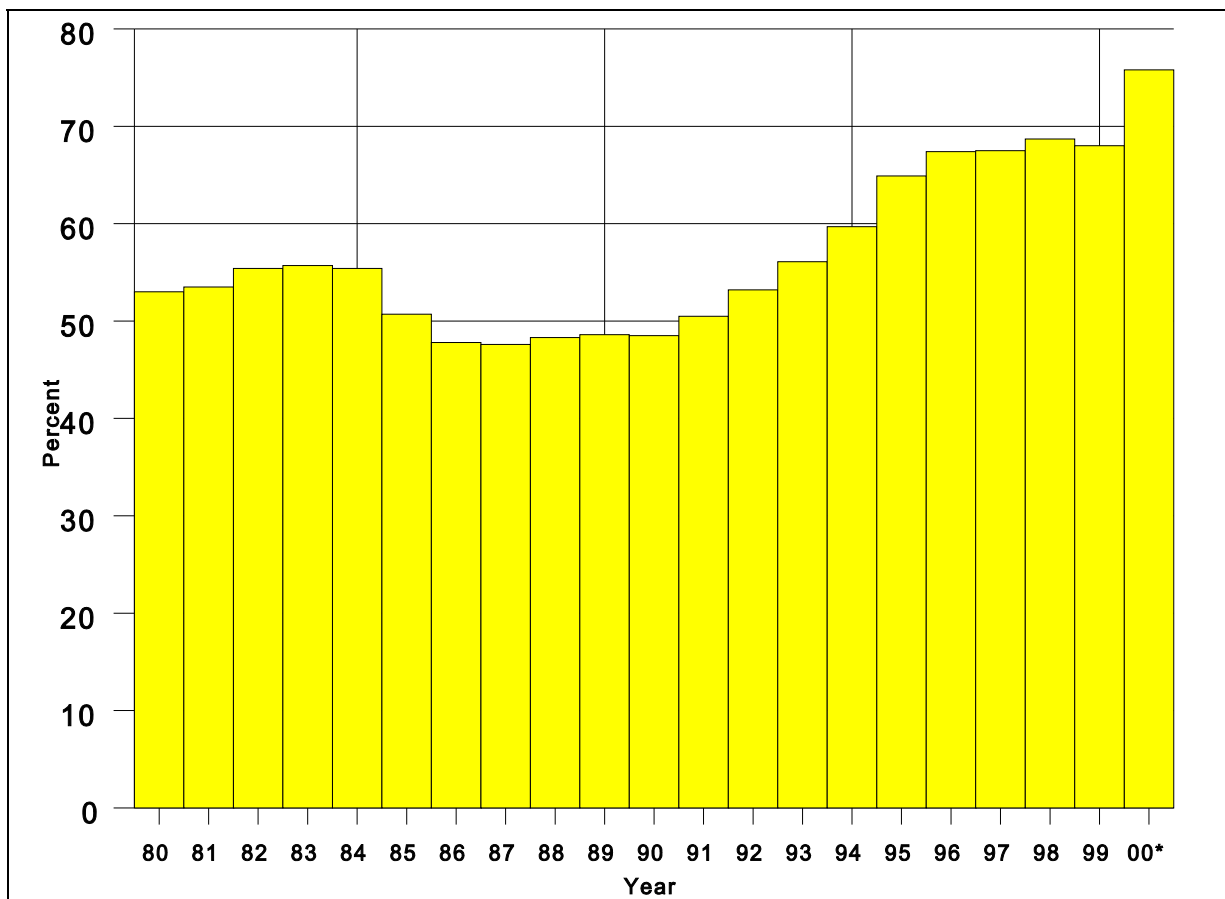
The number of agricultural cooperatives in New York State in 1999 showed a net increase of 2 cooperatives from 1997 with an increase in dairy cooperatives and a decrease in the number of marketing as well as service cooperatives. Total net business volume grew significantly to \$639.7 million, an increase of twenty-five percent from 1997. Supply cooperative volume decreased by \$72 million with lower sales of petroleum, feed, and seed. Marketing volume increased by \$630 million with dairy and fruit & vegetable marketing cooperatives showing significant increases in volume over the two year period. Total volume of other products marketed through cooperatives remained the same. A significant portion of the increased revenues for dairy and fruit and vegetable cooperatives came from the higher value of products sold as well as more volume.

New York Cooperative Performance

The year 2000 was interesting in that there were no significant structural developments among agricultural cooperatives in the Northeast. Over the past few years, we have reported mergers, joint ventures

and consolidations. This past year things were very quiet. We attribute that to the fact that 2000 was a period of integration and adjustment. Cooperatives were striving to make past structural changes work by increasing internal efficiencies and making the necessary changes to reduce operating costs.

As indicated by Figure 3-1, the proportion of milk receipts handled by (the old) Milk Marketing Order 2 dairy cooperatives leveled off at about 67 percent from 1996 to 1999. However, the cooperative share of milk receipts increases significantly to 76 percent for the new consolidated Order 1 over the first 10 months of 2000.



* The year 2000 is based on data for the first ten months of the new consolidated Federal Order 1 (the result of a merger of the old Federal Orders 1, 2, and 4).

Source: Market Administrator's Office, Northeast Federal Milk Marketing Order 1.

Unlike last year when farmers experienced significant fluctuations and periodic strong milk prices, 2000 brought consistently low milk prices. But the financial performance of northeast dairy marketing cooperatives were rather stable in 2000 with only minor ups and downs. One dairy cooperative had good results primarily due to its membership in another dairy processing cooperative that had a good year. Another organization that was negatively impacted by falling cheese prices last year appears to have survived this year in better shape. A third dairy cooperative experienced increased growth, but primarily from non-milk marketing operations. A fourth major cooperative continued its national expansion and consolidated its joint ventures and strategic alliances with primarily a non-cooperative milk marketing company. And fifth organization continued to experience growth from the addition of farmers and local

cooperatives south of New York State.

What were once three dairy related cooperatives (artificial insemination, herd improvement, and livestock auctions) headquartered in New York are now part of other diversified dairy cooperatives. It is difficult to separate their individual performance from that of their larger diversified parent cooperatives. However, it is our understanding that all three generally performed well and were profitable. This was despite lower milk prices in 2000 when one would expect farmers to reduce the use of such services as herd improvement and artificial insemination. The herd improvement organization continues to expand geographically, especially to the south as well as into Canada.

The major supply cooperative in the Northeast reported lower sales and marginal profitability in 2000. While it reported a profit from "continuing operations", it reported a loss when "discontinued operations" are included. During 2000, the organization implemented its announced strategy to divest its store operations to franchisees (primarily former local managers) and newly formed local cooperatives. Also, it sold its retail distribution operations to the major regional supply cooperative in the Southeast. The organization is now left with providing agricultural supplies (i.e. feed, fertilizer, chemicals, seeds, etc.), a petroleum operation, a food and birdseed division, as well as leasing and insurance operations.

The major vegetable and fruit processing cooperative reported increased sales, and a small increase in net income which was passed back to members. The organization continued to digest its major acquisition from two years ago of a major branded vegetable processor in terms of integrating operations and coordinating functions. This acquisition has increased the cooperatives sales by over 50 percent. Their management agreement with a major west coast cooperative continues to be challenging in terms of achieving profitability and acceptable returns to members. One should continue to expect organizational adjustments in 2001.

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 from research on the health benefits of consuming grape juice have had a extremely positive impact on demand for its products. The 2000 grape harvest was large but less than initially predicted, quality was good and prices have remained strong. Their enviable situation is that they can not get enough grapes to satisfy their increasing demand for their consumer products. Grape demand and prices will most certainly remain strong in 2001.

The major cranberry cooperative in the northeast experienced an extremely disappointing year. Members have been told to expect an approximate price of \$10 per cwt, as compared to \$55 just a few years ago. The variable costs of production are estimated to be \$30-35 per cwt. This is an industry wide phenomena primarily due to a significant over-supply. The over-supply was the result of a new entrant in the market that encouraged major new plantings. During the fall of 2000, a dormant marketing order was re-instituted to require the removal of 15% of each growers 2000 production from the market. It will likely take at least a few years for cranberry production to again reach supply and demand equilibrium.

The farm credit cooperatives had good financial performance during the year. However, it is evident that the banks are becoming more cautious in lending to farmers in the region. The low prices of milk, apples and cranberries will be a continuing consideration in their lending decisions.

Cooperative Outlook

In 2000, most New York and northeast cooperatives had stable results and are financially strong. In addition, they are pursuing consistent, and generally conservative strategies that will not risk their members'

cooperative investments. But their primary concern is for the survival of their members.

Low prices will continue to plague several industries, particularly dairy, apples and cranberries. This will no doubt have a ripple effect and negative impact on the cooperatives that service those industries, such as farm supply, artificial insemination, dairy herd improvement organizations and credit.

The global economy has had only a minor impact on northeast cooperatives, but appears to have strengthened from a year ago. As the economies of Southeast Asia, as well as Latin and South America continue to improve, the demand for U.S. agricultural products could begin to increase. However, at the same time the agricultural economies of some emerging economies are raising havoc in with U.S. market, e.g. China's exports of apple concentrate to the U.S.

We do not expect any dramatic changes in Northeast cooperative performance or structure in 2001. This will likely be a year of continued internal adjustment. The focus will be on the impact continued low farm prices will have on members.

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	1998	1999	2000 ^d
<i>billion dollars</i>							
Assets							
Real Estate	783	586	626	741	823	847	873
Livestock	61	47	71	58	62	61	60
Machinery	80	83	85	89	89	87	86
Crops ^a	33	23	23	27	30	30	32
Purchased Inputs	c	1	3	3	5	6	6
Financial Assets	<u>26</u>	<u>33</u>	<u>38</u>	<u>49</u>	<u>55</u>	<u>53</u>	<u>55</u>
Total	983	773	846	967	1064	1084	1112
Liabilities & Equity							
Real Estate Debt	90	100	75	79	90	94	96
Nonreal Estate Debt ^b	<u>77</u>	<u>78</u>	<u>63</u>	<u>72</u>	<u>83</u>	<u>82</u>	<u>81</u>
Total	167	178	138	151	173	176	177
Owner Equity	<u>816</u>	<u>595</u>	<u>708</u>	<u>816</u>	<u>891</u>	<u>908</u>	<u>935</u>
Total	983	773	846	967	1064	1084	1112
Percent Equity	83	77	84	84	84	84	84

^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	1998	1999	2000 ^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	8	8	8
All Other ^a	<u>6</u>	<u>7</u>	<u>8</u>	<u>8</u>	<u>9</u>	<u>8</u>	<u>8</u>
Total	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	54	56	54	52	52	53	54
Nonreal Estate Debt ^b	<u>46</u>	<u>44</u>	<u>46</u>	<u>48</u>	<u>48</u>	<u>47</u>	<u>46</u>
Total	100	100	100	100	100	100	100

^a Excludes crops under CCC loan.

^b Excludes CCC loans.

^c Forecast

Source: Agricultural Outlook, Economic Research Service, USDA, AGO-276, November 2000.

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

Item	1980	1985	1990	1995	1998	1999	2000 ^c
<i>billion dollars</i>							
Real Estate							
Farm Credit System	33.2	42.2	25.8	24.8	28.9	30.3	30.9
Individuals & Others	27.8	25.8	15.1	18.0	18.7	18.7	18.8
Commercial Banks	7.8	10.7	16.2	22.3	27.2	29.8	30.4
Farm Service Agency	7.4	9.8	7.6	5.1	4.1	3.9	3.6
Insurance Companies	12.0	11.3	9.7	9.1	10.7	11.5	11.8
CCC-Storage	<u>1.5</u>	<u>.3</u>	<u>a</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	89.7	100.1	74.4	79.3	89.6	94.2	95.5
Nonreal Estate^b							
Commercial Banks	30.0	33.7	31.3	37.7	42.8	42.0	41.0
Farm Service Agency	10.0	14.7	9.4	5.1	4.0	4.0	3.9
Merchants & Dealers	17.4	15.1	12.7	16.2	19.6	20.3	20.9
Farm Credit System	<u>19.7</u>	<u>14.0</u>	<u>9.8</u>	<u>12.5</u>	<u>16.6</u>	<u>15.9</u>	<u>15.2</u>
Total	77.1	77.5	63.2	71.5	83.0	82.2	81.0

^a Less than .05 billion.

^b Excludes crops under CCC loan.

^c Forecast

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

Item	1980	1985	1990	1995	1998	1999	2000
<i>percent of total</i>							
Farm Credit System	32	32	26	25	26	26	26
Commercial Banks	23	25	35	40	41	41	40
Farm Service Agency	11	14	12	7	5	4	4
Insurance Companies	7	6	7	6	6	7	7
Individuals & merchants	<u>27</u>	<u>23</u>	<u>20</u>	<u>22</u>	<u>22</u>	<u>22</u>	<u>23</u>
Total ^a	100	100	100	100	100	100	100

^a Excludes crops under CCC loan.

Source: Economic Research Service, USDA, Agricultural Income and Finance, AIS-75, September 2000.

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

Item	1980	1985	1990	1995	1997	1998	1999
	<i>million dollars</i>						
Assets							
Real Estate	6178	6520	7768	8165	8294	8683	9137
Livestock	1527	983	1259	1138	1102	1272	1360
Machinery	1718	1875	1847	1838	1637	1639	1659
Crops ^a	561	491	540	352	440	509	231
Purchased Inputs	^c	27	74	88	139	143	114
Financial Assets	<u>607</u>	<u>668</u>	<u>666</u>	<u>670</u>	<u>689</u>	<u>804</u>	<u>844</u>
Total	10591	10564	12154	12251	12301	13050	13345
Liabilities & Equity							
Real Estate Debt	1038	1125	901	854	839	830	980
Nonreal Estate Debt ^b	<u>1582</u>	<u>1472</u>	<u>1268</u>	<u>1318</u>	<u>1513</u>	<u>1589</u>	<u>1475</u>
Total	2620	2597	2169	2172	2352	2419	2455
Owner Equity	<u>7971</u>	<u>7967</u>	<u>9985</u>	<u>10079</u>	<u>9949</u>	<u>10631</u>	<u>10890</u>
Total	10591	10564	12154	12251	12301	13050	13345
Percent Equity	75	75	82	82	81	81	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	1980	1985	1990	1995	1997	1998	1999
	<i>percent of total</i>						
Assets							
Real Estate	58	62	64	67	68	64	69
Livestock	15	9	10	9	9	10	10
Machinery	16	18	15	15	13	12	12
All Other	<u>11</u>	<u>11</u>	<u>11</u>	<u>9</u>	<u>10</u>	<u>14</u>	<u>9</u>
Total ^a	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	40	43	42	39	36	34	40
Nonreal Estate Debt ^b	<u>60</u>	<u>57</u>	<u>58</u>	<u>61</u>	<u>64</u>	<u>66</u>	<u>60</u>
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 2000.

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

Item	1980	1985	1990	1995	1997	1998	1999
	<i>million dollars</i>						
Real Estate							
Farm Credit System	367	449	404	332	273	251	388
Individuals & Others	373	363	216	256	269	266	266
Commercial Banks	108	89	116	146	184	199	218
Farm Service Agency	145	192	156	116	107	101	94
Insurance Companies	26	26	9	4	6	13	14
CCC - Storage	19	6	a	0	0	0	0
Total	1038	1125	901	854	839	830	980
Nonreal Estate							
Commercial Banks	632	597	417	374	405	416	408
Farm Service Agency	284	287	219	176	184	180	176
Merchants & Dealers	338	257	216	274	319	332	344
Farm Credit System	328	331	416	494	605	661	547
Total ^b	1582	1472	1268	1318	1513	1589	1475

^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	1980	1985	1990	1995	1997	1998	1999
	<i>percent of total</i>						
Farm Credit System	27	30	38	38	37	38	38
Commercial Banks	28	26	25	24	25	25	25
Farm Service Agency	17	19	17	14	13	12	11
Insurance Companies	1	1	a	a	a	a	1
Individuals & Merchants	27	24	20	24	25	25	25
Total	100	100	100	100	100	100	100

^a Less than .5 percent.

Source: Economic Research Service, USDA. Data revised November 2000.

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

Year	percent of loan volume	
	Nonaccrual	Nonperforming ^a
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	1.8	2.1
1999	1.4	1.6
2000 (9/30)	1.3	1.5

^a Nonaccrual plus accrual that are restructured or 90 days or more past due (impaired loans).

Source: Annual and Quarterly Reports of the Farm Credit System.

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	0.9	1.4	2.4
1995	0.9	1.1	2.1	0.9	1.4	2.4
1996	1.0	1.3	2.4	1.0	1.7	2.8
1997	0.9	1.1	2.0	0.9	1.5	2.6
1998	0.9	1.2	2.2	1.0	1.7	2.9
1999	1.1	1.3	2.1	0.7	1.3	2.0
2000 (6/30)	1.0	1.3	2.2	1.0	1.7	2.7

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

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

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
9/30/99	5	13	15	15	32	29	29	63	15	11
9/30/00	4	12	14	14	26	27	26	60	15	11

^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
9/30/99	1	2	3	2
9/30/00	1	2	2	3

Source: FSA Reports 4067 and 4067-C

The value of the nation's farm assets changed little during 1999 and 2000, except for increases of about 3 percent per year in land prices. This resulted in approximately 2 percent increases in total farm values. New York State farm assets grew at a similar rate, with much of the increase in land and livestock values being offset by declines in the value of crop inventories.

At the national level total farm debt was basically flat during 2000 following a very modest (under 2 percent) increase in 1999. Low prices for many farm commodities have reduced farmer's desire to make the kinds of investments that would increase debt levels. Growth in total farm debt in New York also slowed drastically during 1999. The only significant change in lender shares at either the national or New York level is a modest decline in Farm Service Agency lending.

The low prices for many agricultural commodities are not showing up in the nonaccrual and nonperforming loans of commercial lenders. High government payments have allowed farmer borrowers to stay current on most debt. Delinquency rates on FSA loans continues a slow decline.

Short term interest rates were pushed up by the Federal Reserve Board during late 1999 and early 2000. Basic short term rates increased by about one percent in each year.

FIGURE 4-1. ANNUAL AVERAGE SHORT TERM INTEREST RATES

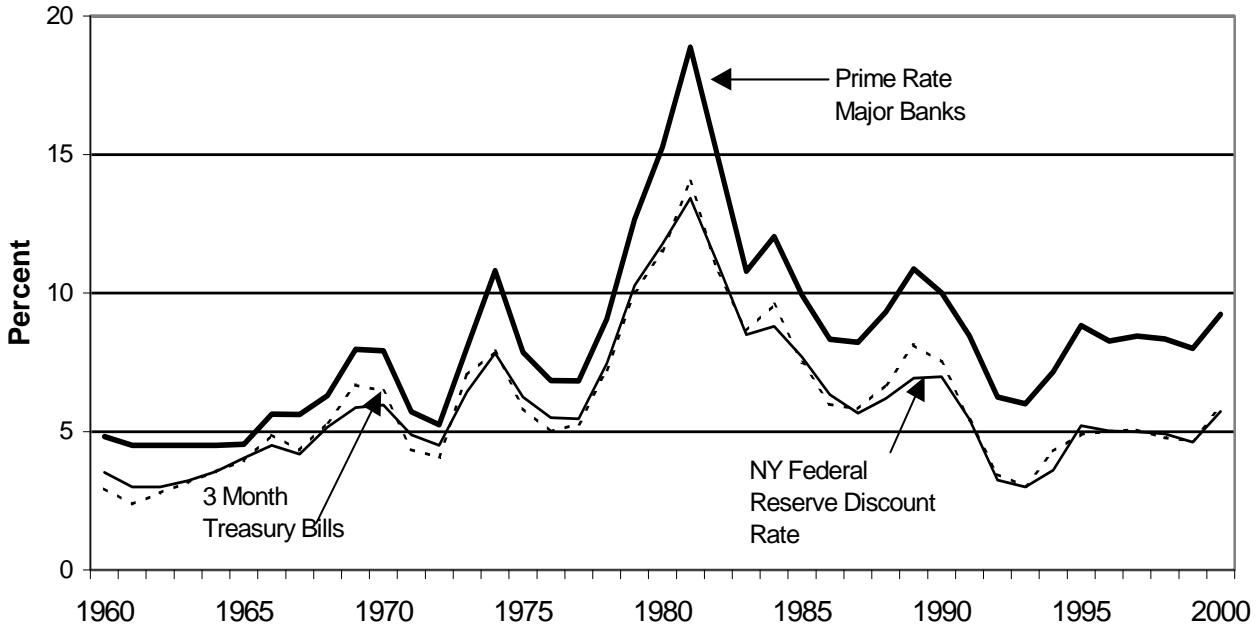
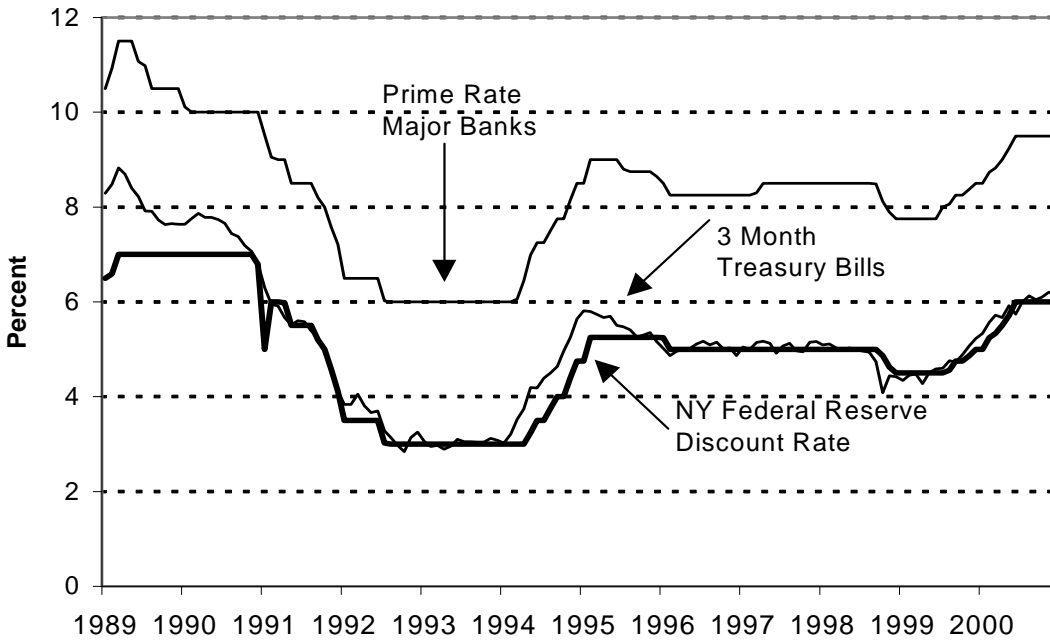
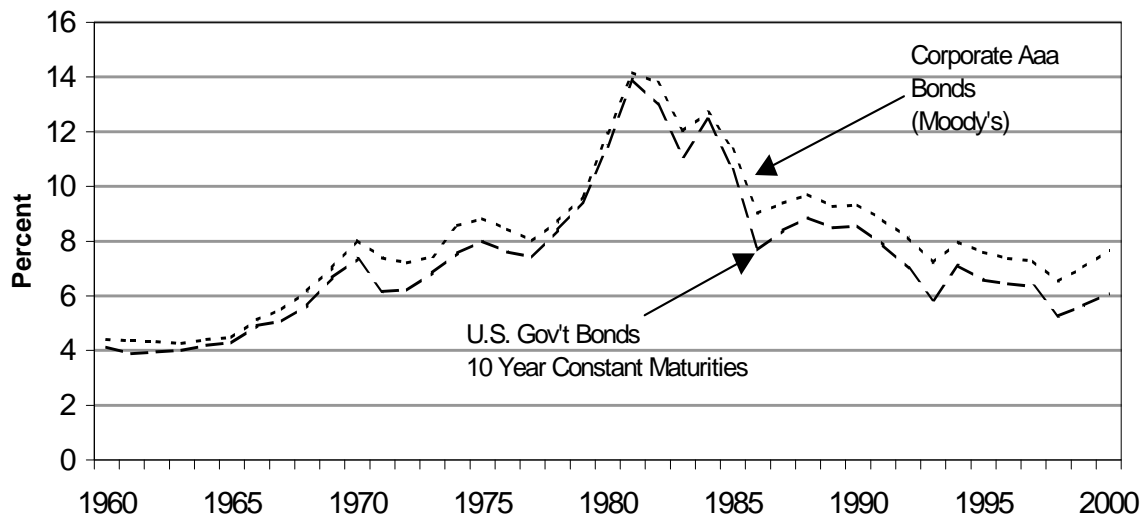


FIGURE 4-2. MONTHLY SHORT TERM INTEREST RATES



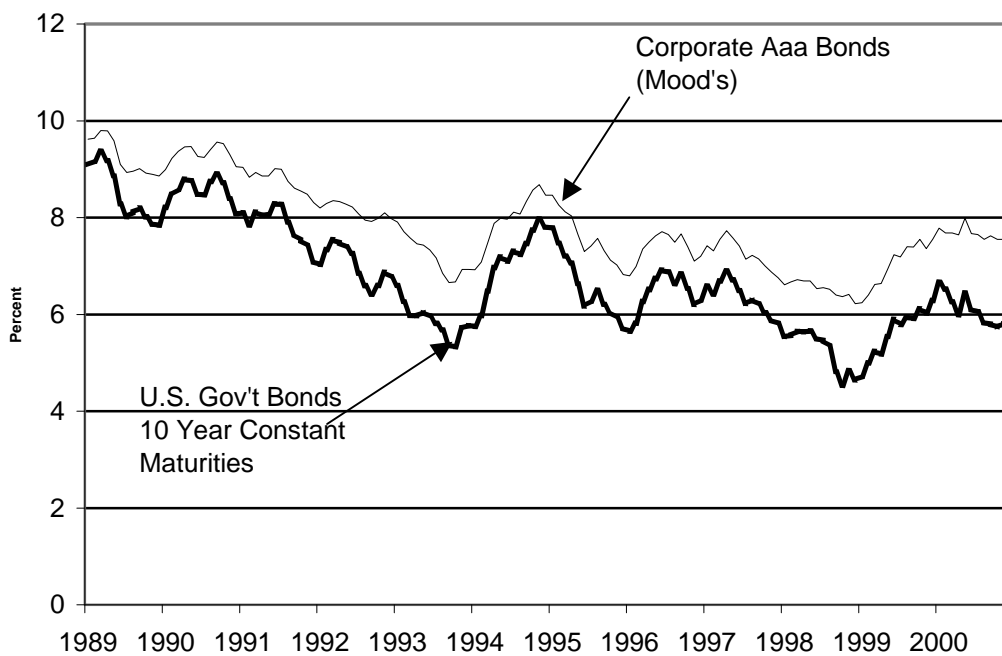
3 Month Treasury Bills		
	1999	2000
Jan.	4.34	5.34
Feb.	4.45	5.57
Mar.	4.48	5.72
Apr.	4.28	5.67
May	4.51	5.92
June	4.59	5.74
July	4.60	6.00
Aug.	4.76	6.13
Sept	4.73	6.04
Oct.	4.88	6.10
Nov.	5.07	
Dec.	5.23	

FIGURE 4-3 ANNUAL LONG TERM INTEREST RATES

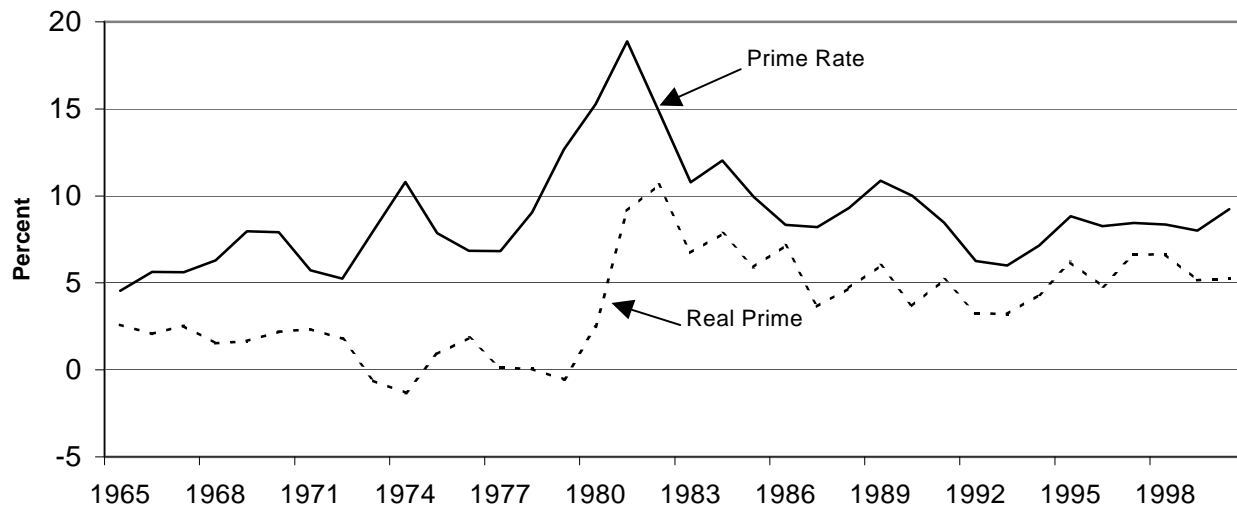


Long term interest rates, as indicated by corporate and 10 year government bonds, decreased nearly three-quarters of a percent in 2000, mostly during the early part of the year. However, this decline was somewhat less than the increase that occurred during 1999 resulting in higher average rates in 2000.

FIGURE 4-4. MONTHLY LONG TERM INTEREST RATES



U.S. Gov't Bonds 10 Year Constant Maturity		
	1999	2000
Jan	4.72	6.66
Feb	5.00	6.52
Mar	5.23	6.26
Apr	5.18	5.99
May	5.54	6.44
June	5.90	6.10
July	5.79	6.05
Aug	5.94	5.83
Sept	5.92	5.80
Oct	6.11	5.74
Nov	6.03	
Dec	6.28	

FIGURE 4-5. CONTRACT AND REAL INTEREST RATES

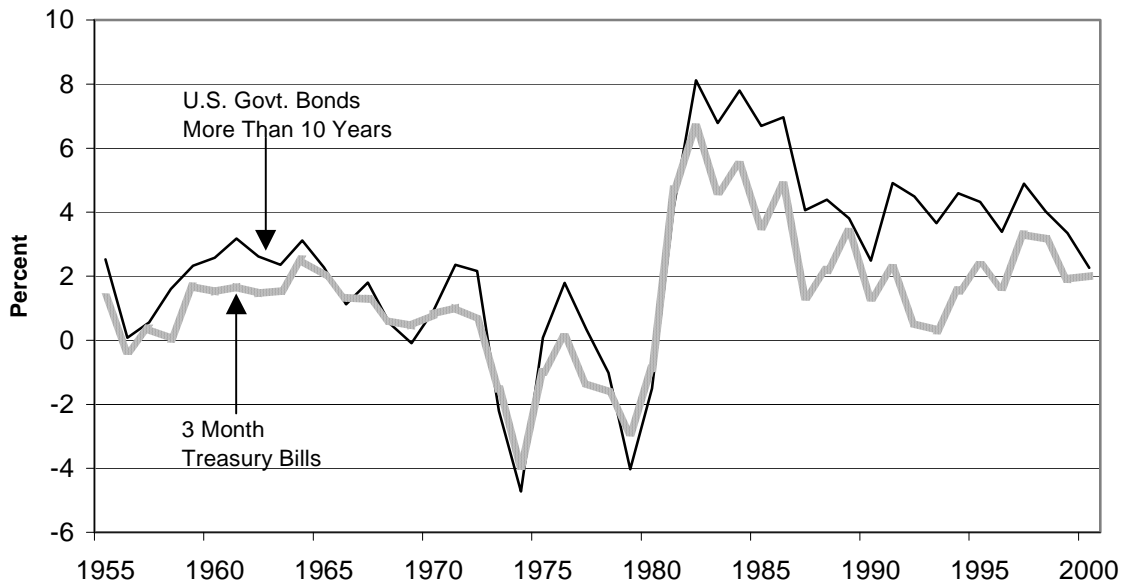
Real short term interest rates showed little change between 1999 and 2000 because the increase in short term rates was nearly matched by increases in the rate of inflation. However, real rates on the longest term bonds (greater than 10 years) continued to decline as a result of relatively constant average annual interest rates and higher inflation rates. Rates on the longest term government bonds, particularly the 30 year bond, were held down by reduced supply resulting from budget surpluses. Thus, average mid range (10 year) bonds showed an increase in average 2000 rates over 1999 while the longer term bonds averaged about the same for both years.

Federal Reserve Board actions to increase short term interest rates have resulted in a very flat to inverted yield curve. Unlike most recent occurrences of inverted yield curves, the current interest rate environment is caused not by high inflation, but by FED actions to head off high rates of inflation.

The current consensus among forecasters is that interest rates will change little well into 2001. While there is general agreement that the economy is slowing and will grow at a significantly lower rate in 2001 than in 2000, economic growth is still expected to be a healthy 3–3.5 percent. Strong expected growth, combined with the flow-through effects of the recent increases in oil prices, are expected to maintain upward pressure on prices. In response, the Federal Reserve Board is expected to keep short term rates at near current levels for some time. However, the effects of the current relatively high short term rates should start to have an impact, which could result in some easing of those rates in mid to late 2001.

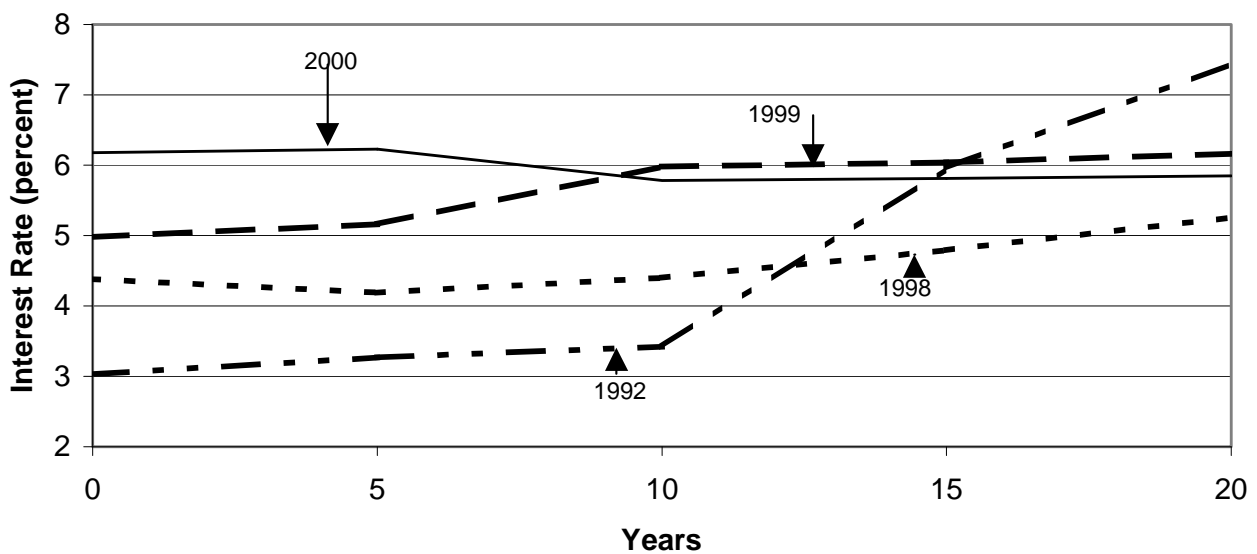
It is generally believed that the current inflation pressures are short term and that basic long term inflation is quite low, say 2.5 percent. This situation has resulted in long term interest rates that are equal to or below short term rates. This somewhat unusual situation is expected to continue well into 2001.

FIGURE 4-6, LONG AND SHORT TERM REAL INTEREST RATES



Farm level interest rates are expected to continue at late 2000 levels well into 2001. Modest easing of short term rates may occur in mid to late 2001. Credit availability will likely become a larger problem for some marginal operators as agricultural lenders participate in a general creditor attempt to shore up portfolios in anticipation of less robust economic conditions. This will be particularly true for farms producing agricultural commodities that have experienced price declines during the last couple of years.

FIGURE 4-7. YIELD CURVE 1ST WEEK OF NOVEMBER (U.S. GOVERNMENT SECURITIES)



Chapter 5. Grain and Feed

James H. Hilker, Professor

The outlook for grain and feed are summarized in Tables 5-1 through 5-3. Grain and soybean prices have been low for the past two crop years, and without a major growing problem somewhere in the world will continue to be low for at least the next two crop years including the present crop year. Not only has the U.S. had generally large crops the past three growing seasons, but the rest of the world as a whole has also had three years of good crops.

Corn

This fall we had the second highest corn yield on record, the most harvested acres since 1981, and ended up with just the second 10 billion bushel crop on record. Add that to a 1.7 billion bushel carryover and we have the third largest supply on record at nearly 11.8 billion bushels. This is only behind the two 12 billion bushel supply years of 1986-87 and 1987-88. Although usage will be much higher this year than those, we also have no government minimum market price and no government stocks holding grain off the market. The corn supply situation for the September 1-August 31 2000-01 corn crop year can be seen in Table 5-1.

TABLE 5-1. SUPPLY/DEMAND BALANCE SHEET FOR CORN			
	Est. 1999-00	Hilker 2000-01	Hilker 2001-02
(Million Acres)			
Acres Planted	77.4	79.6	79.4
Acres Harvested	70.5	73.0	72.8
Bu./Harvested Acre	133.8	137.7	138.9
(Million Bushels)			
Beginning Stocks	1787	1715	1719
Production	9437	10054	10112
Imports	15	10	9
Total Supply	11239	11779	11840
Use:			
Feed and Residual	5674	5825	5850
Food, Seed and Ind. Uses	1913	1985	2055
Total Domestic	7587	7810	7905
Exports	1937	2250	2225
Total Use	9524	10060	10130
Ending Stocks	1715	1719	1710
Ending Stocks, % of Use	18.0	17.1	16.9
Regular Loan Rate	\$1.89	\$1.89	\$1.89
US Season Average Farm Price, \$/Bu.	\$1.80	\$1.90	\$1.95

Source: USDA and Jim Hilker.

Feed use is expected to grow about 3% in 2000-01 as we have a few more animal units this fall and we continue to feed to heavier weights. Cattle on feed have been over year-to-year levels all fall and probably will remain that way through the end of 2000. Cattle dressed weights were running over 2% higher this fall than last. Numbers on feed are then expected to fall off for the remainder of the crop year. Hog numbers are down several percent this fall, but are expected to be higher by the spring and summer quarters. Hog weights are up marginally as well. Broiler numbers are expected to be up 2-3% in the fall and winter quarters and 3-4% for the spring and summer quarters. A smaller sorghum crop and higher relative wheat prices also mean more corn will be fed.

Food, Seed, and Industrial uses (FSI) will continue to grow as well. The rapid growth in High Fructose Corn Syrup will slow a bit, but ethanol growth will continue to be rapid, especially if oil prices stay high. This growth area has been strong for the past 20 years, except for the period of \$5.00 corn prices in the spring and summer of 1996.

Exports are expected to grow by 16% in 2000-01. The increase is largely due to the smaller corn crop in China cutting back on Chinese exports. Part of the smaller Chinese corn crop was due to a 3% cutback in corn acres probably related to WTO, but most of it was due to poorer yields. On the other hand, U.S. corn exports are off to a slow start and will need to pick up steam to reach the forecast.

Total these up and we are expected to use a record 10 billion bushels. The problem is we will still have over a 1.7 billion bushel ending stocks figure, 17% of use. This means an annual average weighted price around \$1.90.

The market, by the basis, is telling sellers it will pay to store on-farm. This means it will also pay for users to buy and store if they have on-farm storage. If on-farm storage is not available sellers should move the corn and consider buying calls this winter if they want to be in the market for a possible spring rally. Buyers should buy by need through the winter, but may consider locking in some of their needs before a possible spring-summer rally.

The picture for the 2001-02 corn crop does not change much as seen in Table 5-1. Acreage is expected to stay about the same. Multiple that by a trend yield and you have another 10 plus billion bushel crop. Add that to the large beginning stocks and year to year supply will grow.

Feed use will grow marginally with a few more hogs and poultry and fewer cattle. FSI use is expected to continue it's trend. Exports are expected to still be strong, but may fall off a bit with expectations of a normal Chinese corn yield. This will put use at another 10.1 billion bushel record. But, prices will likely remain under \$2.00 without a weather problem.

December 2001 futures tell me my forecast is to low. Sellers may want to consider locking in some fall 2001 corn prices. Buyers should look for some forward buying opportunities later in the year.

Wheat

We are half way through the wheat marketing year and prices are still depressed. This comes from expected ending stocks being a whopping 37.5% of use as shown in Table 5-2. When you have over one-third of your needs for a year expected to still be sitting in stocks at the end of the year it means poor prices.

TABLE 5-2. SUPPLY/DEMAND BALANCE SHEET FOR WHEAT			
	Est. 1999-00	Hilker 2000-01	Hilker 2001-02
(Million Acres)			
Acres Planted	62.7	62.5	61.5
Acres Harvested	53.8	53.0	52.9
Bu./Harvested Acre	42.7	41.9	41.4
(Million Bushels)			
Beginning Stocks	946	950	892
Production	2299	2223	2190
Imports	95	95	98
Total Supply	3340	3268	3180
Use:			
Food	925	940	955
Seed	92	86	90
Feed and Residual	283	250	220
Total Domestic	1300	1276	1265
Exports	1090	1100	1150
Total Use	2390	2376	2415
Ending Stocks	950	892	765
Ending Stocks, % of Use	39.7	37.5	31.7
Regular Loan Rate	\$2.58	\$2.58	2.58
Season Average Farm Price			
U.S, \$/Bu.	\$2.48	\$2.60	\$3.00
Michigan \$/Bu.	2.15	2.15	2.55

Source: USDA and Jim Hilker.

On the bright side projected ending stocks are down a little from last year. Wheat yields for the country as a whole were the lowest of the past three years, but were also the third highest on record. This means a lower total supply. Total use is expected to be about the same as last year.

There is one other potential bright side for wheat prices. World ending stocks are projected to be a relatively tight 16% of use. It will not take a real big shortfall in the world wheat crop next year to substantially raise prices.

Total supply should drop a little in 2001-02 with a trend yield and smaller beginning stocks. Total use should grow marginally with stronger exports. This should bring about smaller ending stocks and marginally higher prices.

Soybeans

Acres have kept the U.S. in an oversupply of soybeans the past three growing seasons and acres and good yields have kept South America with plenty of soybeans over the same period. When we add the two together, we have the world awash in soybeans despite the fact that demand has been very good and world use levels have grown substantially over the period. The bottom line is that we have cheap soybean oil and soybean meal prices and it is unlikely to change without a weather happening.

The 2000-01 supply situation can be seen in Table 5-3. Lots of acres and a slightly below trend yield brought us record production. Add to this a good size carrying and we have a record total supply. Crushings are expected to be up a little with the livestock numbers. This number needs to be watched given the mad cow situation in Europe, it could grow substantially if they replace bone meal with soymeal. Export of whole beans is expected to be near last year, but will be pushed with what looks like a potentially huge crop in South America.

TABLE 5-3. SUPPLY/DEMAND BALANCE SHEET FOR SOYBEANS			
	Est. 1999-00	Hilker 2000-01	Hilker 2001-02
(Million Acres)			
Acres Planted	73.7	74.5	74.8
Acres Harvested	72.4	73.0	73.5
Bu./Harvested Acre	36.6	38.0	38.5
(Million Bushels)			
Beginning Stocks	348	288	340
Production	2654	2777	2830
Imports	4	3	3
Total Supply	3006	3068	3170
Use:			
Crushings	1579	1600	1630
Exports	973	960	1000
Seed, Feed and Residuals	166	168	170
Total Use	2718	2728	2800
Ending Stocks	288	340	370
Ending Stocks, % of Use	10.6	12.5	13.2
Regular Loan Rate	\$5.26	\$5.26	\$5.26
US Season Average Farm Price, \$/Bu.	\$4.65	\$4.55	\$4.50

Source: USDA and Jim Hilker.

This only increases total use marginally, which means greater ending stocks, 12.5 % of use, and lower prices. Soymeal prices may hold or increase some, but soyoil prices are expected to lag. The advice for sellers is the same as for corn, other than the returns to storing corn are higher. Buyers of meal may want to price some of their needs through the year just because prices are relatively low and this Europe thing could explode or there could be a weather scare in South America.

Look at Table 5-3 for a longer run picture. As you can see acres will remain high despite low prices. This is because the soybean loan rate compared to the corn loan rate brings substantially higher returns per acre. Put that with a trend yield and large beginning stocks and the picture begins to turn ugly. Even with a projected increase in use, ending stocks are expected to grow. This means low market prices. However, producers are protected to some degree by the relatively high soybean loan rate.

You can see Jim Hilker's Market Updates bi-monthly at <http://www.msu.edu/user/hilker/>.

Chapter 6. Livestock

James H. Hilker, Professor

Cattle

Cattle prices have recovered, but feedlot returns are in the red. The cattle industry has been in a slow period of liquidation for the past three years from the beef cow side. This has finally begun to show up in feedlot placements, and will show up in beef production over the next year. This should continue to help steer prices. The question is whether cattle feeders will keep bidding more than breakeven prices for feeders. Three good years of calf prices will probably bring expansion of the beef cow herds, but that will not mean more beef production for a couple of years.

The big story in the cattle industry is the turn around in meat demand. Per capita supply is up a half of pound in 2000 over 1999, and yet steer prices are expected to average \$68.84/cwt this year versus \$65.56 in 1999. Total supplies of substitutes were about equal, although per capita incomes were up. My research has shown that there has been a leftward shift in the beef demand almost constantly since the late 1970's. This shift has probably been due to health concerns and convenience. Maybe this is some evidence this continual decline in demand has stopped or at least slowed.

Beef production is expected to decrease about 4-5% in 2001 relative to 2000. Exactly how big the drop will be depends on how many heifers are held back for breeding, and the finishing weights. First and second quarter 2001 production is expected to be down about 2-3% which should bring first quarter steer prices into the \$71-75 range versus \$69.32 in 1999. Second quarter prices should be in the \$73-78 range versus \$71.59 this year. Third quarter year-to-year beef production is expected to drop close to 5% and prices should remain in the low to mid \$70's versus this year's \$65.43.

As of this writing the futures markets were showing about the same levels as the above forecasts, other than perhaps a little sharper drop off come summer. Cattle sellers may want to watch the futures for some pricing opportunities if the November rally continues. I see feeder calf prices staying at around this year's levels next year if feed prices follow my forecasts in Chapter 5.

Hogs

Hog prices are recovering from their fall lows, but how long will it last is the big question? The last Hogs and Pigs Report indicated expansion as we go through 2001, probably starting in the second quarter. Pertinent questions are: will the good demand we have been seeing recently continue; where the long term story matches beef, will the efficiency gains we have seen continue; and will there be enough slaughter capacity next fall and even more so the fall of 2002?

Pork production is expected to fall 1% in the first quarter of 2001 and prices are expected to average in the \$39-42 range, a little higher than 2000. Second quarter production is expected to be up 2-3% and prices may reach \$42-45, down from \$48 this year. Third quarter production is expected to grow 3-4% and prices should be in the \$38-42 range, down \$4-8 from this year. Fourth quarter 2001 production is scary. We could approach 1998 levels. If we do not break slaughter capacity, I suspect prices will be in the low \$30's and may dip into the \$20's at times. Otherwise, it could really be a disaster.

As of mid-November you could lock in higher prices than the above forecasts using the futures market for all of 2001. I would suggest forward pricing in a significant portion of your 2001 production.

You can see Jim Hilker's Market Updates bi-monthly at <http://www.msu.edu/user/hilker/>.

Chapter 7. Dairy — Markets and Policy

Mark W. Stephenson, Senior Extension Associate

2001 Dairy Outlook

Positive Factors:

- Purchased grain prices will again be low
- Direct government disaster payments
- Demand for dairy products will remain strong

Negative Factors:

- Poor forage quality in New York
- Milk price will be low relative to 1990s
- Replacement animals are expensive

Uncertainties:

- Policy actions, including change in "tilt"

New York Dairy Situation and Outlook 1998, 1999 Preliminary 2000, and Projected 2001						
Item	1998	1999	2000	2001	Percent Change	
					99-00	00-01
Number of milk cows (thousand head)	701	701	692	685	-1.3	-1.0
Milk per cow (lbs.)	16,748	17,175	17,400	17,600	1.3	1.1
Total milk production (million lbs.)	11,740	12,040	12,041	12,056	0.0	0.1
Blended milk price (\$/cwt.) ^a	14.73	14.01	13.01	13.49	-7.1	3.7

^a New York–New Jersey blend price, 201–210 mile zone, 3.5 percent fat, this price excludes any premiums, assessments, or hauling fees. For year 2000 & 2001, new Northeast order blend price for farms shipping milk to Suffolk County, MA.

U.S. Milk Supply and Utilization, 1994–2001.

	1994	1995	1996*	1997	1998	1999 ^a	2000* ^b	2001 ^c
<u>Supply</u>								
Cows Numbers (thous.)	9,500	9,458	9,351	9,258	9,158	9,156	9,233	9,168
Production/cow (lbs)	16,175	16,433	16,498	16,916	17,192	17,771	18,269	18,616
Production	153.7	155.4	154.3	156.6	157.4	162.7	168.7	170.7
Farm Use	1.7	1.6	1.5	1.4	1.4	1.4	1.3	1.3
Marketings	152.0	153.8	152.8	155.2	156.0	161.3	167.3	169.4
Beginning Commercial Stocks	4.5	4.3	4.1	4.7	4.9	5.3	6.1	7.3
Imports	2.9	2.9	2.9	2.7	4.6	4.8	4.1	4.3
Total Supply	159.4	161.0	159.8	162.6	165.5	171.4	177.5	181.0
<u>Utilization</u>								
Commercial Disappearance	150.3	154.8	155.0	156.6	159.9	164.9	169.2	174.1
Ending Commercial Stocks	4.3	4.1	4.7	4.9	5.3	6.1	7.3	5.8
DEIP	2.4	1.9	0.1	1.1	0.3	0.3	0.4	0.4
Net Removals (excluding DEIP)	2.4	0.2	0.0	0.0	0.0	0.1	0.6	0.8
Total Use	159.4	161.0	159.8	162.6	165.5	171.4	177.5	181.0

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.

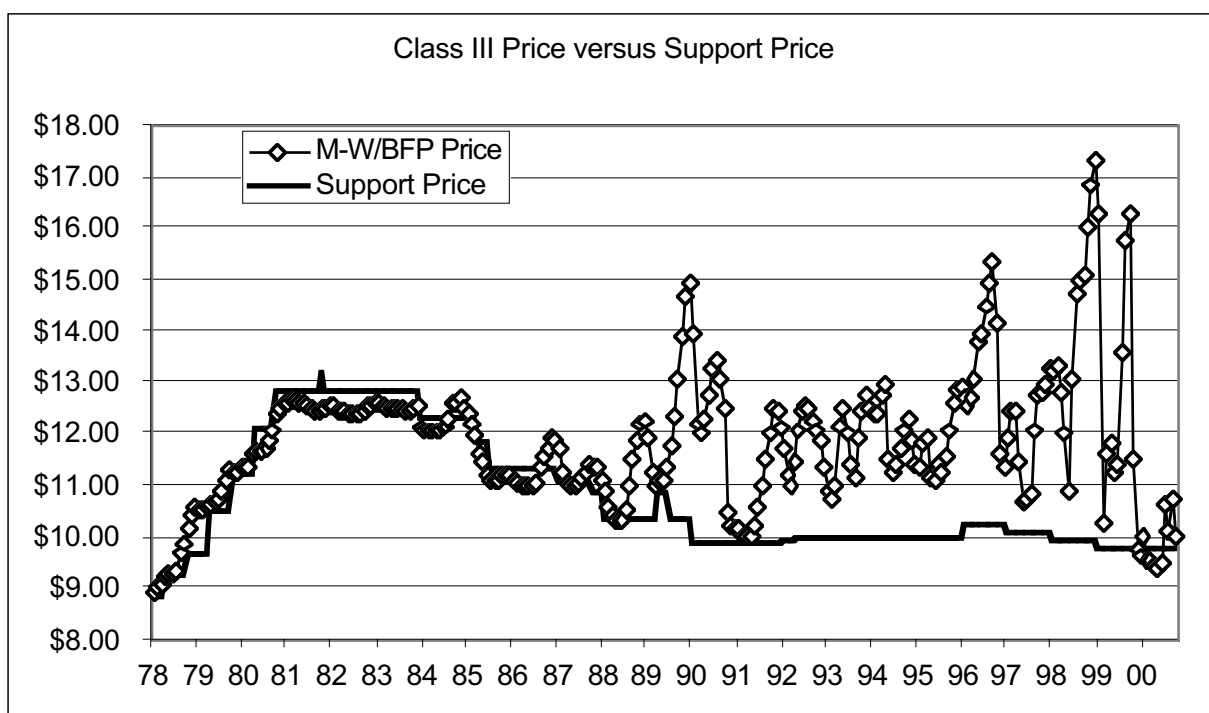
^b Based on preliminary USDA data and Cornell estimates.

^c Projected by Mark Stephenson.

The U.S. Dairy Situation and Outlook

At last year's outlook, I was projecting 2000 milk prices to be about \$1.50 lower than the 1999 level. That forecast would have been a dramatic drop in producer income but we have actually had prices even lower than those forecasts. In fact, you have to look all the way back to 1978 to find class III prices that were comparably low. The difference between 1978 prices and 2000 prices is that producers were very optimistic about the payments that they were receiving in 1978. The federal price support program was actively purchasing dairy products and prices had been steadily rising at that time. In 2000, prices have fallen to such low levels that a dormant, and nearly extinct, price support program has once again begun to buy significant quantities of dairy products.

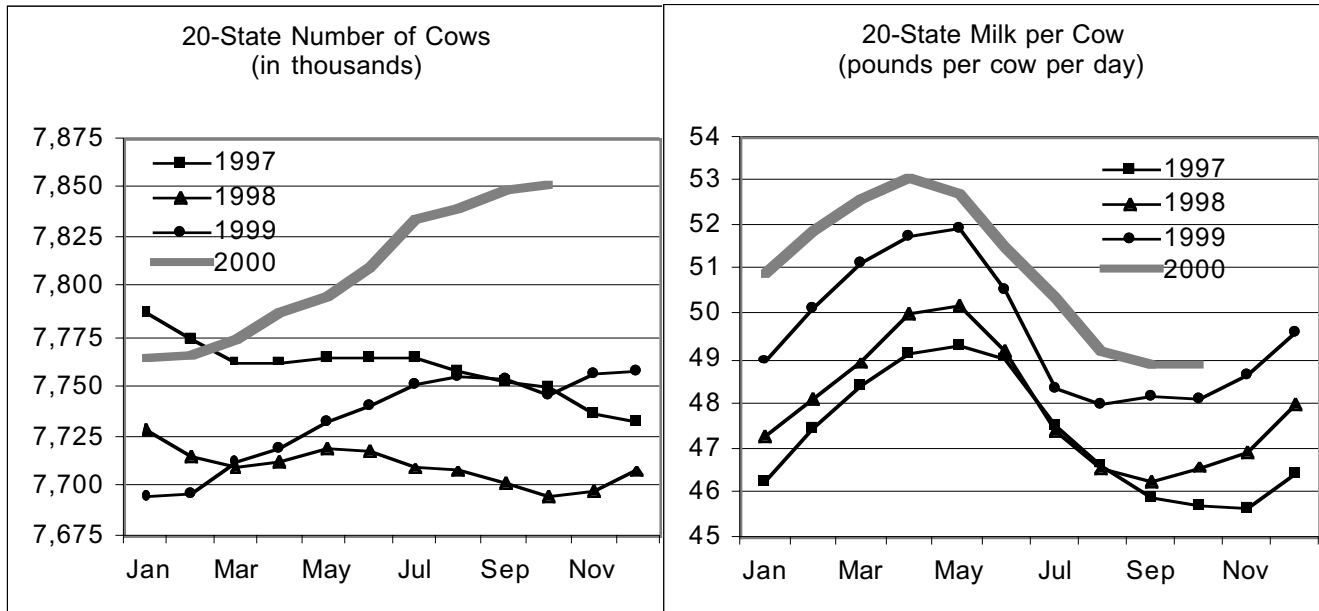
The most sweeping federal milk marketing order (FMMO) reforms ever implemented were begun in January of 2000. Many folks wondered if the reforms were responsible for the low milk prices. I can assure you that they were not. If we had been operating under the old milk pricing system, the federal order prices would have been even lower than they have been. The low prices have been the result of the market's response to very large increases in the milk supply.



Milk Supplies

Declining U.S. cow numbers have been necessary to partially offset long-term increases in productivity. It has been typical for the country to see a two percent increase in milk per cow per year and a one percent decline in cow numbers. This would yield about a one percent increase in total milk production. Producers responded to the strong price signals of the market in 1998 and 1999 with a dramatic increase in cow numbers. Such a herd buildup would have normally been accompanied by

little or no increase in milk per cow as more marginal animals were retained. This has not been true in this expansion. Relatively inexpensive grains and new management tools (rbST) have been utilized and have given us strong increases in both cow numbers and productivity simultaneously. In 1999, U.S. milk production had increased over year earlier levels by an incredible 3.3 percent. In 2000, milk production gains are projected to be an astonishing 3.7 percent.



Many states have participated in the expansion but there are regional differences. The West continues to dominate milk production gains and the Southeast continues to lose significant amounts of milk. However, many other states are showing some new trends. Indiana is not a state that usually comes to mind when thinking about the U.S. dairy industry, but recently, Indiana has been making its own headlines with double digit increases in milk production. Indiana has long been one of USDA’s 20 milk producing states that the National Agricultural Statistics Service (NASS) surveys monthly for milk production estimates. Last year, Indiana ranked 17th in milk production with about 1.3 percent of the national share of milk production and a declining position. This year, Indiana’s share of milk production will have increased and they will have risen in rank by at least one and perhaps two spots—an amazing turn around for any state.

Indiana’s phenomenon is largely the result of four new dairy operations. These large farms are satellites or relocations of previous operations in the West. They are also an indication of a new trend in large farm expansions. The past two decades had seen California, New Mexico, Idaho and other western states being the growth centers for the industry. The industry has now shifted its attention to regions of the country where the cooler climate is beneficial for higher producing dairy cows and forages can be grown locally. There are many new dairy facilities being built from the Upper Midwest to the Northeast.

Demand for Dairy Products

It seems as though nothing can apply the brakes to the optimism of our current economy. We have been in a sustained economic boom with low unemployment and relatively low levels of inflation for more than a decade. As a result, consumer optimism is at an all time high. There are a couple of monthly surveys of consumer's confidence in the economy and these surveys have related well to dairy product demand. Dairy products are high-value food items and with more disposable income, consumers are likely to purchase more dairy items at the grocery store. However, the bigger factor for increased consumption of dairy products is probably consumption away from home. For example, a 1994 study by the National Dairy Promotion & Research Board indicated that only 31 percent of cheese is purchased at retail while 35 percent is purchased through food service organizations (restaurants) and 34 percent through food manufacturing (frozen dinners, etc.).

Restaurants realize that cheese sells their products. Cheese fits very well into our "on-the-go" lifestyle so it's not surprising that demand has shifted. In other words, we are willing to buy more cheese at the same price. It is also true that wholesale cheese prices are quite a bit lower this year than they were last year and food service establishments are responding to those lower prices. You may recall in 1997 that Pizza Hut was advertising three cheese and cheese in the crust pizzas. In 1998 when cheese prices hit record high levels, the CEO of Pizza Hut was advertising their new pizzas with "chunky vegetables". This year, with cheese prices at very low levels, Pizza Hut has found even new places to put cheese on a pizza—between two crusts. This new pizza contains a full pound of cheese. Last year, commercial disappearance of cheese was up more than 6 percent over 1998 levels. This year, the growth will be somewhat less but we are still posting very large increases in consumption.

The Conference Board's Consumer Confidence Index of Expectations is showing a projected strong confidence in the economy over the next year. If this continues, we can expect to see increases in demand for dairy products. Last year the commercial disappearance of all dairy products was up 3.1 percent. I don't expect quite as strong an increase for 2000 but, at a 2.6 percent increase, it will be well above a long-run average.



Prices

In 1999 milk production grew at 3.3 percent and commercial disappearance grew at 3.1 percent. Commercial stocks of dairy products grew to accommodate part of the discrepancy. This year, production will have grown by an estimated 3.7 percent while commercial disappearance grows at less than 3 percent. The relief valve for this kind of difference between supply and demand is price.

I have indicated that we have not seen class III prices as low as they were in 2000 since 1978. However, almost no producer actually receives the class III milk price. The minimum regulated price that must be received is a blended, or statistically uniform, price and voluntary premiums are often paid above the minimum. The all-milk price is estimated by NASS on a monthly basis. This price is meant to reflect the average price that plants pay to producers, or their cooperatives, inclusive of premiums. Nationally, we only have to look back to 1991 to see all-milk prices lower than what we have had this year. Most producers are receiving considerably greater prices than the class III minimum.

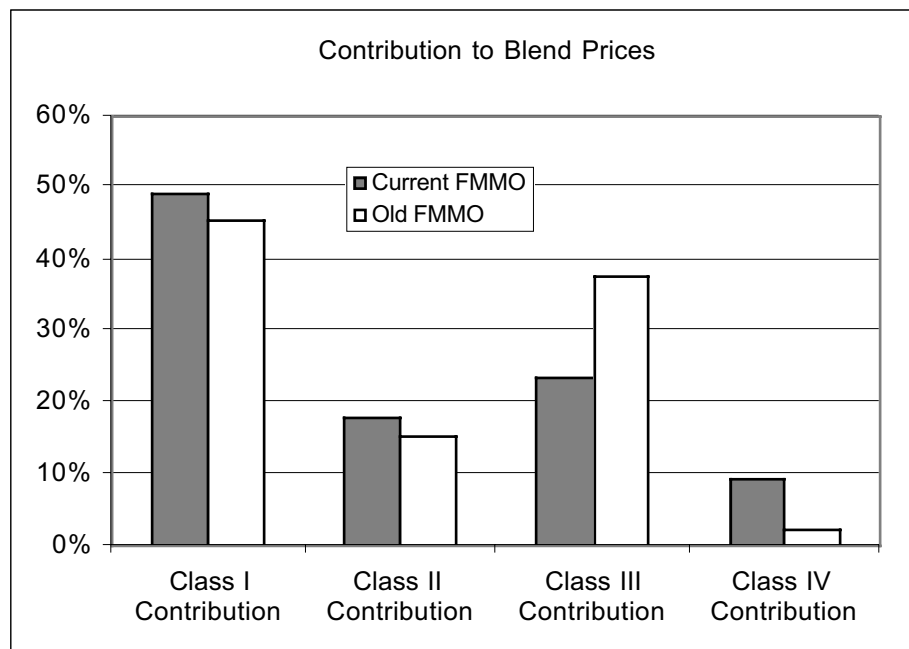
The federal order reforms, which were implemented in January of 2000, included new product price formulas for the calculation of class III (milk used to make cheese) and class IV (milk used to make butter and milk powders) prices. During 1999, the USDA was still using the old Basic Formula Price (BFP) as the class III milk price but they were also collecting the NASS cheese, butter and whey prices used in the new class III formulas. During 1999, there were some minor differences from month-to-month between the two class III prices but over the course of the year they averaged only a one cent per hundredweight difference. The new class III price is probably quite close to what the BFP would have been. The new class I formula is quite a different story.

The new class I formula is not calculated from the class III formula alone. The FMMO reforms use the higher of the skim values in class III or class IV, for the skim value in class I. This year, those prices have been quite far apart. It is unusual for the class IV price to be higher than the class III price, but in 2000, that has been the case in every month. The skim value in class III has averaged \$5.96 while the skim value in class IV has averaged \$7.72 and in December of 2000, the class IV value was \$3.64 higher. When 40-50 percent of your utilization is in class I, this can make quite a difference to the uniform price.

The new Northeast FMMO was created as a merger between the old New York-New Jersey order, the New England order, and the Mid-Atlantic order. Producers who used to ship milk under the old New York-New Jersey order also benefited from the merger by acquiring a higher class I utilization than they had before. The chart below shows the relative contribution to the blended price under the old (order #2) and new orders (order #1). Some of the contribution comes from changes in utilization and some comes from different class price relationships. The class I contribution has increased by 14 percent while the class III contribution has decreased by 19 percent.

Producers under the old New York-New Jersey order have struggled with other changes such as moving from farm to plant point pricing and multiple component pricing. The obvious change in the milk check from farm to plant point pricing was the increase in hauling charges. These were partially obscured in the old milk check with a 15 cent hauling credit from the federal order pool. All of

the cost of milk hauling is now shown on the check. Multiple component pricing has also led to greater differences between producers for the price of milk shipped. Some producers have gained substantially from the sale of high component milk while other have lost ground with lower butterfat and protein values.



Policy Issues

The biggest reason for the class IV price being greater than the class III price in 2000 has been the price support program. The price support program had been quite inactive for much of the 1990s and under the 1996 Farm Bill it was scheduled to be eradicated in 2000. The National Milk Producers Federation was successful in persuading congress to extend the program on a temporary basis and with the low prices of 2000, it once again began to purchase product.

The price support program operates by setting a price goal for manufacturing milk. The current goal is \$9.80 for 3.5 percent butterfat milk. The government does not buy any milk, but it does stand willing to purchase as much butter, nonfat dry milk and cheese as anyone wants to sell to them at announced prices. Those prices are calculated to be consistent with the \$9.80 price goal. That is: \$1.1220 per pound of cheese, \$1.0100 for nonfat dry milk and \$0.6680 for butter. One hundred pounds of milk can be made into cheese or it can be made into the joint products of butter and nonfat dry milk powder. The calculation of \$9.80 for milk into \$1.122 for cheese is straight forward but making the translation into butter and powder requires that you assign one of the values, say butter, and the other is a residual calculation. This relationship is know as the “tilt”. There are congressional guidelines that say that the tilt must be adjusted to minimize purchases by the government but changing the tilt is at the discretion of the Secretary of Agriculture.

Current market values for butter are more than a dollar above the support price while nonfat dry milk values are right at the support levels. The support for powder is setting the floor under that price.

The market values for butter and nonfat dry milk are yielding much higher class IV prices than are the market prices for cheese in class III. The government is buying no butter at this time and will have bought more than \$700 million in nonfat dry milk powder in the 2000 calendar year. If the government sought to minimize purchases, the tilt should be changed by elevating the support price for butter and lowering the purchase price for powder. This however is a politically sensitive move to be made in an election year because it would bring down the price of milk in many regions of the country, including the Northeast. There is speculation that the tilt will be changed after the first of the year.

Producers have also benefited from direct payments from the government. Early in 2000, producers received a disbursement of \$125 million in disaster payments. This money was distributed as a payment of about 13 cents per hundredweight on the first 2.6 million pounds of milk produced per farm. This year, a much larger appropriation of \$667 million is scheduled to be paid out either at the end of the year or shortly after the first of 2001. This payment will be nearly 65 cents per hundredweight on the first 3.9 million pounds of production. For all of agriculture, not just dairy, government support will be about 48 percent of net cash income on farms for the year 2000.

The next round of World Trade Organization talks have begun and agriculture will feature prominently in the discussions. It will be several years before there is any agreement but the U.S. position has been that it would like to see a reduction in the subsidy of dairy products. This position aligns well with Australia and New Zealand but is at odds with the European Union's position.

Discussions for the 2002 Farm Bill are also beginning. It is early yet to be able to know what the outcome will be, but many people are speculating that we may have a return to previous agricultural programs. There is a strong feeling by many agricultural groups that the Freedom to Farm legislation of the 1996 Farm Bill has not been successful. There will be another year and a half of positioning for the next farm bill.

Outlook and Summary

I am not as pessimistic as many other forecasters about the possibility of price recovery in 2001. Many producers are committed to expansion and will be undeterred in the face of the price levels that we have seen in 2000. However, not all producers wish to milk cows under the circumstances of these relatively low prices. Yet another group of producers will examine whether it is time to cull more marginal animals. We have already begun to see a slow down in the rate of increase in cow numbers and soon we will see more normal declines. Most producers are also questioning the level of use of rbST with the lower milk prices of 2000. It is likely that fewer eligible animals will be injected in the coming year with the prospect of lower rates of gain in milk per cow.

We don't have to lose milk production for prices to rebound, we only need to increase supplies at a slower rate. If demand for dairy products remains strong, I am confident that we will work down some of the commercial inventories that have kept downward pressure on milk prices. My own forecast for milk supplies is that they will grow at a more normal rate of little more than 1 percent. I am also forecasting that commercial disappearance will grow at just less than 3 percent. By the second half of the year, processors will be feeling as though they need to send signals to producers

for more milk. Tightening inventories of cheese and other dairy products will bring higher product prices and those will finally bring higher milk prices.

The 1990s have shown us what life without an aggressive price support program is like—increased price volatility. The price support program may be extended for several more years but I think that longer term, it will be difficult to justify this type of safety net with a more liberal World Trade Organization position. Volatile milk prices mean years of very high milk prices, like 1998, will be followed by years of low milk prices, like 2000. I expect 2001 to be a year of recovery with prices beginning to build in the latter half of the year. My own forecast is that blend prices may only average about 50 cents higher next year although I do see prices in the late fall being quite a bit higher than they are now. If the past decade has taught us anything it is that when the market breaks, it may jump to much higher levels than even I have projected.

National Farm Prices for Milk; CCC Purchase, Wholesale, and Retail Prices for Cheddar Cheese, Butter, and Nonfat Dry Milk; and Selected Retail Price Indices, 1991–2000.

	1991	1992	1993	1994	1995	1996	1997	1998	1999 ^a	2000
Farm Milk (\$/cwt.)										
All Milk (ave. fat)	12.27	13.15	12.84	13.01	12.78	14.75	13.34	15.50	14.36	12.32
Class III (3.5%)	11.05	11.88	11.80	12.03	11.83	13.39	12.05	14.20	12.43	9.78
Support (3.5%)	9.90	9.96	9.98	9.99	9.99	10.25	10.10	9.95	9.80	9.80
Milk Price: Concentrate Value	1.58	1.69	1.65	1.62	1.63	1.60	1.54	1.99	2.03	1.78
Assessment	0.05	0.13	0.15	0.17	0.15	0.03 ^c	0.00	0.00	0.00	0.00
Cheddar Cheese, Blocks (\$/lb.)										
CCC Purchase	1.110	1.116	1.119	1.120	1.120	1.145	1.130	1.115	1.100	1.122
Wholesale, NCE/Chicago Mercantile Exchange	1.204	1.282	1.286	1.287	1.304	1.466	1.308	1.569	1.404	1.149
Butter (\$/lb.)										
CCC Purchase, Grade A or higher, Chicago	0.983	0.807	0.708	0.668	0.770	0.650	0.650	0.650	0.650	0.668
Wholesale, Gr. AA, Chicago Merc. Exchange	1.015	0.844	0.771	0.709	0.814	1.078	1.159	1.769	1.240	1.166
Nonfat Dry Milk										
CCC Purchase, Unfortified (\$/lb.)	0.850	0.948	1.002	1.034	1.034	1.065	1.047	1.028	1.010	1.010
Wholesale, Central States	0.942	1.092	1.120	1.079	1.086	1.222	1.100	*1.069	1.035	1.011
Retail Price Indices (1982–84=100.0)										
Whole Milk	122.4	126.4	127.9	131.2	132.3	142.4	141.9	147.3	149.7	139.3
Cheese	132.8	135.5	135.3	136.4	137.9	144.7	147.7	152.3	162.6	162.9
All Dairy Products	125.1	128.5	129.4	131.7	132.8	142.1	145.5	150.8	159.6	160.4
All Food	136.3	137.9	140.9	144.3	148.4	153.3	157.3	160.7	164.1	167.9
All Consumer Prices	136.2	140.3	144.5	148.2	152.4	156.9	160.5	163.0	166.6	172.4

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.

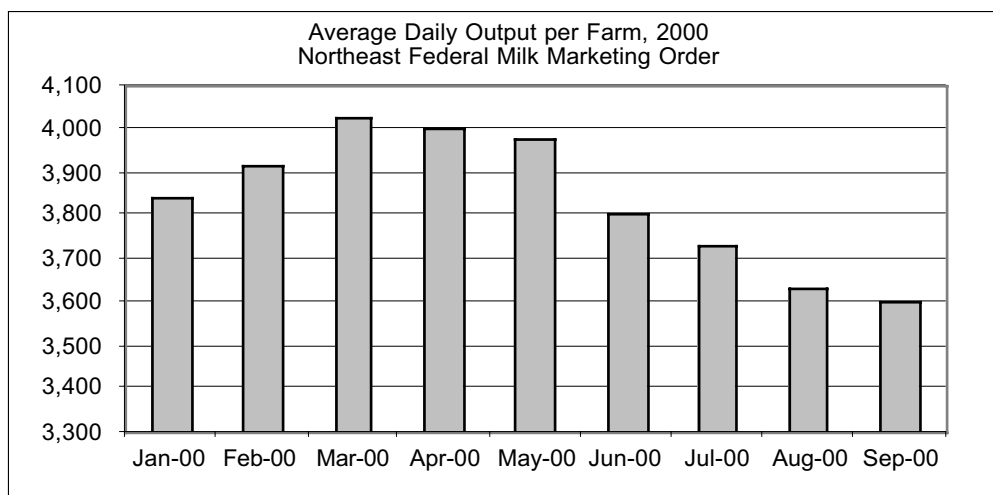
^c The Federal Agriculture Improvement and Reform Act of 1996 terminated the authority to assess marketings of milk on and after May 1, 1996.

The Northeast Dairy Situation and Outlook

Number of Producers by State Northeast Federal Milk Marketing Order									
State	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00
CT	229	222	222	216	218	217	213	215	209
DE	107	90	71	71	74	70	69	68	67
ME	406	410	410	403	402	399	399	397	397
MD	707	695	689	688	681	674	694	694	690
MA	268	266	264	265	263	259	254	251	249
NH	169	168	169	168	168	168	167	165	166
NJ	168	164	175	173	166	164	157	158	150
NY	7,112	6,864	7,094	7,126	7,024	6,820	6,779	6,625	6,607
PA	6,936	7,068	6,617	6,550	6,495	6,607	6,793	6,706	6,718
RI	27	27	27	26	26	26	26	26	26
VT	1,595	1,586	1,578	1,575	1,567	1,549	1,543	1,538	1,537
VA	247	325	138	134	66	68	65	60	97
WV	38	38	31	38	37	33	37	36	35
All Other	0	0	0	0	0	0	0	61	29
Total	18,009	17,923	17,485	17,433	17,187	17,054	17,196	17,000	16,977

Source: Northeast Monthly Federal Milk Order Market Statistics .

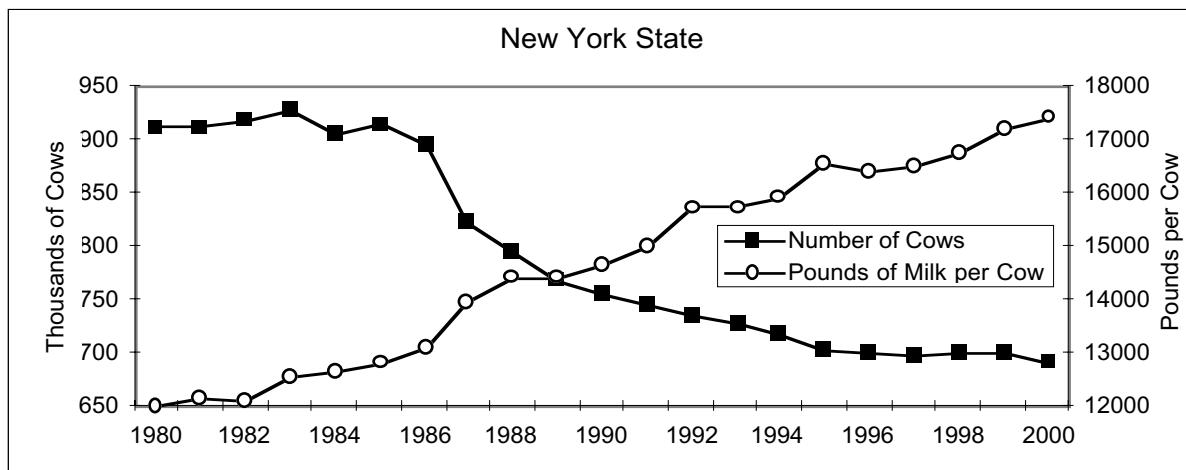
In January, 2000, the New England, Middle Atlantic, and New York-New Jersey federal milk marketing orders were merged into a single new Northeast federal milk marketing order. New York state has producers who are pooled on other federal and state orders, most notably the Western New York State order and the new Mideast federal order. This year, statistics from the new Northeast order are given. The table above shows an annual farm loss of nearly 9 percent. We should be careful with this kind of interpretation. Milk has been moving and is being pooled on many different orders from the Northeast and is not necessarily indicative of actual farm loss. The seasonal pattern of production is shown below in the average daily deliveries to handlers pooled under the Northeast order.



Receipts of Producer Milk by State Northeast Federal Milk Marketing Order									
State	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00
CT	41,854	39,487	42,721	39,411	40,041	37,461	37,530	36,506	34,458
DE	15,294	14,814	11,357	10,885	11,720	9,359	8,668	8,424	8,207
ME	43,968	40,576	44,184	42,613	44,910	43,594	43,479	42,640	40,746
MD	97,870	92,076	109,275	104,754	102,769	87,043	92,175	88,407	83,290
MA	30,967	29,630	31,912	31,611	31,052	29,522	29,607	28,543	26,848
NH	26,018	24,712	26,858	25,735	26,549	25,218	25,070	24,238	23,376
NJ	19,775	18,509	21,502	20,494	20,267	18,389	18,436	17,680	16,855
NY	918,224	871,321	925,926	874,598	905,132	838,613	850,436	810,808	788,906
PA	679,143	652,929	710,199	682,516	683,986	620,300	641,607	607,928	576,363
RI	2,238	2,041	2,293	2,185	2,201	2,035	2,065	1,869	1,806
VT	226,964	213,133	230,825	224,364	233,490	223,887	225,036	221,664	212,898
VA	37,734	30,424	21,125	26,619	9,932	9,426	8,844	8,812	11,701
WV	5,537	4,304	3,796	4,398	4,605	3,283	4,862	3,891	4,474
All Other	0	0	0	0	0	0	0	15,467	2,663
Total	2,145,586	2,033,956	2,181,973	2,090,183	2,116,654	1,948,130	1,987,815	1,916,877	1,832,591

Source: Northeast Monthly Federal Milk Order Market Statistics .

Spurred by strong milk prices and relatively low feed costs in 1998 and 1999, producers have responded with greater milk production. U.S. milk production will be up more than 3.5 percent in 2000 from year earlier levels. New York is bucking that trend with milk production that is little different than a year ago. Although less than U.S. response, the surrounding states of Pennsylvania and Vermont have seen greater increases in milk production than New York. Cool weather and a wet spring and summer have yielded poor quality forages in the state. This year New York also seems to be losing cows at a pace that was more like the earlier years of the 1990s. Cow numbers were quite stable to increasing from 1997-1999.

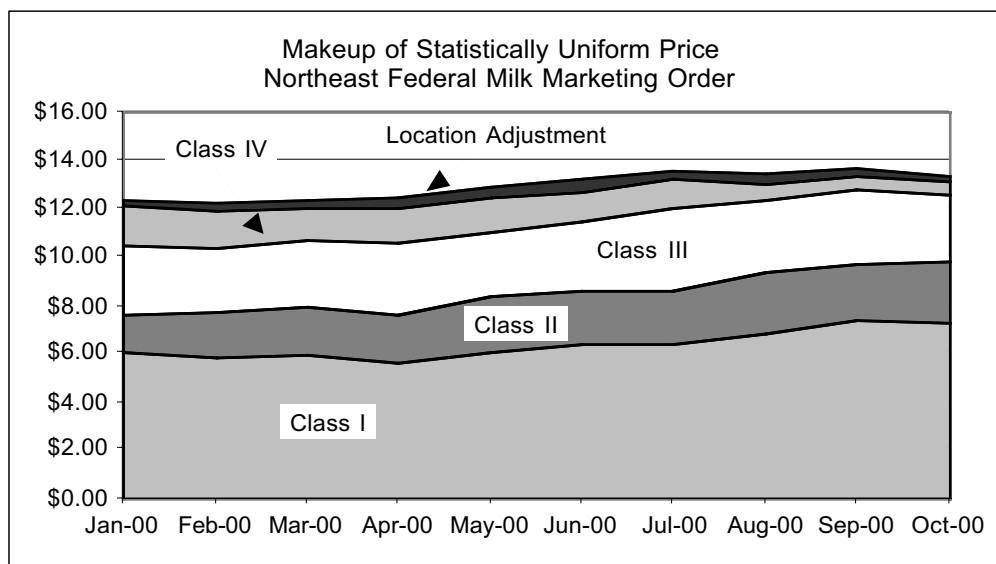


Source: Milk Production, US Department of Agriculture.

Class Utilization and Prices Northeast Federal Milk Marketing Order										
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Class I Utilization	42.2%	41.3%	42.0%	39.0%	41.0%	42.1%	40.5%	45.2%	49.3%	48.5%
Class II Utilization	14.7%	17.1%	17.6%	17.4%	18.3%	17.8%	17.9%	19.3%	17.8%	19.7%
Class III Utilization	27.4%	27.4%	27.9%	30.2%	29.0%	30.1%	31.8%	30.4%	28.9%	27.3%
Class IV Utilization	15.7%	14.1%	12.5%	13.4%	11.8%	9.9%	9.8%	5.1%	4.1%	4.4%
Class I Price	\$14.15	\$13.96	\$14.09	\$14.18	\$14.73	\$14.95	\$15.71	\$15.20	\$15.09	\$15.14
Class II Price	\$11.43	\$11.51	\$11.71	\$12.10	\$12.63	\$13.08	\$12.58	\$12.56	\$12.58	\$12.54
Class III Price	\$10.05	\$9.54	\$9.54	\$9.41	\$9.37	\$9.46	\$10.66	\$10.13	\$10.76	\$10.02
Class IV Price	\$10.73	\$10.80	\$11.00	\$11.38	\$11.91	\$12.38	\$11.87	\$11.87	\$11.94	\$11.81

Source: Northeast Monthly Federal Milk Order Market Statistics .

The class utilization and prices are quite straight forward. The contribution of the various classes to the uniform price below is just a simple multiplication of the class price times the percent utilization in the class in any given month. The other value in the graphic below I have called "location adjustment" It basically incorporates the added value from the higher class I differential collected from fluid plants located in the metropolitan area less the lower value of the zoned differential paid to producers for shipping milk to plants located farther away from the metropolitan area. This extra money is returned to the pool and paid to producers in the producer price differential.



MILK PRICE PROJECTIONS*			
Northeast Federal Order Blend Price			
3.5 Percent, Suffolk County, Massachusetts			
Last Quarter 2000-2001			
Month	1999	2000	Difference
(dollars per hundredweight)			
October	16.09	13.32 ^a	-2.77
November	13.75	13.44 ^a	-0.31
December	12.69	13.24 ^a	0.55
<i>Fourth Quarter Average</i>	14.18	13.33 ^a	-0.84
Annual Average	14.74	13.01	-1.73
Month	2000	2001 ^a	Difference
(dollars per hundredweight)			
January	12.35	12.85	0.50
February	12.21	12.72	0.51
March	12.39	12.69	0.30
<i>First Quarter Average</i>	12.32	12.75	0.44
April	12.46	12.83	0.37
May	12.90	12.96	0.06
June	13.25	12.99	-0.26
<i>Second Quarter Average</i>	12.87	12.93	0.06
July	13.52	13.34	-0.18
August	13.39	13.71	0.32
September	13.63	14.09	0.46
<i>Third Quarter Average</i>	13.51	13.71	0.20
October	13.32	14.35	1.03
November	13.44 ^a	14.75	1.31
December	13.24 ^a	14.56	1.32
<i>Fourth Quarter Average</i>	13.33 ^a	14.55	1.22
Annual Average	13.01^a	13.49^a	0.48

* Totals may not add due to rounding.

^a Projected.

Chapter 8. Dairy -- Farm Management

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Herd Size Comparisons

Data from the 314 New York dairy farms that participated in the Dairy Farm Business Summary (DFBS) Project in 1999 have been sorted into nine herd size categories and averages for the farms in each category are presented in Tables 8-1 and 8-2. Note that after the less than 50 cow category, the herd size categories increase by 25 cows up to 100 cows, by 50 cows up to 200 cows, by 100 cows up to 400 cows, and by 200 cows up to 600 cows.

As herd size increases, the average profitability generally increases (Table 8-1). Net farm income without appreciation averaged \$21,114 per farm for the less than 50 cow farms and \$639,672 per farm for those with 600 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. Farms with 600 and over cows averaged \$649 net farm income per cow while the 100 to 199 cow dairy farms average \$466 net farm income per cow. The 200 to 299 herd size category had the second highest net farm income per cow at \$580. Other factors that affect profitability and their relationship to the size classifications are shown in Table 8-2.

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 50	32	40	\$21,114	\$528	\$1,363	-0.9%
50 to 74	56	61	31,904	523	6,030	0.9%
75 to 99	42	86	47,042	547	12,447	3.2%
100 to 149	52	125	58,229	466	12,853	3.3%
150 to 199	25	176	82,057	466	23,447	5.0%
200 to 299	37	245	142,189	580	49,714	8.3%
300 to 399	22	361	179,973	499	63,828	9.1%
400 to 599	27	491	229,767	468	71,521	8.4%
600 & over	21	986	639,672	649	200,411	12.0%

Net farm income per cow increased as economies were attained. Farms with over 200 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 farms with 600 and more cows averaged more milk sold per cow than any other size category (Table 8-2). With 23,517 pounds of milk sold per cow, farms in the largest herd size group averaged 15 percent more milk output per cow than the average of all herds in the summary with less than 600 cows.

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

Publications reporting Dairy Farm Business Summary data for New York, 6 regions of the state, large herds, small herds, grazing farms, and farms that rent are available from Faye Butts (607-254-7412, fsb1@cornell.edu).

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) and supplementing with bST are herd management practices 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 130 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 10 percent of the herds milking more often than 2X, the 150-199 cow herds reported 40 percent, 200-299 cow herds reported 35 percent, 300-399 cow herds reported 73 percent, 400-599 cow herds reported 93 percent, and the 600 cow and larger herds reported 90 percent exceeding the 2X milking frequency.

TABLE 8-2. COWS PER FARM AND RELATED FARM FACTORS
314 New York Dairy Farms, 1999

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 50	40	16,588	3,637	3.8	6.3	\$8,805	\$9.97	\$18.36
50 to 74	61	17,661	4,653	3.5	7.9	7,947	10.42	16.68
75 to 99	86	18,995	5,497	3.4	8.3	7,577	10.62	15.81
100 to 149	125	19,173	6,466	2.9	7.2	6,991	11.26	15.70
150 to 199	176	20,008	7,167	2.8	8.1	7,121	11.36	15.16
200 to 299	245	21,067	8,320	2.4	7.9	6,195	11.16	14.29
300 to 399	361	21,437	9,016	2.1	7.5	5,585	11.33	13.88
400 to 599	491	22,145	9,519	2.0	8.0	6,308	11.66	14.30
600 & over	986	23,517	11,187	1.8	8.1	5,855	11.14	13.29

Bovine somatotropin (bST), was used to a greater extent on the large herd farms. bST was used sometime during 1999 on 25 percent of the herds with less than 100 cows, 63 percent of the farms with 100 to 299 cows and on 91 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 861,000 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 460,000 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 1.8 tillable acres per cow, and the most efficient use of farm capital with an average investment of \$5,855 per cow.

The last column in Table 8-2 may be the most important in explaining why profits were significantly higher on the 600 plus cow farms. The 21 farms with 600 and more cows held their average total costs of producing milk to \$13.29 per hundredweight, \$1.51 below the \$14.80 average for the remaining 293 dairy farms. The lower average costs of production plus a similar milk price gave the managers of the 600 plus cow dairy farms profit margins (milk price less total cost of producing milk) that averaged \$1.73 per hundredweight above the average of the other 293 DFBS farms.

Ten-Year Comparisons

The total cost of producing milk on DFBS farms has decreased \$1.14 per cwt. over the past 10 years (Table 8-3). In the intervening years, total cost of production had exhibited a downward trend to 1995, increased in 1996, and has decreased since 1996. Over the past 10 years milk sold per cow has increased 21 percent and cows per worker by 22 percent on DFBS farms (Table 8-4). Farm net worth has increased significantly, while percent equity has been stable to declining.

**TABLE 8-3. TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1990 to 1999**

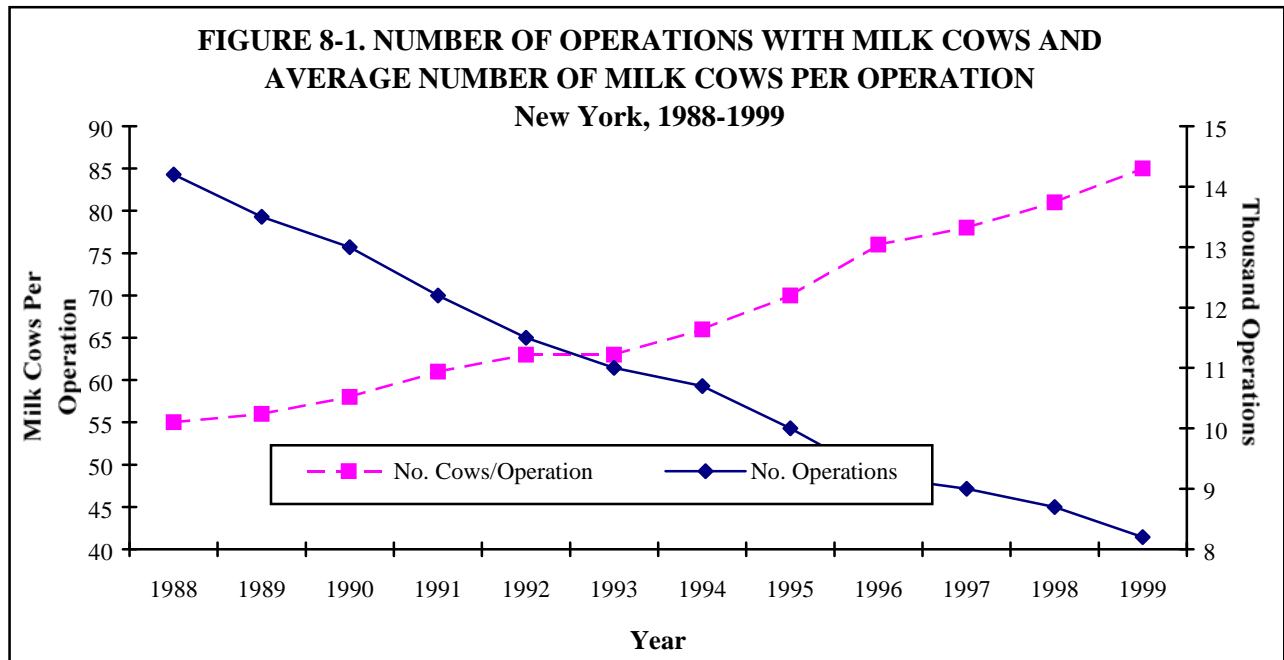
Item	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Operating Expenses										
Hired labor	\$ 1.77	\$ 1.74	\$ 1.80	\$ 1.86	\$ 1.80	\$ 1.78	\$ 1.89	\$ 1.97	\$ 2.06	\$ 2.14
Purchased feed	4.28	3.88	3.92	3.85	3.89	3.71	4.73	4.63	4.18	3.96
Machinery repair, vehicle expense & rent	1.11	.93	.97	.93	.92	.85	1.02	.94	1.12	1.18
Fuel, oil & grease	.41	.37	.35	.34	.31	.27	.31	.28	.25	.24
Replacement livestock	.20	.15	.21	.17	.21	.15	.19	.18	.24	.24
Breeding fees	.19	.18	.18	.19	.17	.15	.15	.15	.16	.17
Veterinary & medicine	.32	.33	.35	.37	.40	.39	.42	.41	.45	.47
Milk marketing	.53	.58	.63	.64	.67	.70	.59	.52	.53	.49
Other dairy expenses	.68	.65	.70	.72	.88	.92	.99	1.05	1.09	1.13
Lime & fertilizer	.50	.40	.37	.36	.33	.31	.32	.33	.35	.35
Seeds & plants	.22	.20	.21	.20	.19	.19	.20	.21	.22	.20
Spray & other crop expense	.22	.20	.21	.20	.20	.20	.21	.23	.24	.24
Land, building & fence repair	.32	.19	.24	.21	.21	.16	.23	.19	.27	.27
Taxes	.37	.38	.35	.34	.29	.27	.26	.23	.21	.21
Insurance	.24	.24	.22	.20	.18	.17	.16	.16	.16	.16
Utilities (farm share)	.39	.39	.38	.39	.38	.38	.39	.35	.32	.31
Interest paid	1.05	1.07	.88	.80	.81	.94	.91	.90	.83	.83
Misc. (including rent)	.47	.43	.44	.41	.40	.40	.41	.38	.41	.44
Total Operating Expenses	\$13.27	\$12.30	\$12.41	\$12.18	\$12.24	\$11.94	\$13.40	\$13.12	\$13.15	\$13.02
Less: Nonmilk cash receipts	1.75	1.73	1.67	1.65	1.30	1.15	1.07	1.14	1.18	1.44
Increase in grown feed & supplies	.26	.04	.23	.13	.25	.14	.15	.07	.25	.26
Increase in livestock	.15	.18	.08	.22	.21	.25	.18	.15	.22	.36
OPERATING COST OF MILK PRODUCTION	\$11.11	\$10.35	\$10.43	\$10.18	\$10.47	\$10.40	\$12.00	\$11.76	\$11.50	\$10.96
Overhead Expenses										
Depreciation: machinery & buildings	\$ 1.35	\$ 1.28	\$ 1.19	\$ 1.17	\$ 1.13	\$ 1.07	\$ 1.04	\$ 0.95	\$ 1.08	\$ 1.14
Unpaid labor	.19	.18	.16	.15	.12	.12	.13	.13	.11	.11
Operator(s) labor ^a	1.10	1.06	.99	1.00	.86	.92	.88	.79	.74	.80
Operator(s) management (5% of cash receipts)	.85	.73	.76	.74	.73	.70	.80	.73	.82	.83
Interest on farm equity capital (5%)	1.24	1.20	1.11	1.11	1.00	.94	.94	.87	.85	.86
Total Overhead Expenses	\$ 4.73	\$ 4.45	\$ 4.21	\$ 4.17	\$ 3.84	\$ 3.75	\$ 3.79	\$ 3.47	\$ 3.60	\$ 3.74
TOTAL COST OF MILK PRODUCTION	\$15.84	\$14.80	\$14.64	\$14.35	\$14.31	\$14.15	\$15.79	\$15.23	\$15.10	\$14.70
AVERAGE FARM PRICE OF MILK	\$14.93	\$12.95	\$13.58	\$13.14	\$13.44	\$13.03	\$14.98	\$13.65	\$15.60	\$14.91
Return per cwt. to operator labor, capital & mgmt.	\$ 2.28	\$ 1.14	\$ 1.80	\$ 1.64	\$ 1.72	\$ 1.44	\$ 1.81	\$ 0.81	\$ 2.91	\$ 2.70
Rate of return on farm equity capital	1.3%	-2.7%	0.2%	-0.4%	0.6%	-1.0%	0.7%	-4.1%	8.0%	6.2%

^a1990 = \$1,250/month, 1991 = \$1,300/month, 1992 = \$1,350/month, 1993 = \$1,400/month, 1994 and 1995 = \$1,450/month, 1996 = \$1,500/month, 1997 = \$1,550/month, 1998 = \$1,600/month, and 1999 = \$1,800/month of operator labor.

**TABLE 8-4. TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1990 to 1999**

Item	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number of farms	395	407	357	343	321	321	300	253	305	314
Cropping Program										
Total tillable acres	325	330	346	351	392	399	415	462	497	516
Tillable acres rented	121	124	135	135	159	166	183	207	232	234
Hay crop acres	166	169	171	182	195	197	198	219	239	248
Corn silage acres	82	88	98	96	110	117	120	156	175	186
Hay crop, tons DM/acre	2.7	2.4	2.8	2.7	3.0	2.8	2.8	2.5	3.1	2.9
Corn silage, tons/acre	14.4	13.7	14.5	14.9	16.4	15.6	15.9	16.1	18.0	16.3
Fert. & lime exp./tillable acre	\$29	\$25	\$25	\$25	\$25	\$25	\$26	\$28	\$31	\$32
Machinery cost/cow	\$483	\$438	\$444	\$430	\$438	\$402	\$450	\$429	\$471	\$502
Dairy Analysis										
Number of cows	107	111	123	130	151	160	167	190	210	224
Number of heifers	87	92	96	100	116	121	124	139	155	164
Milk sold, cwt.	19,005	20,060	23,130	24,448	30,335	32,362	33,504	39,309	43,954	47,932
Milk sold/cow, lbs.	17,720	18,027	18,789	18,858	20,091	20,269	20,113	20,651	20,900	21,439
Purchased dairy feed/cwt. milk	\$4.27	\$3.87	\$3.91	\$3.85	\$3.89	\$3.70	\$4.73	\$4.63	\$4.18	\$3.96
Purc. grain & conc. as % of milk receipts	28%	29%	28%	29%	28%	27%	30%	33%	26%	25%
Purc. feed & crop exp/cwt. milk	\$5.21	\$4.67	\$4.70	\$4.61	\$4.61	\$4.39	\$5.46	\$5.39	\$5.00	\$4.75
Capital Efficiency										
Farm capital/cow	\$6,556	\$6,688	\$6,587	\$6,462	\$6,398	\$6,284	\$6,218	\$6,196	\$6,161	\$6,368
Real estate/cow	\$2,977	\$3,063	\$3,015	\$2,932	\$2,859	\$2,763	\$2,701	\$2,650	\$2,537	\$2,562
Mach. invest./cow	\$1,233	\$1,267	\$1,203	\$1,165	\$1,150	\$1,098	\$1,107	\$1,108	\$1,118	\$1,163
Asset turnover ratio	.48	.43	.47	.46	.50	.49	.55	.52	0.61	0.59
Labor Efficiency										
Worker equivalent	3.37	3.38	3.60	3.68	4.02	4.40	4.48	5.01	5.35	5.71
Operator/manager equivalent	1.39	1.37	1.41	1.45	1.49	1.56	1.56	1.60	1.62	1.76
Milk sold/worker, lbs.	563,349	593,297	641,893	664,868	755,178	736,269	747,861	784,604	821,565	839,432
Cows/worker	32	33	34	35	38	36	37	38	39	39
Labor cost/cow	\$541	\$538	\$552	\$568	\$558	\$570	\$582	\$598	\$609	\$653
Profitability & Financial Analysis										
Labor & mgmt. income/operator	\$14,328	\$-955	\$11,254	\$9,000	\$14,789	\$10,346	\$18,651	\$-1,424	\$55,917	\$42,942
Farm net worth, end year	\$471,322	\$480,131	\$515,215	\$542,126	\$608,749	\$624,261	\$648,186	\$685,665	\$798,297	\$865,626
Percent equity	66%	64%	64%	65%	63%	61%	61%	57%	59%	58%

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 chart above. There were 5,300 less milk cow operations in 1999 than there were in 1989. The average number of milk cows per operation has increased by 30 cows, or 55 percent over the same period. On January 1, 2000, 31 percent of the total milk cows were in herds with 50-99 head, 57 percent were in herds with over 100 milk cows, and 18 percent were in herds with less than 50 head.

MILK COW OPERATIONS BY HERD SIZE & TOTAL, 1988-1999 (Number of Milk Cows in Herd)							MILK COWS ON FARMS, JAN. 1 BY HERD SIZE & TOTAL, 1989-2000 (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)	(Number of Operations)	(Number of Operations)	(Number of Operations)	(Number of Operations)	(Number of Operations)	(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)			(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)	(Thousand Head)		
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	22	102	285	190	131						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	189	154						700
1996	1,800	2,000	3,700	1,300	400						9,200	1997	18	73	245	189	175						700
1997	1,700	1,900	3,600	1,300	500						9,000	1998	18	73	238	182	189						700
1998	1,600	1,800	3,500	1,300	500						8,700	1999	14	70	218	189	211						702
1999	1,400	1,600	3,200	1,400	600						8,200	2000	14	70	217	189	210						700

^a100 plus category prior to 1993.
Source: NYASS, New York Agricultural Statistics, 1998-1999.

**TABLE 8-6. COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 71 New York Dairy Farms, 1990 - 1999**

Selected Factors	1990	1991	1992	1993
Milk receipts per cwt. milk	\$14.87	\$12.93	\$13.53	\$13.20
<u>Size of Business</u>				
Average number of cows	139	148	168	183
Average number of heifers	120	127	129	140
Milk sold, cwt.	25,551	27,592	32,405	35,607
Worker equivalent	4.02	4.25	4.55	4.74
Total tillable acres	404	418	434	450
<u>Rates of Production</u>				
Milk sold per cow, lbs.	18,410	18,700	19,344	19,426
Hay DM per acre, tons	2.8	2.3	2.7	2.7
Corn silage per acre, tons	13	13	13	15
<u>Labor Efficiency</u>				
Cows per worker	35	35	37	39
Milk sold per worker, lbs.	636,168	649,574	712,907	751,203
<u>Cost Control</u>				
Grain & concn. purchased as % of milk sales	28%	29%	28%	28%
Dairy feed & crop expense per cwt. milk	\$5.25	\$4.73	\$4.80	\$4.68
Operating cost of producing cwt. milk	\$10.95	\$9.94	\$10.06	\$9.84
Total cost of producing cwt. milk	\$16.51	\$15.18	\$15.14	\$14.73
Hired labor cost per cwt.	\$1.49	\$1.37	\$1.38	\$1.47
Interest paid per cwt.	\$0.94	\$0.97	\$0.82	\$0.78
Labor & machinery costs per cow	\$1,071	\$1,029	\$1,053	\$1,065
Replacement livestock expense	\$3,213	\$2,979	\$4,501	\$5,801
Expansion livestock expense	\$8,125	\$15,765	\$19,591	\$13,567
<u>Capital Efficiency</u>				
Farm capital per cow	\$7,270	\$7,394	\$7,484	\$7,500
Machinery & equipment per cow	\$1,437	\$1,472	\$1,468	\$1,478
Real estate per cow	\$3,307	\$3,442	\$3,559	\$3,539
Livestock investment per cow	\$1,518	\$1,526	\$1,519	\$1,537
Asset turnover ratio	0.48	0.43	0.45	0.44
<u>Profitability</u>				
Net farm income without appreciation	\$66,802	\$38,204	\$70,431	\$67,218
Net farm income with appreciation	\$81,907	\$58,764	\$91,584	\$86,210
Labor & management income per operator/manager	\$22,650	\$-457	\$26,982	\$19,654
Rate return on:				
Equity capital with appreciation	3.6%	0.2%	3.1%	2.5%
All capital with appreciation	5.1%	2.9%	4.2%	3.8%
All capital without appreciation	3.7%	0.8%	2.3%	2.2%
<u>Financial Summary, End Year</u>				
Farm net worth	\$621,880	\$632,215	\$722,813	\$743,866
Change in net worth with appreciation	\$32,231	\$7,461	\$50,707	\$33,816
Debt to asset ratio	0.31	0.33	0.30	0.32
Farm debt per cow	\$2,240	\$2,295	\$2,167	\$2,192

Farms participating in the DFBS each of the last 10 years have increased size of business, labor efficiency and milk sold per cow (Table 8-6). While net farm income has generally increased, rates of return on capital have not.

**TABLE 8-6. COMPARISON OF FARM BUSINESS SUMMARY DATA (Continued)
Same 71 New York Dairy Farms, 1990 - 1999**

1994	1995	1996	1997	1998	1999
\$13.50	\$13.06	\$14.96	\$13.70	\$15.70	\$15.07
198	215	229	240	252	262
154	167	176	189	202	209
41,179	45,127	48,774	52,329	54,649	58,918
5.09	5.52	5.71	5.93	6.19	6.51
471	498	527	547	565	596
20,812	20,985	21,264	21,805	22,046	22,470
3.0	2.6	2.7	2.4	2.9	2.7
16	14	14	14	16	14
39	39	40	40	41	40
809,018	817,518	854,186	882,445	882,859	905,038
27%	27%	29%	31%	24%	24%
\$4.51	\$4.37	\$5.27	\$5.29	\$4.97	\$4.60
\$9.89	\$10.20	\$11.13	\$11.32	\$10.74	\$10.36
\$14.68	\$14.74	\$15.80	\$15.83	\$15.31	\$15.10
\$1.42	\$1.42	\$1.47	\$1.46	\$1.48	\$1.53
\$0.74	\$0.82	\$0.80	\$0.83	\$0.79	\$0.68
\$1,090	\$1,069	\$1,127	\$1,109	\$1,145	\$1,247
\$7,063	\$3,972	\$4,967	\$5,762	\$10,287	\$9,569
\$13,053	\$11,342	\$9,128	\$10,683	\$10,734	\$13,953
\$7,448	\$7,310	\$7,282	\$7,372	\$7,355	\$7,516
\$1,470	\$1,445	\$1,440	\$1,468	\$1,480	\$1,546
\$3,461	\$3,397	\$3,366	\$3,405	\$3,343	\$3,286
\$1,563	\$1,530	\$1,508	\$1,510	\$1,510	\$1,560
0.46	0.43	0.49	0.43	0.53	0.51
\$87,750	\$79,332	\$111,602	\$59,035	\$176,768	\$172,154
\$106,802	\$91,236	\$125,830	\$65,931	\$204,958	\$200,446
\$31,199	\$23,562	\$47,125	\$2,255	\$73,866	\$75,832
3.9%	0.2%	5.0%	-2.3%	11.8%	9.0%
4.5%	2.7%	5.6%	1.2%	9.6%	7.8%
3.2%	2.2%	4.4%	0.9%	7.8%	6.2%
\$794,049	\$832,489	\$911,420	\$902,044	\$1,034,265	\$1,139,916
\$52,937	\$41,192	\$72,321	\$-9,094	\$129,918	\$107,836
0.31	0.32	0.30	0.33	0.30	0.28
\$2,165	\$2,141	\$2,102	\$2,212	\$2,039	\$2,017

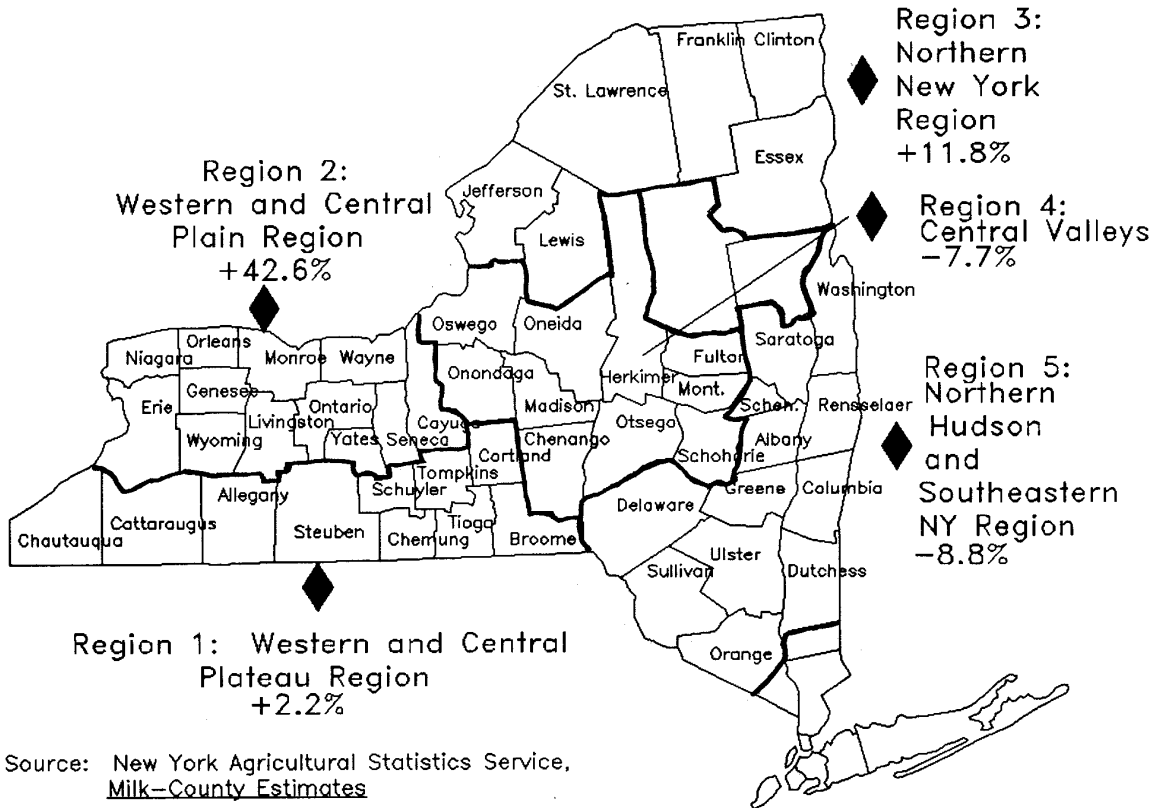
Debt to asset ratio and debt per cow have remained stable with farm net worth almost doubled. During this time, crop yields have fluctuated, largely due to weather. Purchased grain and concentrate as a percent of milk sales has varied only from 24 to 31 percent, with the high being in 1997 and the low in 1998 and 1999.

TABLE 8-7. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
314 New York Dairy Farms, 1999

Item	Western & Central Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	No. Hudson & South- eastern New York
Number of farms	63	95	33	37	86
ACCRUAL EXPENSES					
Hired labor	\$57,843	\$215,846	\$74,046	\$28,022	\$52,366
Feed	123,496	356,812	167,120	70,167	114,528
Machinery	44,784	117,259	57,161	31,391	49,928
Livestock	63,685	233,584	87,689	48,206	78,702
Crops	24,810	66,630	33,555	16,000	26,509
Real estate	28,053	60,126	28,666	22,056	22,908
Other	48,524	129,597	64,525	31,285	40,767
Total Operating Expenses	<u>\$391,193</u>	<u>\$1,179,854</u>	<u>\$512,761</u>	<u>\$247,130</u>	<u>\$385,710</u>
Expansion livestock	5,769	27,121	16,910	319	3,962
Machinery depreciation	27,847	51,767	36,136	17,663	16,272
Building depreciation	19,078	43,417	23,297	7,998	9,340
Total Accrual Expenses	<u>\$443,887</u>	<u>\$1,302,159</u>	<u>\$589,104</u>	<u>\$273,110</u>	<u>\$415,284</u>
ACCRUAL RECEIPTS					
Milk sales	\$457,482	\$1,327,116	\$637,366	\$295,303	\$436,111
Livestock	33,640	97,983	49,874	21,241	28,120
Crops	3,726	36,837	15,367	5,446	9,183
All other	20,521	52,467	20,811	15,096	22,201
Total Accrual Receipts	<u>\$515,369</u>	<u>\$1,514,403</u>	<u>\$723,419</u>	<u>\$337,086</u>	<u>\$495,615</u>
PROFITABILITY ANALYSIS					
Net farm income (w/o appreciation)	\$71,482	\$212,244	\$134,315	\$63,976	\$80,331
Net farm income (w/ appreciation)	\$94,951	\$266,395	\$164,263	\$78,432	\$91,366
Labor & management income	\$34,075	\$143,517	\$94,260	\$34,929	\$41,554
Number of operators	1.50	1.78	1.54	1.78	1.65
Labor & mgmt. income/operator	\$22,717	\$80,628	\$61,208	\$19,623	\$25,184
BUSINESS FACTORS					
Worker equivalent	4.36	9.03	5.03	3.32	4.31
Number of cows	154	401	202	103	139
Number of heifers	115	289	153	80	103
Acres of hay crops ^a	213	310	281	189	218
Acres of corn silage ^a	137	319	191	81	119
Total tillable acres	414	771	525	328	388
Pounds of milk sold	3,125,992	8,939,425	4,325,709	1,967,070	2,829,523
Pounds of milk sold/cow	20,317	22,298	21,459	19,028	20,370
Tons hay crop dry matter/acre	2.2	3.7	2.8	2.4	2.4
Tons corn silage/acre	13.8	17.7	16.2	14.7	14.9
Cows/worker	35	44	40	31	32
Pounds of milk sold/worker	716,971	989,970	859,982	592,491	656,502
% grain & conc. of milk receipts	26%	25%	25%	23%	25%
Feed & crop expense/cwt. milk	\$4.74	\$4.73	\$4.64	\$4.38	\$4.98
Fertilizer & lime/crop acre	\$24.38	\$36.86	\$27.12	\$19.69	\$34.99
Machinery cost/tillable acre	\$199	\$246	\$202	\$171	\$194

^aAverage of all farms in the region, not only those producing the crop.

**FIGURE 8-2. PERCENT CHANGE IN MILK PRODUCTION
Five Regions in New York, 1989-1999**



**TABLE 8-8. MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK
Five Regions of New York, 1999**

Item	Region ^a				
	1	2	3	4	5
<u>Milk Production</u> ^b	(million pounds)				
1989	2,080.9	2,433.0	2,117.8	2,839.7	1,587.1
1999	2,127.6	3,468.6	2,368.7	2,619.8	1,447.4
Percent change	+2.2%	+42.6%	+11.8%	-7.7%	-8.8%
<u>Cost of Producing Milk</u> ^c	(\$ per hundredweight milk)				
Operating cost	\$10.85	\$11.41	\$10.26	\$10.46	\$11.67
Total cost	14.91	13.91	13.59	15.31	15.36
Average price received	14.63	14.85	14.73	15.01	15.41
Return per cwt. to operator labor, management & capital	\$2.12	\$2.32	\$2.94	\$3.00	\$2.64

^aSee Figure 8-2 for region descriptions.

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

^cFrom Dairy Farm Business Summary data

Prices Paid by New York Dairy Farmers and Values of Inventory Items

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 8-9. PRICES PAID BY NEW YORK FARMERS
FOR SELECTED ITEMS, 1989-1999**

Year	Mixed Dairy Feed 16% Protein*	Fertilizer, Urea 45-46%N*	Seed Corn, Hybrid**	Diesel Fuel*	Tractor 50-59 PTO**	Wage Rate All Hired Farm Workers***
	(\$/ton)	(\$/ton)	(\$/80,000 Kernels)	(\$/gal)	(\$)	(\$/hr)
1989	189	227	71.40	0.828	17,350	5.25
1990	177	215	69.90	1.080	17,950	5.51
1991	172	243	70.20	0.995	18,650	6.06
1992	174	221	71.80	0.910	18,850	6.42
1993	171	226	72.70	0.900	19,200	6.76
1994	181	233	73.40	0.853	19,800	6.96
1995	175	316	77.10	0.850	20,100	6.92
1996	226	328	77.70	1.020	20,600	7.19
1997	216	287	83.50	0.960	21,200	7.63
1998	199	221	86.90	0.810	21,800	7.63
1999	175	180	88.10	0.750	21,900	8.12

SOURCE: NYASS, New York Agricultural Statistics. USDA, ASB, Agricultural Prices. *Northeast region average. **United States average.
***New York and New England combined.

Inflation, farm profitability, supply and demand all have a direct impact on the inventory values on New York dairy farms. The table below shows year-end (December) prices paid for dairy cows (replacements), an index of these cow prices, an index of new machinery prices (U.S. average), the average per acre value of farmland and buildings reported in January (February for 1986-89 and April for 1982-85), and an index of the real estate prices.

**TABLE 8-10. VALUES OF NEW YORK DAIRY FARM
INVENTORY ITEMS, 1983-1999**

Year	Dairy Cows		Machinery*	Farm Real Estate	
	Value/Head	1977=100	1977=100	Value/Acre	1977=100
1983	850	172	173	817	139
1984	790	160	181	848	144
1985	740	149	181	820	140
1986	770	156	178	843	144
1987	870	176	180	960	164
1988	900	182	189	993	169
1989	1,020	206	201	1,045	178
1990	1,060	214	209	1,014	173
1991	1,040	210	219	1,095	187
1992	1,090	220	226	1,139	194
1993	1,100	222	235	1,237	211
1994	1,100	222	249	1,260	215
1995	1,010	204	258	1,280	218
1996	1,030	208	268	1,260	215
1997	980	198	276	1,250	213
1998	1,050	212	286	1,280	218
1999	1,250	253	294	1,340	228

SOURCE: NYASS, New York Agricultural Statistics and New York Crop and Livestock Report. USDA, ASB, Agricultural Prices.
*United States average; 1995 - 1999 are estimated due to discontinuation of 1977=100 series.

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 314 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 8-11. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS							
314 New York Dairy Farms, 1999							
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
18.6	851	19,987,607	25,069	5.3	23	55	1,213,661
9.9	418	9,126,584	23,355	4.0	20	47	1,009,282
7.0	279	5,925,301	22,344	3.4	19	44	888,653
5.3	198	3,903,863	21,492	3.0	17	40	798,241
4.2	145	2,857,909	20,435	2.6	16	37	731,684

3.5	111	2,145,630	19,413	2.3	15	34	660,719
3.0	87	1,605,859	18,334	2.0	14	31	597,681
2.5	71	1,261,635	17,209	1.7	12	28	493,858
2.0	56	1,003,180	15,764	1.5	10	24	390,912
1.4	40	588,644	12,475	1.0	8	18	281,530
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		
\$365	15%	\$278	\$778	\$506	\$3.25		
519	20	381	933	703	3.81		
590	22	427	1,028	805	4.25		
653	23	463	1,111	866	4.48		
700	24	504	1,164	921	4.67		

743	25	541	1,223	971	4.88		
793	27	582	1,299	1,021	5.05		
852	28	624	1,398	1,089	5.29		
916	30	701	1,540	1,163	5.71		
1,036	37	845	1,847	1,300	6.78		

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 8-11. (CONTINUED) FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
314 New York Dairy Farms, 1999**

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.	
\$3,817	\$16.50	\$1,200	\$7.89	\$2,176	\$12.45	
3,461	15.56	1,635	9.24	2,532	13.42	
3,293	15.27	1,832	9.90	2,752	13.97	
3,160	15.05	1,998	10.35	2,864	14.48	
3,046	14.86	2,137	10.78	2,987	14.98	

2,908	14.73	2,262	11.20	3,101	15.43	
2,743	14.58	2,367	11.66	3,211	16.16	
2,529	14.39	2,479	12.10	3,306	16.79	
2,320	14.12	2,636	12.76	3,459	17.98	
1,838	13.61	2,955	14.43	3,867	22.84	
Profitability						
Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
\$578,366	\$1,174	0.33	\$668,929	\$1,351	\$454,170	\$318,071
222,031	863	0.25	270,325	1,035	150,302	88,408
136,405	763	0.22	180,888	922	82,986	54,378
96,263	663	0.19	124,395	824	54,339	39,122
74,615	550	0.17	91,554	697	38,704	26,018

56,349	464	0.14	69,234	615	25,330	15,699
39,420	376	0.11	53,026	520	13,406	9,369
26,824	290	0.09	38,225	405	1,342	876
15,421	173	0.16	26,086	282	-11,196	-10,038
-10,114	-114	-0.06	4,679	12	-42,427	-38,149

Financial Analysis Chart

The farm financial analysis chart is designed just like the farm business chart on pages 8-11 and 8-12 and may be used to measure the financial health of the farm business.

TABLE 8-12. FINANCIAL ANALYSIS CHART							
314 New York Dairy Farms, 1999							
Liquidity (repayment)							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
\$128	\$1,177	5.71	7.13	4%	\$217	57%	30.96
247	868	2.38	2.84	8	929	34	5.03
333	757	1.88	2.19	11	1,464	27	3.54
383	675	1.61	1.75	13	1,862	22	2.73
430	599	1.38	1.52	14	2,343	18	2.10

476	546	1.17	1.28	16	2,758	13	1.71
521	486	1.04	1.10	18	3,067	9	1.45
581	406	0.89	0.94	21	3,426	5	1.20
710	300	0.70	0.73	24	3,882	-2	0.91
922	69	0.29	0.31	37	5,125	-17	0.55
Solvency				Profitability			
Leverage Ratio ^a	Percent Equity	Debt/Asset Ratio		Percent Rate of Return with appreciation on:			
		Current & Intermediate	Long Term	Equity	Investment ^b		
0.06	98%	0.03	0.00	36%	19%		
0.17	88	0.11	0.00	19	14		
0.29	80	0.19	0.04	14	11		
0.40	73	0.26	0.18	11	9		
0.56	66	0.33	0.29	8	8		

0.70	60	0.39	0.38	6	6		
0.90	54	0.47	0.46	3	4		
1.13	48	0.55	0.56	0	3		
1.50	40	0.64	0.73	-3	0		
3.91	23	0.88	1.19	-31	-5		
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	Farm Net Worth, End Year		
.85	\$1,210	\$527	\$4,275	\$449,790	\$3,107,799		
.72	1,808	775	5,134	169,937	1,452,198		
.64	2,109	944	5,668	93,388	1,021,329		
.59	2,336	1,082	6,126	59,438	804,166		
.54	2,628	1,204	6,555	42,597	644,876		

.50	2,935	1,348	6,999	29,284	547,645		
.46	3,307	1,493	7,497	20,531	429,658		
.41	3,836	1,738	8,214	12,457	347,748		
.35	4,552	2,103	9,192	838	251,306		
.25	6,622	2,899	11,691	-47,361	124,028		

^aDollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

^bReturn on all farm capital (no deduction for interest paid) divided by total farm assets.

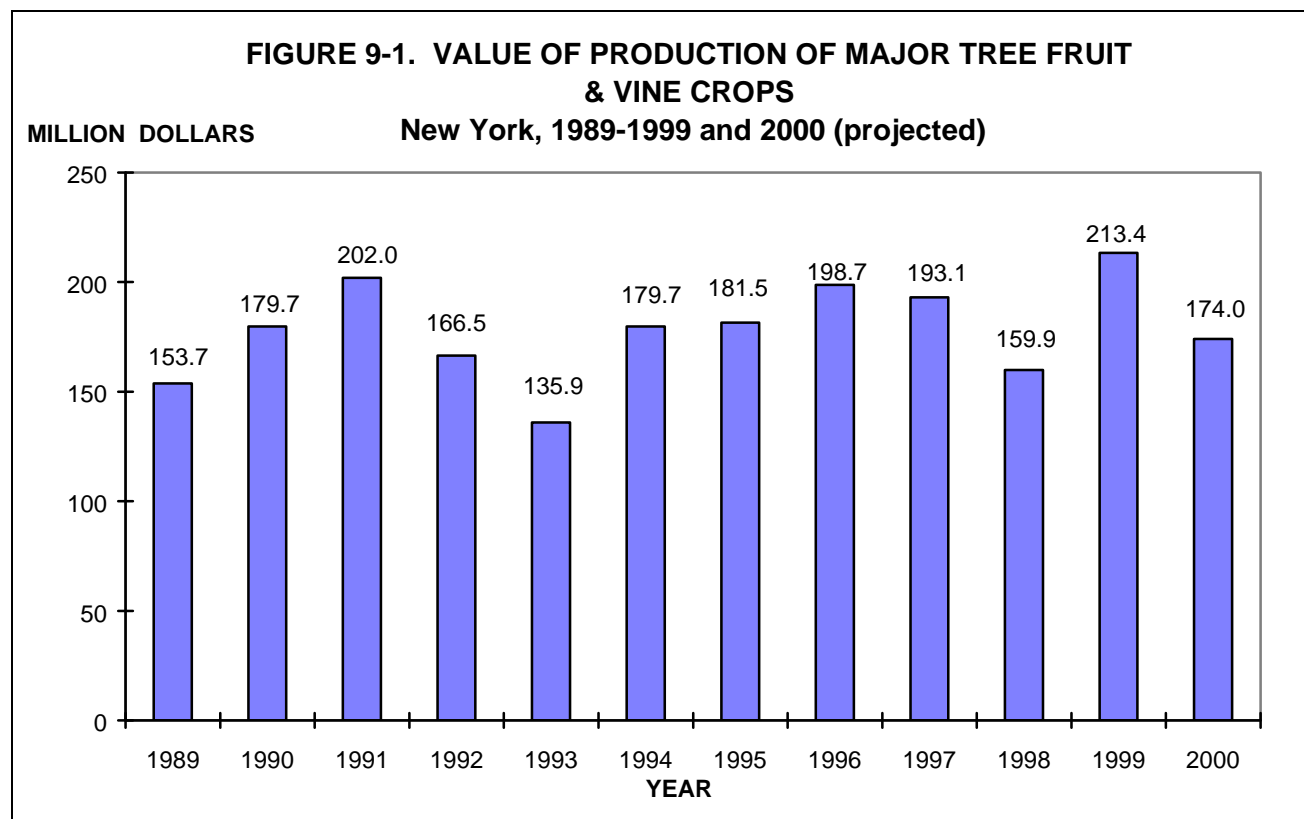
Chapter 9. Fruit

Gerald B. White, Professor

The total production of the six tree and vine crops which are important to New York's agricultural economy was projected to increase by 10 per cent nationally. The national production of apples, grapes, tart cherries, and peaches were forecast to increase compared with last year's production, while decreased production was indicated for pears and sweet cherries. The national production of apples was forecast at 254 million bushels, up one percent from 1999. Grape production was expected to total 7.5 million tons, an increase of 20 percent from last year's crop. If realized, grape production will surpass the record crop of 7.3 million tons in 1997.

In New York, apple production is indicated to be 24.3 million bushels, down 19 percent from last year's huge crop. Indicated production is nine percent below the average production of the last 5 years. Grape production of 165 thousand tons was estimated, 20 percent below last year's record crop. Total production of the six major fruit and vine crops of 703 thousand tons is projected for the State, down 19 percent from the previous year. Total production, which was the highest in several decades in 1999, is the lowest since the extremely short crop year 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 2000 is shown below. With much smaller apple and grape crops and similar prices for grapes, but lower prices for processed apples, the value of the state's major fruit tree and vine crop is projected at \$174 million, well below the record \$213 million realized in '99.



Source: New York Agricultural Statistics, 1999-2000

**TABLE 9-1. COMMERCIAL NONCITRUS FRUIT PRODUCTION
New York and United States**

Fruit	New York				United States			
	1997	1998	1999	2000*	1997	1998	1999	2000*
----- thousand tons -----								
Apples	560	535	630	510	5,162	5,823	5,290	5,339
Grapes	139	128	205	165	7,291	5,820	6,230	7,487
Tart Cherries	7	7	9	7	146	174	128	127
Pears	8	12	13	14	1,043	970	1,020	1,001
Peaches	6	5	7	6	1,312	1,200	1,262	1,339
Sweet Cherries	1	1	1	1	226	211	229	224
Total New York's Major Fruit Crops	721	688	865	703	15,180	14,198	14,159	15,517

*indicated

**TABLE 9-2. AVERAGE FARM PRICES OF NONCITRUS FRUITS
New York and United States**

Fruit	New York				United States			
	1996	1997	1998	1999	1996	1997	1998	1999
----- dollars per ton -----								
Apples								
Fresh	354	352	316	330	416	442	346	424
Processed	190	166	160	134	171	130	95	121
All Sales*	270	252	228	228	318	308	244	296
Grapes	257	292	316	290	429	429	455	483
Tart Cherries	288	346	360	314	322	318	290	418
Pears	383	384	375	388	376	276	291	294
Peaches	696	922	832	908	382	354	384	380
Sweet Cherries	1,420	1,720	2,070	1,490	1,470	1,250	1,090	1,090

**TABLE 9-3. VALUE OF UTILIZED PRODUCTION, NONCITRUS FRUITS
New York and United States**

Fruit	New York				United States			
	1996	1997	1998	1999	1996	1997	1998	1999
----- million dollars -----								
Apples								
Fresh	88.5	91.5	66.4	97.4	1,289	1,288	1,111	1,266
Processed	50.4	49.8	43.2	42.9	353	288	206	268
All Sales*	138.9	141.3	109.6	140.2	1,641	1,575	1,316	1,534
Grapes	47.2	40.0	39.4	59.2	2,376	3,126	2,644	3,011
Tart Cherries	2.0	2.3	2.2	2.7	42	45	44	53
Pears	5.7	3.1	3.8	4.4	308	288	282	299
Peaches	4.0	5.3	3.5	5.4	389	444	447	463
Sweet Cherries	0.9	1.1	1.3	1.5	223	279	226	248
Total New York's Major Fruit Crops*	198.7	193.1	159.8	213.5	4,979	5,758	4,960	5,608

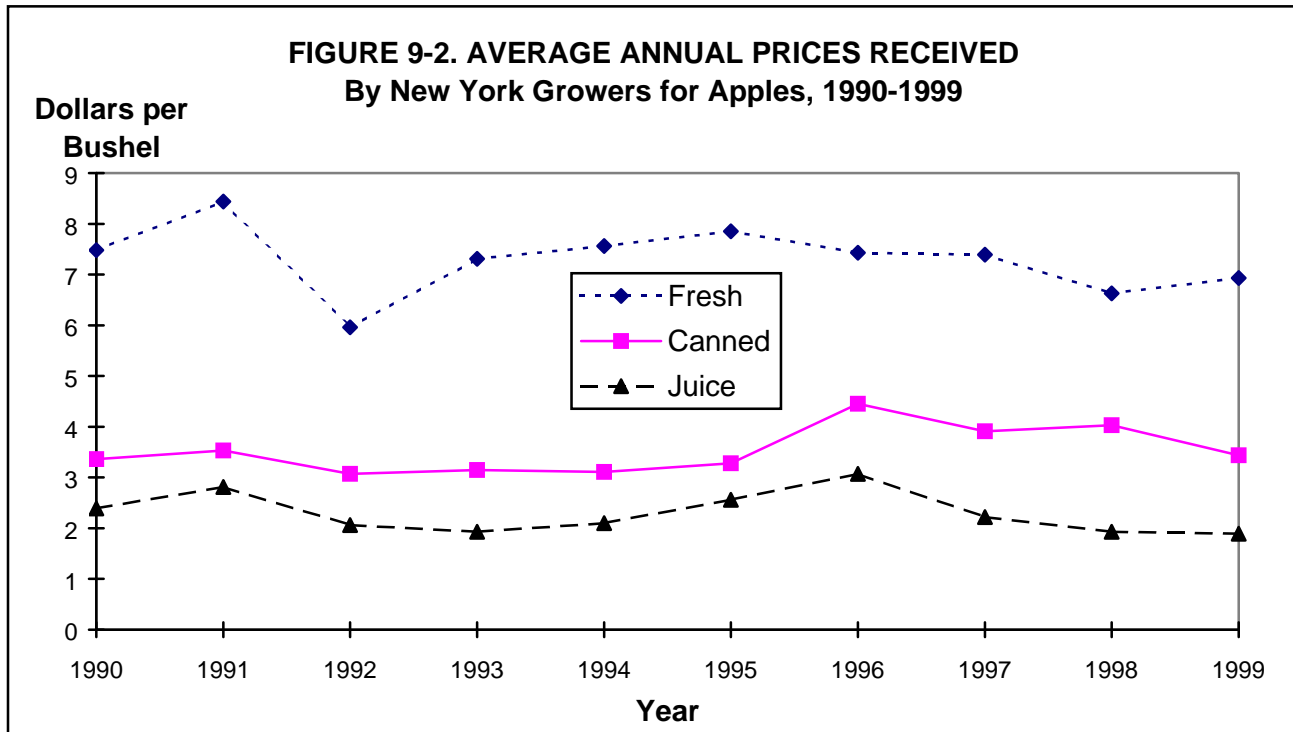
*May not add from total of fresh and processed due to rounding errors.

Source: NASS, USDA, *Noncitrus Fruits and Nuts 1999 Summary*, July 2000.

**TABLE 9-4. APPLE PRODUCTION, UNITED STATES,
1995-1999, Five-Year Average Production, and 2000 Forecast
1,000 42-Pound Bushels**

States/Regions	5-Year Average 1995-1999*	1999*	2000 USDA Estimate**	2000 Compared to USDA 5-Year Average % Change	2000 vs. 1999 % Change
Maine	1,479	1,714	833	-43.6	-51.4
New Hampshire	886	1,036	810	-8.6	-21.8
Vermont	1,119	1,429	1,190	6.4	-16.7
Massachusetts	1,317	1,548	1,190	-9.6	-23.1
Rhode Island	77	86	67	-13.0	-22.2
Connecticut	500	548	524	4.8	-4.3
New York	26,619	30,000	24,286	-8.8	-19.0
New Jersey	1,405	1,190	1,310	-6.8	10.0
Pennsylvania	11,076	12,024	11,429	3.2	-5.0
Maryland	870	905	905	4.1	0.0
Virginia	7,548	8,571	8,095	7.3	-5.6
West Virginia	3,048	3,452	2,143	-29.7	-37.9
North Carolina	4,748	4,524	4,524	-4.7	0.0
South Carolina	1,081	762	550	-49.1	-27.8
Georgia	395	286	310	-21.7	8.3
Total East	62,308	68,074	58,164	-6.7	-14.6
Ohio	2,143	2,381	2,143	0.0	-10.0
Indiana	1,368	1,436	1,071	-21.7	-25.4
Illinois	1,479	1,393	1,714	15.9	23.1
Michigan	24,429	28,810	21,429	-12.3	-25.6
Wisconsin	1,460	1,843	1,595	9.3	-13.4
Minnesota	541	593	524	-3.3	-11.6
Iowa	256	262	286	11.5	9.1
Missouri	981	1,167	810	-17.5	-30.6
Kansas	118	171	167	41.1	-2.8
Kentucky	258	214	214	-16.8	0.0
Tennessee	281	226	214	-23.7	-5.3
Arkansas	159	129	171	7.8	33.3
Total Central	33,472	38,624	30,338	-9.4	-21.5
Total East & Central	95,780	106,698	88,502	-7.6	-17.1
Colorado	895	190	905	1.1	375.0
Utah	781	214	1,071	37.2	400.0
Idaho	2,881	1,667	4,524	57.0	171.4
Washington	128,333	119,048	135,714	5.8	14.0
Oregon	3,743	3,571	4,167	11.3	16.7
California	21,176	19,643	17,381	-17.9	-11.5
Arizona	1,125	817	1,952	73.5	139.1
Total West	159,054	145,198	165,714	4.2	14.1
TOTAL U.S.	254,834	251,895	254,217	-0.2	0.9
TOTAL NORTHEAST	48,537	53,931	44,686	-7.9	-17.1

*1999 and 5-year average production from NASS, USDA, Non-Citrus Fruits and Nuts Summary July 2000.
**NASS, USDA, Crop Production, October 10, 2000.



Source: New York Agricultural Statistics, 1999-2000.

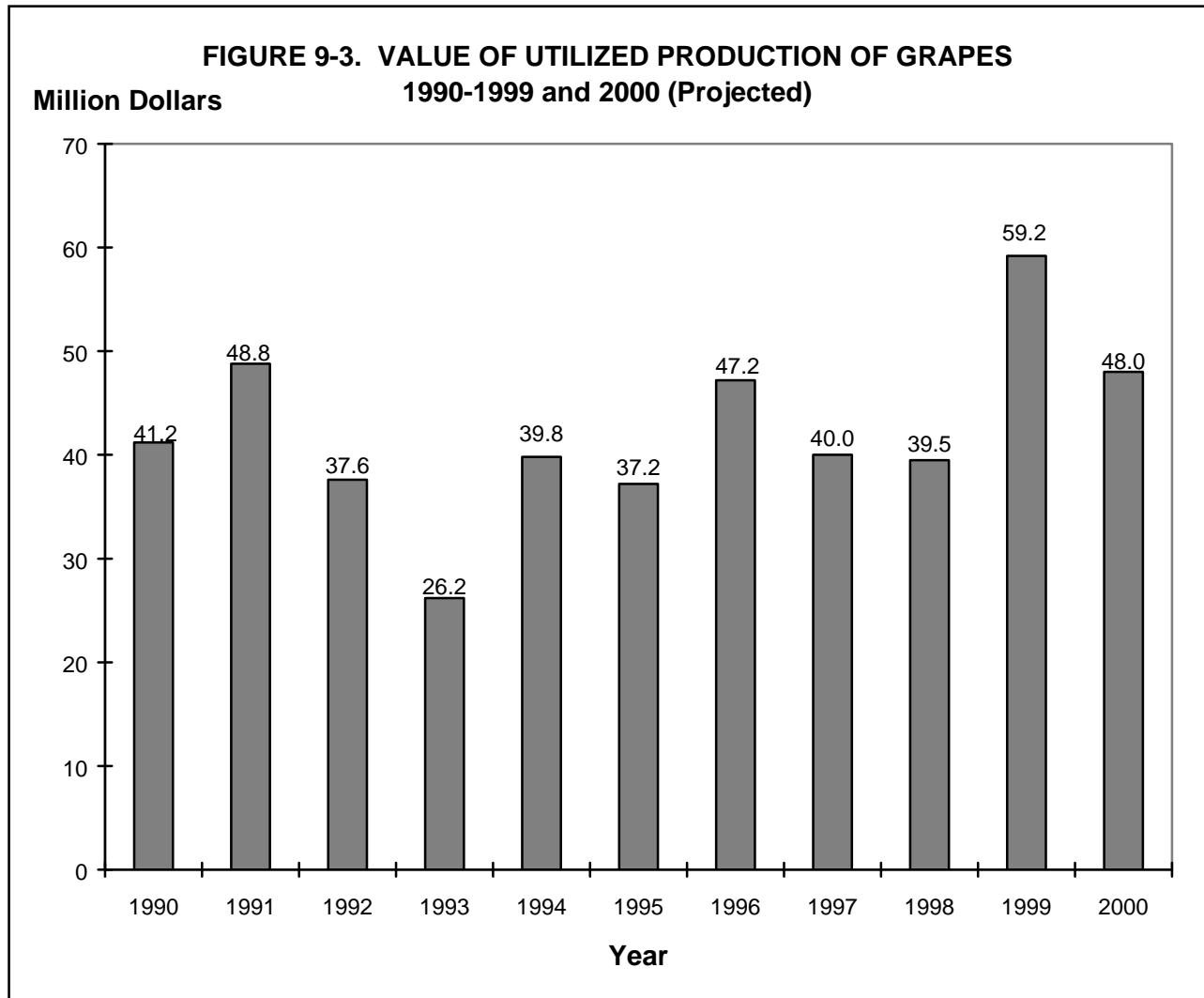
Over the past decade until 1996, prices for processed apples had been fairly constant, while fresh apple prices had more pronounced fluctuations due to particular supply and demand conditions in a given year. In 1996, prices for canned and juice apples increased dramatically while the price for fresh apple decreased. The value of the 1996 apple crop was 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 1998, the value of the crop decreased to 109.6 million dollars due to a short crop as well as lower prices for both fresh apples and juice apples. In 1999, the largest crop since 1926 pushed up the crop value to \$140 million, despite soft prices, especially for processed apples.

In October 2000, the average price for fresh apples in New York State was 20.3 cents per pound, 19 per cent above last year. In November, prices softened. Exports of fresh apples (both volume and prices) were running ahead of last year at the beginning of the season. Large crops in Italy and France, as well as a record crop for the entire EU, and the strong value of the dollar in relation to the British pound are factors that will affect export potential. With strength in smaller markets other than Great Britain, exports may increase slightly above last year's shipments of 872 thousand cartons. For the entire season, New York's average price for fresh apples will probably increase to 17.5 cents per pound, six percent above last year.

Announced processing apple prices in 2000 were down for peelers, from five to fifteen percent depending upon variety and grade. Juice apples in the fall were being sold for 3 to 5 cents per pound. With extremely low world market prices for concentrate (some European concentrate is now as low as \$5 per gallon), juice prices are unlikely to average more than the 4.5 cents per pound for the '99 crop. Furthermore, hail affected an estimated 7000 acres of apples in the Hudson Valley, resulting in some fruit being unharvested, some diversion from fresh to juice, and lower packouts. Overall apple growers can expect decreased revenue compared with last year's crop. Net income will be down for both Western New York (due to the processed price situation) and in the Hudson Valley (due to the effects of hail damage). Champlain Valley growers may have improved net income over last year. The total value of the crop is projected at \$111 million, about 20 percent below last year's crop value. (The assistance of Alison DeMarree, Area Specialist, Cornell Cooperative Extension, is acknowledged for this section of the handbook.)

Grapes

The New York grape crop this year is projected to be 165,000 tons, an average crop considering the last five years, but 20 percent below the record crop of last year. Market conditions were generally favorable for both juice and wine grape growers. When the final crop value estimate is available, it will likely show a crop value of \$48 million, well below the record value of \$59.2 million realized in 1999.

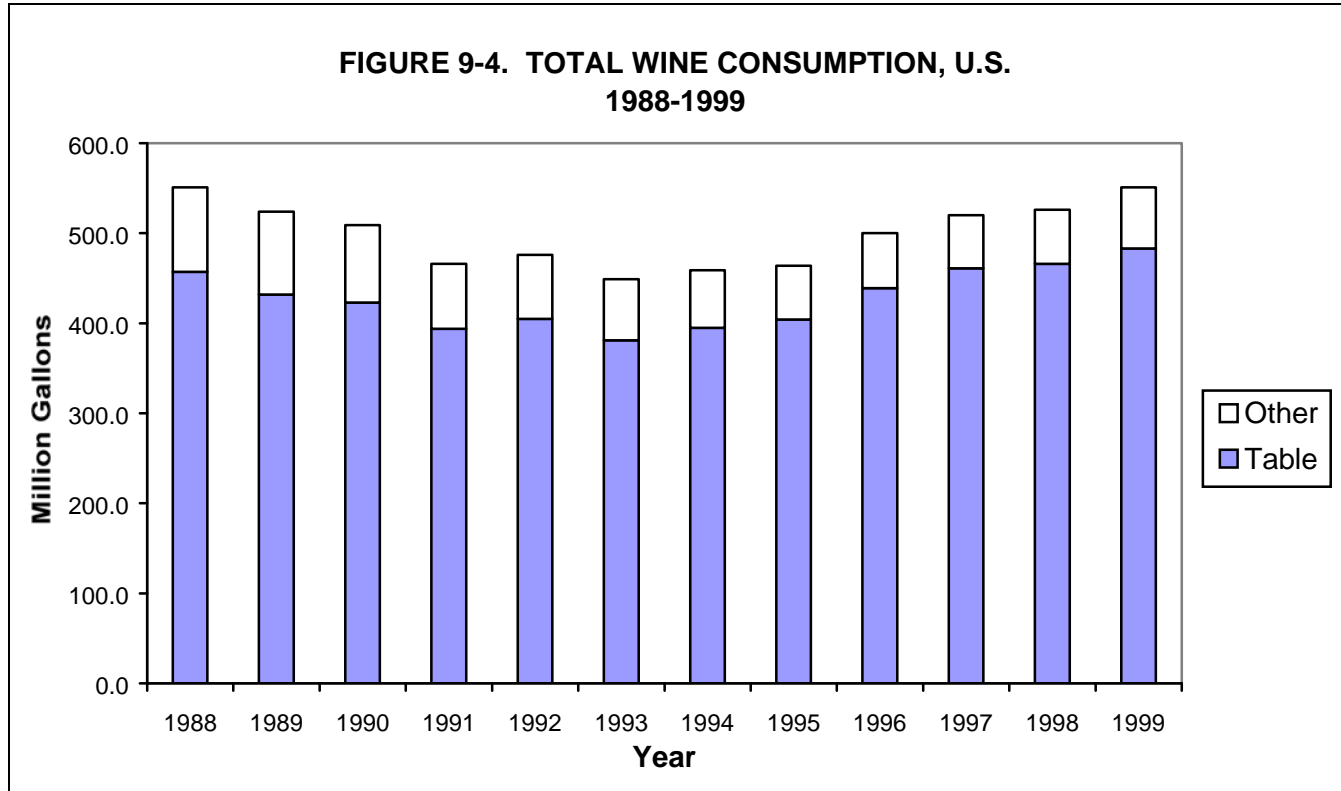


Source: New York Agricultural Statistics, 1999-2000.

Total wine consumption in 1999 increased 4.8 percent. Increased consumption was driven by the sixth consecutive gain in the table wine category. Along with continued strong growth in table wine, sparkling wine and champagne also experienced increases in '99 due to end of the millennium celebrations. Favorable publicity given to research showing positive health benefits from regular, moderate wine consumption has undoubtedly caused increased consumption. Final consumption figures for 2000 will likely show a very strong growth in U.S. wine consumption of about six percent.

In the current market, consumers are image and brand conscious. That fact, coupled with a strong economy, has meant that consumers are willing to spend more for wine and other products that have prestige

value. In addition to the growth in fruit flavored varieties, the market for wines priced at \$10 and over remains strong. In fact, there is now a growing demand for wines priced at \$25 and over a bottle, although this is still a miniscule percentage of the total volume. If the US economy remains strong, wine priced at these ultra premium levels offer an opportunity for wineries in New York which can attain the highest level of quality for selected *vinifera* varieties (e.g. Pinot Noir).



Source: Wine Institute/Gomberg, Fredrickson and Associates

Concords are the predominant variety grown and processed in New York. There were 154,500 tons of Concords from New York processed in 1999, 31 percent above the average of the past five years (see page 9-7). 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 5.2 percent. *Vinifera*, with an average of just 3,766 tons utilized, accounted for just 2.4 percent of the NY crush over the last five years.

The average price for French-American hybrids such as Aurore, de Chaunac, and Seyval has been flat to declining in recent years. The prices of other major French American varieties, such as Baco Noir, Cayuga White, and Rougeon, have been increasing due to the strong growth in the small winery sector. Native American varieties used for juice (i.e. Concord and Niagara) are in a cycle of relatively high prices, while American varieties used primarily in wine (such as Catawba and Elvira) were sold at somewhat lower prices.

Vitis Vinifera prices are heavily influenced by Riesling and Chardonnay, which are harvested in larger quantities than other *vinifera* varieties. Most Riesling and Chardonnay sold in the \$1,000 - 1,450 per ton range in 1999, while red *vinifera* generally brought \$1,100 - 1,700 per ton. Hence, the average *vinifera* price in 1999 was \$1,290, a 5 percent increase from '98 prices.

**TABLE 9-5. GRAPES: NEW YORK GROWN
Received By Wineries and Processing Plants, 1995-1999**

Variety	1995	1996	1997	1998	1999	5-Year Avg.
----- tons -----						
Concord	111,000	139,000	96,600	89,400	154,500	118,100
Niagara	15,600	10,700	12,800	10,000	17,200	13,260
Catawba	8,700	7,900	7,335	6,090	9,600	7,925
Elvira	4,600	5,100	4,110	3,080	4,540	4,286
Delaware	2,350	1,650	1,010	550	1,180	1,348
Dutchess	250	120	***	***	***	***
Ives	***	***	130	115	210	***
Aurora	5,250	4,900	3,295	4,080	4,240	4,353
de Chaunac	1,450	910	575	710	940	917
Baco Noir	1,300	1,200	670	890	730	958
Seyval Blanc	900	900	600	650	850	780
Cayuga White	740	1,000	630	840	860	814
Rougeon	800	720	585	420	660	637
Vitis Vin.(all)	3,435	3,700	3,650	4,015	4,030	3,766
Other varieties	<u>2,625</u>	<u>2,200</u>	<u>2,010</u>	<u>2,160</u>	<u>2,460</u>	<u>2,291</u>
Total, all varieties	159,000	180,000	134,000	123,000	202,000	159,600

SOURCE: New York Agricultural Statistics, 1999-2000.

**TABLE 9-6. GRAPES: PRICES PAID FOR NEW YORK GROWN GRAPES PROCESSED
1995-1999**

Variety	1995	1996	1997	1998	1999	5-Year Avg.
<u>American Varieties</u>						
Catawba	210	215	220	245	243	227
Concord	205	207	257*	284*	266*	244*
Delaware	200	210	230	270	279	238
Dutchess	200	200	***	***	***	***
Elvira	210	215	215	240	238	224
Ives	***	***	300	370	384	***
Niagara	195	220	233*	265*	271*	237*
<u>French American Hybrid</u>						
Aurore	220	230	220	245	248	233
Baco Noir	260	280	330	395	409	335
Cayuga White	240	270	335	390	401	327
de Chaunac	250	280	315	375	285	301
Rougeon	270	280	320	380	404	331
Seyval Blanc	280	290	335	360	346	322
<u>Vitis Vinifera</u>						
All varieties	980	1,130	1,240	1,230	1,290	1,174
TOTAL	222	249	281	313	287	270

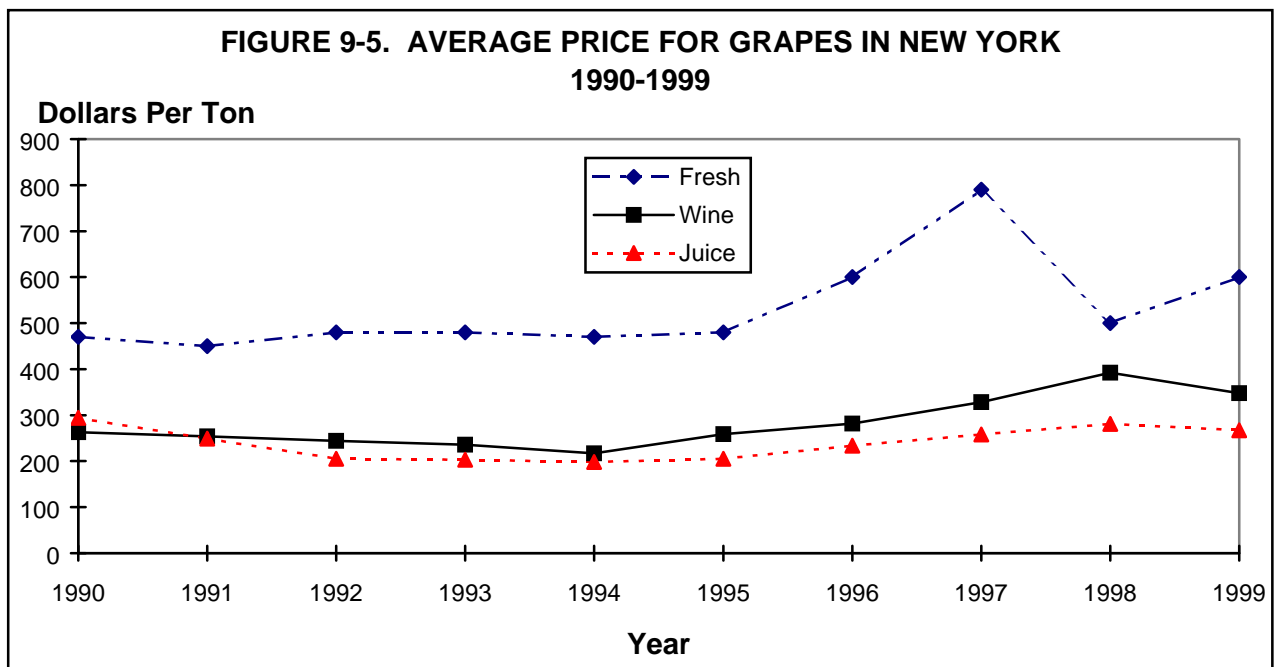
*Preliminary estimates of future payments by cooperatives have been included based upon historical data.
SOURCE: Fruit, 975-2-00, NY Agricultural Statistics Service.

The national crop of Concord and Niagara grapes decreased in 2000 after the huge '99 crop. Washington State Concord production was close to average, and New York production fell considerably.

National Grape, which processes about 30 per cent of the total NY grape crop, paid a harvest cash advance of \$100 per ton for the third consecutive year. Favorable publicity about the health benefits of grape juice has caused strong demand for Concord grapes. Cash prices were slightly lower than last year, in the \$245-\$260 range. Although earnings from the 2000 crop for juice grape growers will fall by perhaps 20 percent, cash flow will be strong because cooperative growers will be receiving big payments from the huge '99 crop.

For growers selling to large wineries, prices were similar to last year. Canandaigua Wine Company (the major purchaser of the State's wine grapes) listed slightly lower prices for Aurore, Catawba, Concord Niagara, and white hybrids. Delaware and red hybrids were unchanged. Canandaigua did, however, offer a slightly higher price for Elvira. Thus the overall average price for native varieties and hybrids, when weighted by volume of purchases from the largest winery, will be close to last year's average.

The small winery sector of the State's grape industry continued its strong performance. The average price for *vinifera* grapes will probably increase about one percent to a record \$1300 per ton. Although there will be considerably less grapes to process this year, it will be a good year for the state's small wineries. Winery visitation is increasing significantly for most wineries, and the money spent per visitor is also increasing. Small wineries with quality wines and good marketing skills will again experience strong sales growth for the year 2001. (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, 1999-2000.

Chapter 10. Vegetables

Wen-fei L. Uva, Senior Extension Associate

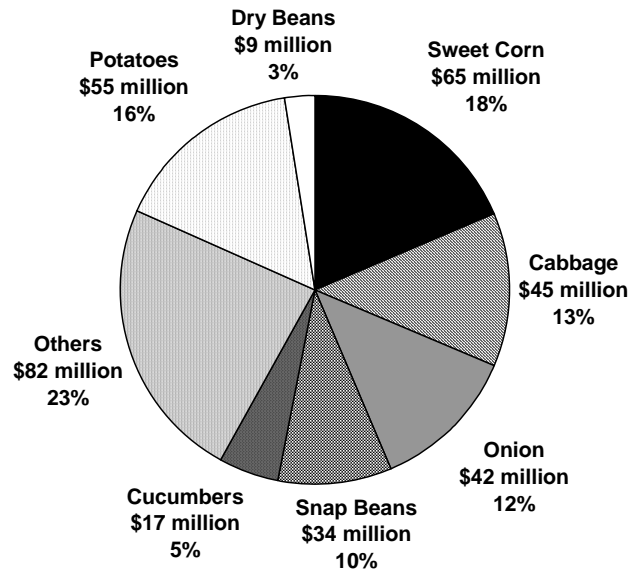
In 1999, despite cool, rainy spring weather in California, the summer drought in the East, and hurricanes in the South, total U.S. vegetable and melon output rose 7 percent. Given ample supplies of almost all vegetables and melons in 1999, prices received by U.S. growers were the lowest since 1991. In the first half of 2000, prices received by U.S. vegetable growers continued a general slide and averaged 13 percent below a year earlier. Unusually cool, wet weather in central California and the Eastern States interfered with the production of many vegetables and resulted in a rebound of grower prices. This summer (July – September), the fresh market vegetable and melon harvested area was estimated to have declined 2 percent from a year ago. Contracted processing vegetable production for the four major processing vegetables (tomatoes, sweet corn, snap beans, and green peas) is estimated at 14.8 tons, down 13 percent from last year, but 7 percent more than two years ago. Most of the decline came from tomatoes.

U.S. fall-season potato growers expect to harvest 2 percent more acres in 2000 at 1.19 million acres, and production is forecast at a record high of 463 million hundred weight (cwt.). Despite higher prices in the U.S. market, the import volume of fresh-market potatoes from Canada declined 17 percent. However, the volume of frozen potato imports from Canada continued to climb to another record-high, rising 13 percent from a year earlier. This spring, U.S. dry edible bean growers reacted to large stocks, slow exports, and low prices by reducing the harvest area to an estimated 1.65 million acres – down 12 percent from a year earlier and 9 percent below the 1990s' average.

In New York, the total value of vegetable production (fresh and processing, excluding potatoes and dry beans) in 1999 was estimated to be \$284 million which was 9.2 percent of total New York agricultural product receipts-- down 2.6 percent from 1998 production. The value of New York's principal fresh market vegetables at \$199 million in 1999 was down 2 percent from 1998. The production values of sweet corn, snap beans, and cucumbers increased, while onion production value took the biggest hit, down 31 percent from a year earlier. The value of principal processing vegetables at \$45.3 million was 9 percent lower than in 1998, with increases in production of cabbage for kraut (up 16 percent) and snap beans (2 percent), and decreases in green peas (down 22 percent) and sweet corn (18 percent). The value of potato production was \$55 million, and the value of dry bean production was \$9 million in 1999.

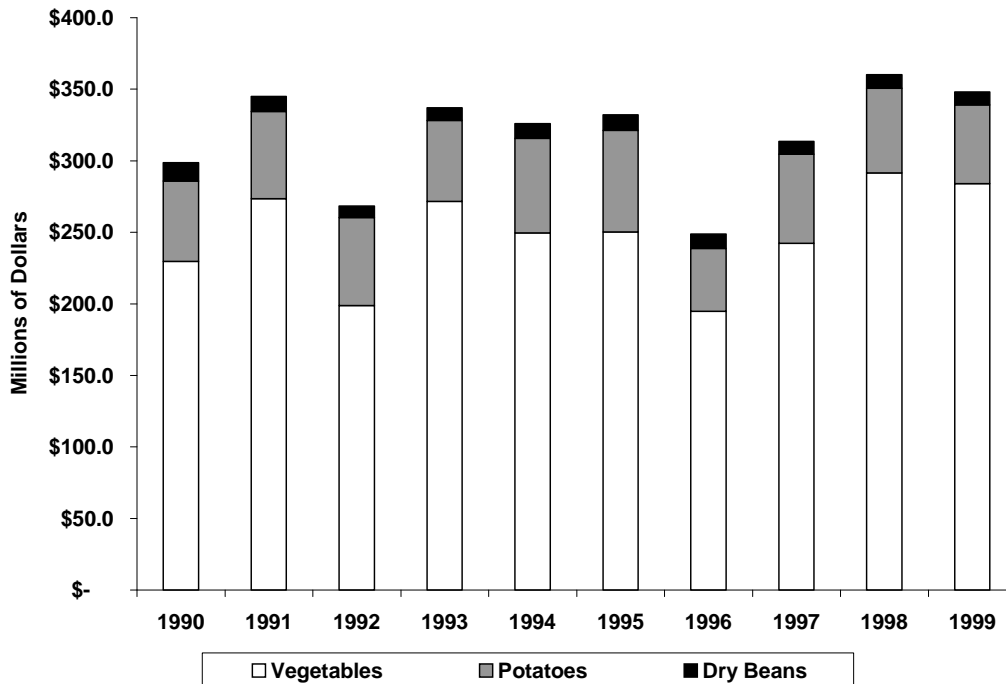
Early rains in 2000 lowered initial volumes for New York vegetable crops. Due to higher yields this year, New York's onion crop for 2000 is forecast at 4.64 million cwt., up 32 percent from 1999. Potato production is estimated at 6.18 million hundred cwt., down 9 percent from 1999, and acreage is estimated to have declined 16 percent from the 21,300 acres of a year earlier. Dry bean acreage in New York is estimated to have risen 29 percent, reflecting the addition of late spring acreage caused by a rainy spring and slightly more attractive prices for light red kidneys – New York's major bean class.

FIGURE 10-1. VALUE OF NEW YORK VEGETABLE PRODUCTION IN 1999



Source: *New York Agricultural Statistics, 1999-2000.*

FIGURE 10-2. VALUE OF PRODUCTION OF VEGETABLE CROPS, POTATOES, AND DRY BEANS NEW YORK, 1990-1999



Source: *New York Agricultural Statistics, 1999-2000.*

	New York				United States				New York as % of U.S. 1999
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99	
	\$ million				\$ million				
Vegetables for Fresh Market									
Sweet Corn	29.7	47.6	52.2	10%	418.6	452.4	458.6	1%	11%
Cabbage	46.4	43.2	42.4	-2%	273.0	303.7	229.9	-24%	18%
Onion	42.0	51.9	35.8	-31%	770.0	826.1	632.9	-23%	6%
Snap Beans	17.3	16.6	19.8	19%	154.4	238.9	255.7	7%	8%
Cucumbers	12.8	14.7	16.8	15%	204.7	225.6	217.5	-4%	8%
<i>Principal Vegetables for Fresh</i>	<i>172.1</i>	<i>202.8</i>	<i>199.4</i>	<i>-2%</i>	<i>7948.8</i>	<i>8071.5</i>	<i>7550.0</i>	<i>-6%</i>	<i>3%</i>
Vegetables for Processing									
Sweet Corn	15.1	15.5	12.7	-18%	250.3	238.7	234.4	-2%	5%
Snap Beans	11.5	13.6	13.8	2%	128.0	125.4	134.5	7%	10%
Green Peas	8.4	12.7	10.0	-22%	138.5	136.6	126.9	-7%	8%
Cabbage for Kraut	3.2	2.9	3.3	16%	8.3	7.7	8.6	12%	39%
<i>Principal Vegetables for Processing</i>	<i>43.3</i>	<i>49.8</i>	<i>45.3</i>	<i>-2%</i>	<i>1488.5</i>	<i>1426.1</i>	<i>1706.1</i>	<i>20%</i>	<i>3%</i>
Potatoes	62.2	59.0	55.0	-7%	2225.7	2368.2	2698.0	14%	2%
Dry Beans	9.2	9.6	9.0	-6%	529.6	594.7	573.7	-4%	2%
Total	313.6	360.1	347.9	-3%	14653.0	15144.8	15163.7	0%	2%

Source: ERS, USDA, *Vegetable Specialties – Situation and Outlook Yearbook*, July 2000.
New York Agricultural Statistics, 1999-2000.

	New York				United States				New York as % of U.S. 1999
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99	
Vegetables for Fresh Market									
	1,000 cwt				1,000 cwt				
Sweet Corn	1,993	2,628	3,202	22%	23,641	26,311	27,248	4%	12%
Cabbage	5,376	4,598	4,961	8%	25,267	23,946	22,069	-8%	22%
Onion	3,660	3,750	3,528	-6%	68,769	66,024	73,562	11%	5%
Snap Beans	316	329	372	13%	3,805	4,883	5,530	13%	7%
Cucumbers	600	760	648	-15%	11,571	11,263	11,921	6%	5%
<i>Total Vegetables for Fresh</i>	<i>12,893</i>	<i>13,115</i>	<i>13,563</i>	<i>3%</i>	<i>429,660</i>	<i>420,005</i>	<i>451,190</i>	<i>7%</i>	<i>3%</i>
Vegetables for Processing									
	1,000 Tons				1,000 Tons				
Sweet Corn	251.5	219.5	179.4	-18%	3,342.3	3,255.6	3,297.9	1%	5%
Snap Beans	77.5	77.0	72.6	-6%	729.3	731.0	775.4	6%	9%
Green Peas	40.2	38.5	31.7	-18%	480.0	483.9	461.6	-5%	7%
Cabbage for Kraut	69.2	61.8	68.2	10%	183.7	172.6	177.9	3%	38%
<i>Total Vegetables for Processing</i>	<i>510.4</i>	<i>459.8</i>	<i>420.8</i>	<i>-8%</i>	<i>16,417.9</i>	<i>15,690.5</i>	<i>19,211.7</i>	<i>22%</i>	<i>2%</i>
	1,000 cwt				1,000 cwt				
Potatoes	7,150	7,290	6,758	-7%	467,091	475,771	478,109	0%	1%
Dry Beans	679	426	414	-3%	29,370	30,418	33,230	9%	1%

Source: ERS, USDA, *Vegetable Specialties – Situation and Outlook Yearbook*, July 2000.
New York Agricultural Statistics, 1999-2000.

TABLE 10-3. AVERAGE FARM PRICES OF MAJOR VEGETABLE CROPS, NEW YORK AND UNITED STATES, 1997- 99								
	New York				United States			
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99
Vegetables for Fresh Market	\$/cwt				\$/cwt			
Sweet Corn	14.9	18.1	16.3	-10%	17.7	17.2	16.8	-2%
Cabbage	9.7	10.3	9.2	-11%	11.1	12.9	10.6	-18%
Onion	12.7	16.3	12.2	-25%	12.6	13.8	9.78	-29%
Snap beans	54.8	50.6	53.3	5%	40.6	48.9	46.2	-6%
Cucumbers	21.4	19.3	26.0	35%	17.7	20.0	18.2	-9%
Vegetables for Processing	\$/Tons				\$/Tons			
Sweet corn	60.1	70.6	70.6	0%	74.9	73.3	71.1	-3%
Snap beans	148.0	176.0	190.0	8%	176.0	172.0	173.0	1%
Green peas	210.0	330.0	314.0	-5%	272.0	273.0	261.0	-4%
Cabbage for kraut	46.3	46.4	49.0	6%	45.2	44.7	48.6	9%
	\$/cwt				\$/cwt			
Potatoes	8.75	9.35	9.00	-4%	5.29	5.03	5.49	9%
Dry beans	20.60	25.30	19.90	-21%	19.30	19.00	17.60	-7%

Source: ERS, USDA, *Vegetable Specialties – Situation and Outlook Yearbook*, July 2000.
New York Agricultural Statistics, 1999-2000.

TABLE 10-4. HARVEST AREA, AVERAGE MARKET PRICE, AND VALUE PER ACRE, SELECTED NEW YORK VEGETABLES, 1996-1999								
	Harvest Area				Value Per Acre			
	1996	1997	1998	1999	1996	1997	1998	1999
Fresh market	---(acres)---				---(\$/acre)---			
Carrots	600	600	500	750	3,300	4,480	4,800	7,260
Lettuce	800	700	600	500	1,300	4,200	5,500	6,678
Cauliflower	1,000	1,000	1,400	1,100	4,662	6,960	6,884	5,745
Tomatoes	1,900	3,200	3,300	3,100	1,768	3,492	4,060	3,973
Cucumbers	3,900	3,000	3,800	3,600	1,730	4,280	3,860	4,680
Snap beans	3,900	5,100	5,300	6,100	1,972	3,398	3,137	3,250
Cabbage	11,000	11,600	12,600	12,100	3,232	4,656	4,522	3,420
Onions	11,400	12,200	12,500	12,600	2,352	3,810	4,890	2,839
Sweet corn	27,100	27,300	29,200	33,700	1,110	1,088	1,629	1,549
Processing	---(acres)---				---(\$/acre)---			
Carrots	1,100	1,500	1,200	1,200	850	1,042	1,470	1,416
Beets	4,200	2,700	2,300	2,500	744	971	942	1,214
Kraut cabbage	3,000	2,300	3,000	2,400	623	1,394	956	1,392
Green peas	14,400	18,200	17,500	14,900	588	464	726	669
Snap beans	20,200	22,800	20,800	21,200	651	503	651	651
Sweet corn	40,900	39,300	39,200	32,500	398	385	395	390
Potatoes	---(acres)---				---(\$/acre)---			
Potatoes	28,500	29,500	27,000	25,500	1,927	2,121	2,525	2,385
Dry beans	29,000	43,500	30,000	30,200	351	322	359	273

Source: *New York Agricultural Statistics, 1999-2000.*

The production of sweet corn for fresh market continued to increase in 1999 in New York, up 22 percent from 1998. However, the growth in the nation's production is slowing down. The prices received by New York growers for fresh market vegetables were lower in 1999 for sweet corn (down 10 percent), cabbage (11 percent) and onion (25 percent), and higher for cucumbers (up 35 percent) and snap beans (5 percent) compared to 1998 prices. In 1999, the highest production value per acre was for carrots --both fresh market (\$7,260/acre) and processing (\$1,416/acre).

Commodity	Value of 1999 production	Average value of production 1988-98	10-year high (year in parentheses)	10-year production value trend
	\$ million	\$ million	\$ million (year)	\$ million
Potatoes	60.82	61.08	76.19 (1994)	0.505
Sweet corn (fresh)	52.19	33.66	52.19 (1999)	2.864
Cabbage (fresh)	41.38	42.47	56.76 (1991)	0.005
Onion (fresh)	35.77	49.16	74.83 (1993)	-(2.481)
Snap beans (fresh)	19.83	11.51	19.83 (1999)	1.261
Cucumber (fresh)	16.85	9.28	16.85 (1999)	1.045
Snap beans (processed)	13.81	12.04	14.01 (1991)	0.203
Sweet corn (processed)	12.66	13.50	16.44 (1995)	0.596
Tomatoes (fresh)	12.32	11.02	16.40 (1990)	-(0.306)
Green peas (processed)	9.96	7.77	12.71 (1998)	0.736
Dry beans	8.24	10.08	13.99 (1997)	0.149
Cauliflower (fresh)	6.32	6.40	9.64 (1998)	0.180
Carrot (fresh) ^a	5.45	4.31	7.81 (1992)	-(0.318)
Cabbage for Kraut	3.34	2.50	3.58 (1993)	0.116
Lettuce (fresh)	3.34	4.34	8.11 (1990)	-(0.627)
Beets (processed)	3.04	2.44	3.13 (1996)	0.100
Total^b	352.99	319.71	370.51 (1998)	4.307

^a Includes quantities used for processing from 1989 to 1992.

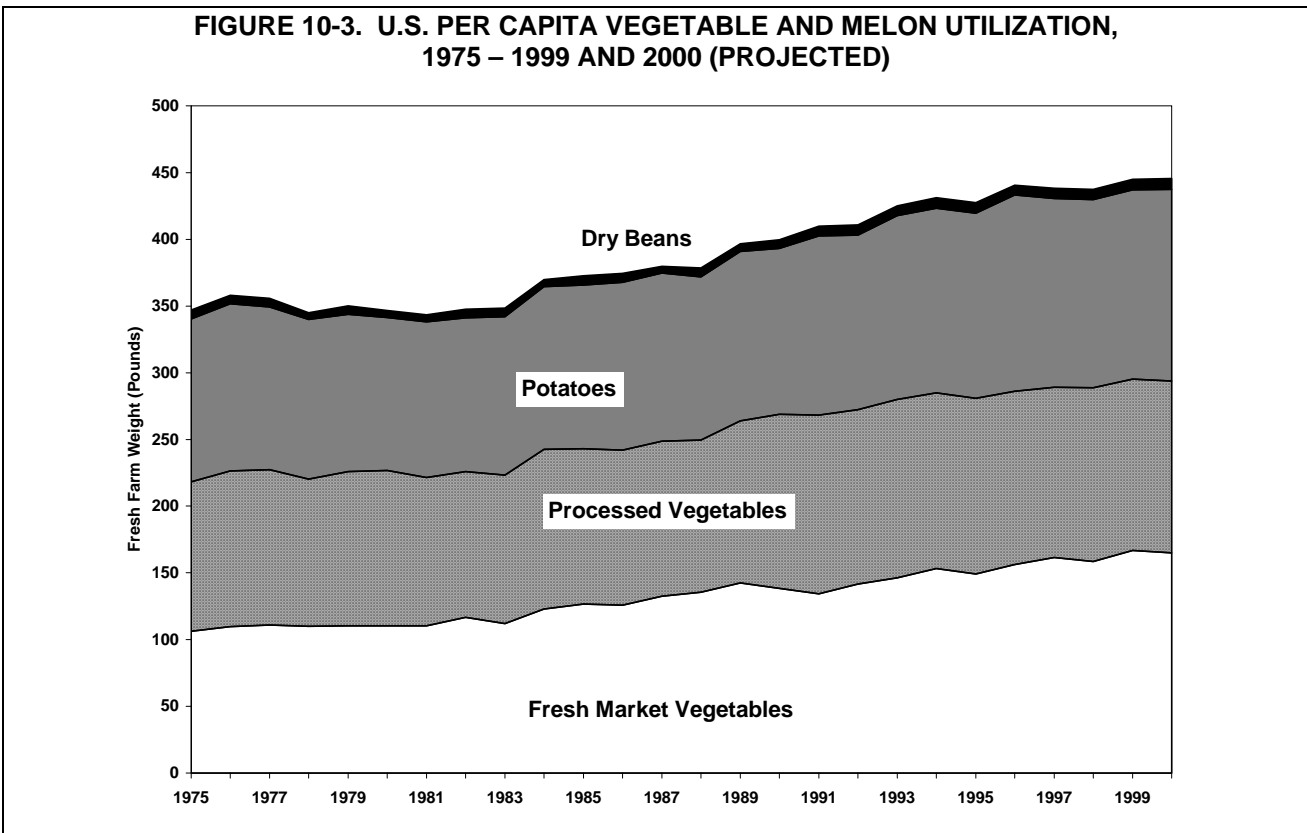
^b Includes potatoes and dry beans.

Source: *New York Agricultural Statistics 1999 - 2000*.

Table 10-5 presents trends in the value of production for primary vegetables in New York State. The vegetables are listed in descending order with respect to their 1999 value of production. The trend analysis is calculated on nominal dollars (not discounted for inflation). The production value of principal vegetables produced in New York had an average growth of \$4.31 million per year over the past decade. Fresh market sweet corn had the largest growth trend at \$2.86 million per year, followed by fresh market snap beans at \$1.26 million per year. Onion had the highest negative trend at \$2.48 million per year in the past ten years. Other vegetables with a negative trend in the past ten years were tomatoes, carrots, and lettuce for fresh market.

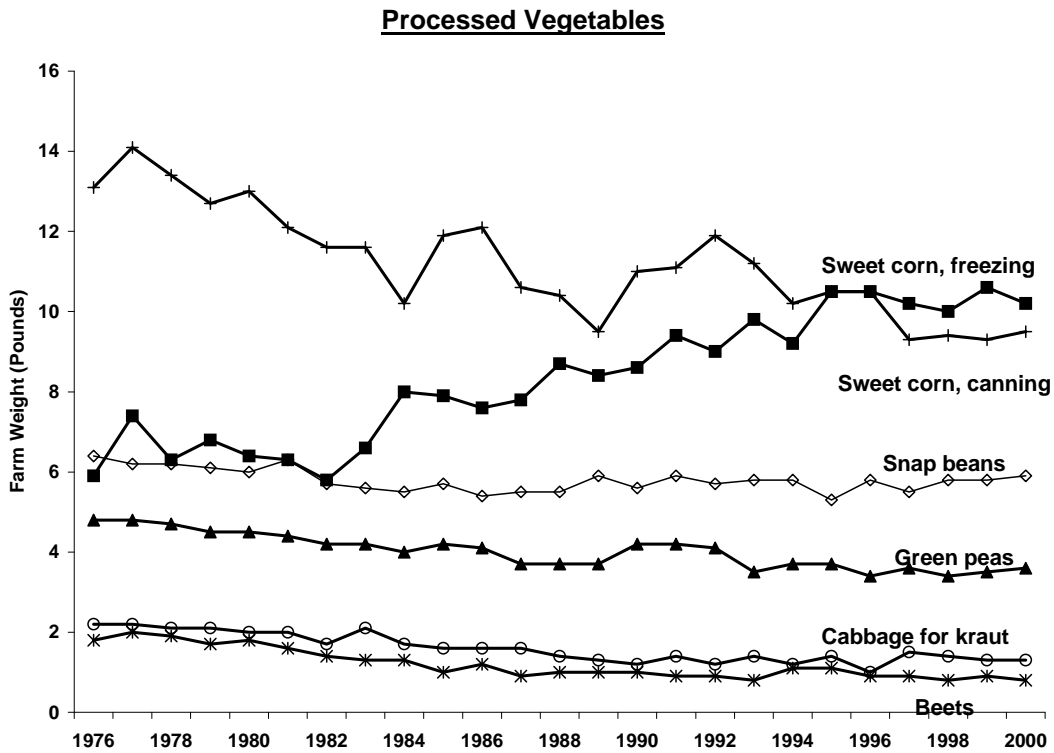
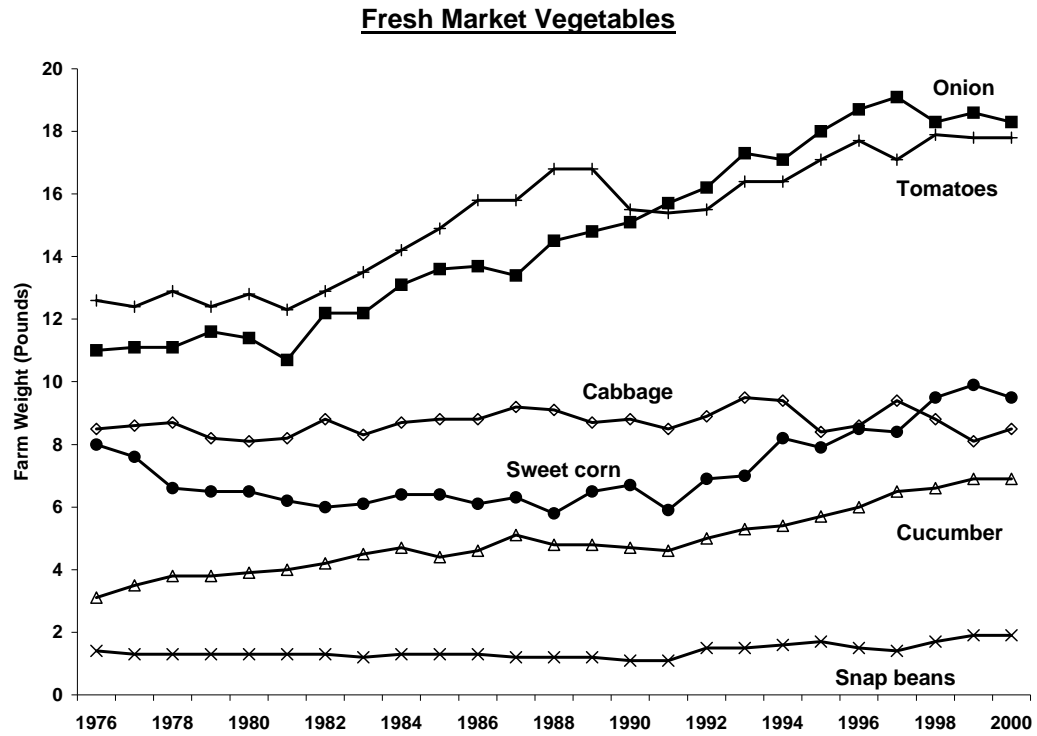
Consumption

Per capita use of all vegetables and melons totaled 454 pounds in 1999 – up 8 pounds from 1998, and projected to reach 456 pounds in 2000. In 1999, large supplies and lower prices led to a 5-percent increase in fresh vegetable use (excluding potatoes). Increases were also noted in vegetables for freezing, potatoes, and dry beans. On the fresh-market side, significant increases in 1999 per capita use were experienced in cauliflower (up 40 percent), head lettuce (15 percent), and broccoli (15 percent), which included fresh-cut and value-added. Very few fresh-market vegetables experienced reduced use last year, with declines in cabbage (down 8 percent), leaf/romaine lettuce (7 percent), and tomatoes (1 percent) being the most noteworthy. Per capita use of all processing vegetables (including potatoes and mushrooms) stayed stable and totaled 224 pounds (fresh equivalent) in 1999, with a 4-percent drop in use of canning vegetables and a 4-percent gain in use of frozen vegetable products. Per capita use of potatoes rose 10 percent to about 142 pounds (fresh equivalent) in 1999. Both fresh and processing uses increased with processed use accounting for 66 percent of the potato crop. Per capita use of dry beans was estimated to be 7.9 pounds in 1999, an increase from 7.4 pounds the year before.

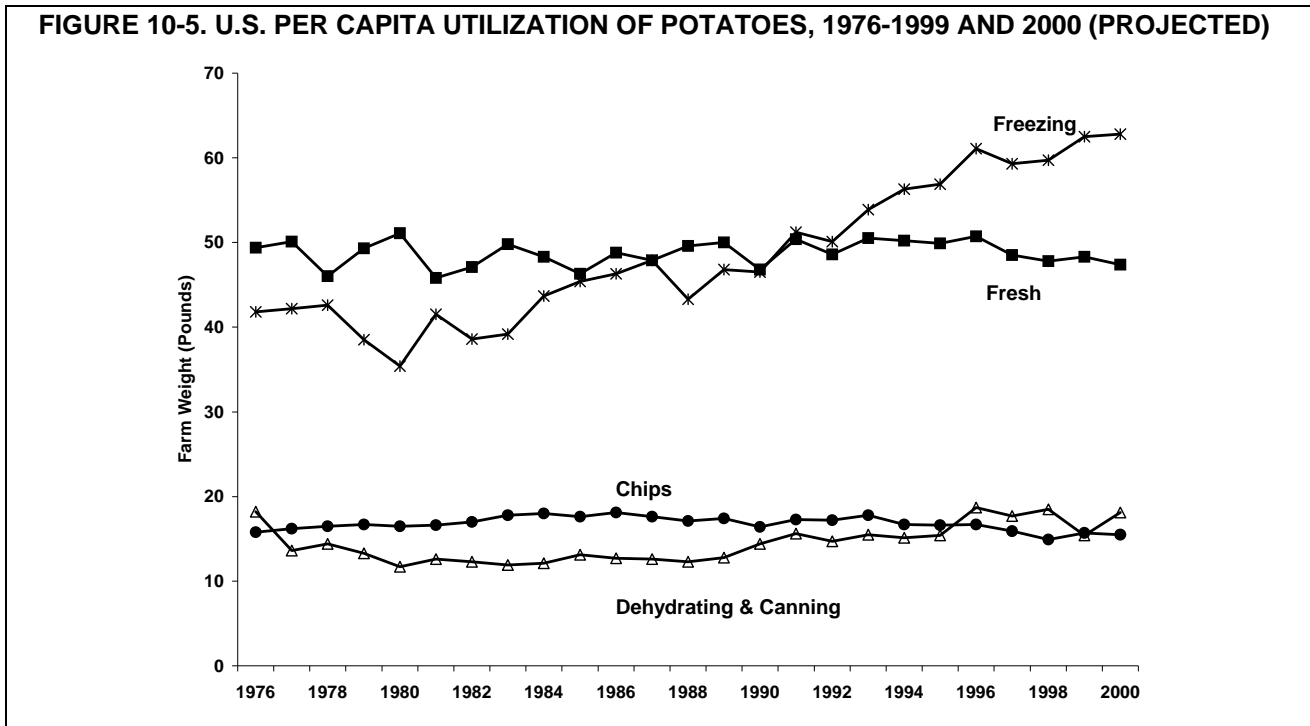


Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

FIGURE 10-4. U.S. PER CAPITA UTILIZATION OF PRINCIPAL NEW YORK VEGETABLES, 1976-1999 AND 2000 (PROJECTED)



Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000



Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

Trade

In 1999, the trade deficit in vegetable crops continued to expand. While the value of exports increased 1 percent to \$3.3 billion, imports rose 5% to \$4.0 billion. Since 1995 (when exports last exceeded imports) import value has risen 51%, while export value has increased just 16%. In 1999, U.S. imports from Mexico declined 4%, and -- driven by fresh greenhouse vegetables, canned sweet corn, and frozen potatoes -- imports from Canada rose 15%. Large domestic output and low market prices helped trim U.S. imports of fresh vegetables to 14% of total supplies, compared with 15% in 1998. Imports (excluding potatoes) accounted for 10% of domestic frozen vegetable consumption last year -- with broccoli accounting for 42% of frozen vegetable imports -- and nearly 11% of the vegetables used in canned form were imported. The United States exported nearly 8% of its fresh-market vegetable and melon supplies (production plus imports). This is the same as for the previous three years, and up from 7% in 1989. With higher prices and reduced stocks, about 7% of canned vegetable supplies were exported in 1999, down from 8% a year earlier.

The net value of potato trade (export value minus import value) remained relatively constant in 1999, totaling \$386 million. The value of potato and potato-product imports increased 14% to \$420 million -- due primarily to increased imports of frozen french fries from Canada. On the export side, the value of 1999 potato and potato-product exports rose 6% to \$806 million due to a sharp rise (133%) in potato flake exports, most of which was destined for the European Union. In 2000, frozen french fries would continue to drive all potato imports higher, while export volume would decrease due to reduced flake exports to Europe.

The value of U.S. vegetable exports to China and Hong Kong combined totaled \$104 million in 1999, up 4% from a year earlier. Six commodities accounted for two-thirds of the vegetables exported to China and Hong Kong. The major items exported were frozen french fries (\$26.5 million), celery (\$7.4 million), frozen sweet corn (\$5.3 million), and canned sweet corn (\$4.8 million).

TABLE 10-6. IMPORT VALUE OF MAJOR U.S. IMPORT VEGETABLES, BY COUNTRY, 1997-99					
Fresh Market	(\$ million)				
	Canada	Mexico	Netherlands	Others	World
1997					
Tomatoes	58.97	517.05	52.91	19.74	648.67
Bell Peppers	17.55	129.89	42.54	8.32	198.30
Onions	6.86	108.93	1.19	10.22	127.20
Cucumbers	9.79	89.11	0.26	2.10	101.26
1998					
Tomatoes	100.51	567.44	64.49	25.46	757.90
Bell Peppers	30.80	171.78	52.61	10.32	265.51
Onions	12.00	120.70	2.25	15.47	150.41
Cucumbers	12.62	142.46	0.38	2.38	157.85
1999					
Tomatoes	119.69	489.59	57.17	22.87	689.32
Bell Peppers	37.93	122.04	46.01	15.78	221.76
Onions	11.65	103.65	0.94	26.35	142.59
Cucumbers	15.69	122.78	0.82	2.59	141.87
Canned vegetable					
1997					
Tomato products	31.47	1.32	12.98	47.13	92.90
Artichokes	0.00	0.68	38.49	1.98	41.15
Cucumbers	7.31	0.00	0.00	12.74	20.05
1998					
Tomato products	29.34	4.24	10.24	61.96	105.78
Artichokes	0.00	1.36	65.55	4.06	70.97
Cucumbers	10.14	0.00	0.00	11.93	22.07
1999					
Tomato products	29.19	26.95	2.76	64.50	123.39
Artichokes	0.00	1.83	77.88	4.72	84.43
Cucumbers	12.82	0.00	0.00	16.32	29.13
Frozen vegetables					
1997					
Broccoli	0.17	91.21	14.26	0.02	105.66
Cauliflower	0.63	13.42	0.87	0.20	15.12
Green peas	8.69	0.04	0.69	4.97	14.40
1998					
Broccoli	0.67	86.78	20.12	0.02	107.59
Cauliflower	0.61	12.69	1.10	0.19	14.60
Green peas	7.79	0.13	1.31	3.83	13.06
1999					
Broccoli	0.48	105.04	23.20	0.08	128.80
Cauliflower	0.76	15.55	1.08	0.76	18.15
Green peas	8.03	0.34	3.03	7.50	18.89

Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

TABLE 10-7 EXPORT VALUE OF MAJOR U.S. EXPORT VEGETABLES, BY COUNTRY, 1997-99					
Fresh Market	\$ million				
	Canada	Mexico	Japan	Others	World
1997					
Lettuce	129.64	7.46	4.53	17.51	159.14
Tomatoes	108.69	13.37	0.22	8.82	131.10
Broccoli	46.19	0.65	38.14	9.79	94.76
Onions	42.68	4.98	19.93	22.29	89.88
1998					
Lettuce	134.88	8.02	7.37	16.84	167.12
Tomatoes	107.38	3.73	0.84	8.57	120.52
Broccoli	47.36	0.49	39.54	8.55	95.93
Onions	50.14	10.31	22.26	24.37	107.07
1999					
Lettuce	131.03	8.20	4.03	16.17	159.42
Tomatoes	104.11	4.44	3.17	10.96	122.68
Broccoli	42.41	0.17	46.05	10.00	98.63
Onions	46.08	3.71	25.57	23.01	98.36
Canned vegetable					
	Canada	Japan	Taiwan	Others	World
1997					
Tomato products	109.06	30.10	11.88	97.30	248.35
Sweet corn	1.64	49.89	19.87	88.05	159.44
1998					
Tomato products	119.35	27.34	8.71	81.71	237.10
Sweet corn	1.45	51.21	11.65	86.32	150.62
1999					
Tomato products	120.77	25.44	9.73	77.68	233.62
Sweet corn	1.41	49.44	18.14	76.62	145.60
Frozen vegetable					
	Canada	Japan	Hong Kong	Others	World
1997					
Sweet corn	3.57	40.68	3.81	12.63	60.69
Green peas	3.57	3.91	0.16	1.82	9.46
1998					
Sweet corn	2.14	39.55	3.70	15.54	60.92
Green peas	3.24	3.83	0.10	2.09	9.26
1999					
Sweet corn	2.27	37.80	3.33	17.81	61.21
Green peas	3.51	3.81	0.08	2.61	10.01

Source: USDA, *Vegetable and Specialties – Situation and Outlook Yearbook*, July 2000.

Outlook

The U.S. market will continue to be a highly lucrative market for imports around the world. Low inflation continues to be part of the U.S. economic boom. Consumers are benefiting from an abundant supply of fresh produce and low prices. Consumers will eat more produce in the years to come. With only a small portion of disposable personal income (10 percent in 1999) being spent on food, desire for speed, convenience, high quality, and more varieties will drive consumers' purchase decision. The share of food dollars spent in restaurants and away from home was 48 percent in 1999, up from 39 percent in 1980.

However, for producers, commodity prices stay low, energy prices are up, and global supply further intensifies competition in the market. From digital communications, genetic engineering to better and smarter packaging, technology is exerting a substantial impact on how produce is grown, distributed, and marketed. Information technology is a key factor behind the increasing industry consolidation. According to Forrester Research Inc., Cambridge, Mass, electronic grocery sales are expected to reach \$10.8 billion by 2003. Still, that would account for just 2 percent of industry sales. On the other hand, business-to-business internet commerce is projected to reach \$1.3 trillion by 2003. *FoodTrends 2000* (an annual study on purchasing trends in the food industry conducted by *The Packer*) showed increases in electronic sourcing at three market segments. Fifty percent of restaurants, 66 percent of wholesalers/distributors, and 65 percent of food processors used electronic orders in 2000, up from 23 percent, 54 percent, and 42 percent, respectively, in 1999. With the belief that e-commerce will streamline supply chain management, and armed with the support from venture capital companies, the emergence of produce e-commerce web-sites is a trend worth watching.

Category	1994	1998	2003 (Projected)
		\$ million	
Fresh-cuts	2,282	6,423	12,950
Packaged salads	461	1,403	2,514
All other fresh-cuts	1,821	5,020	10,436
Organic	463	1,353	3,435

Source: Packaged Facts Report, Klorama Academic

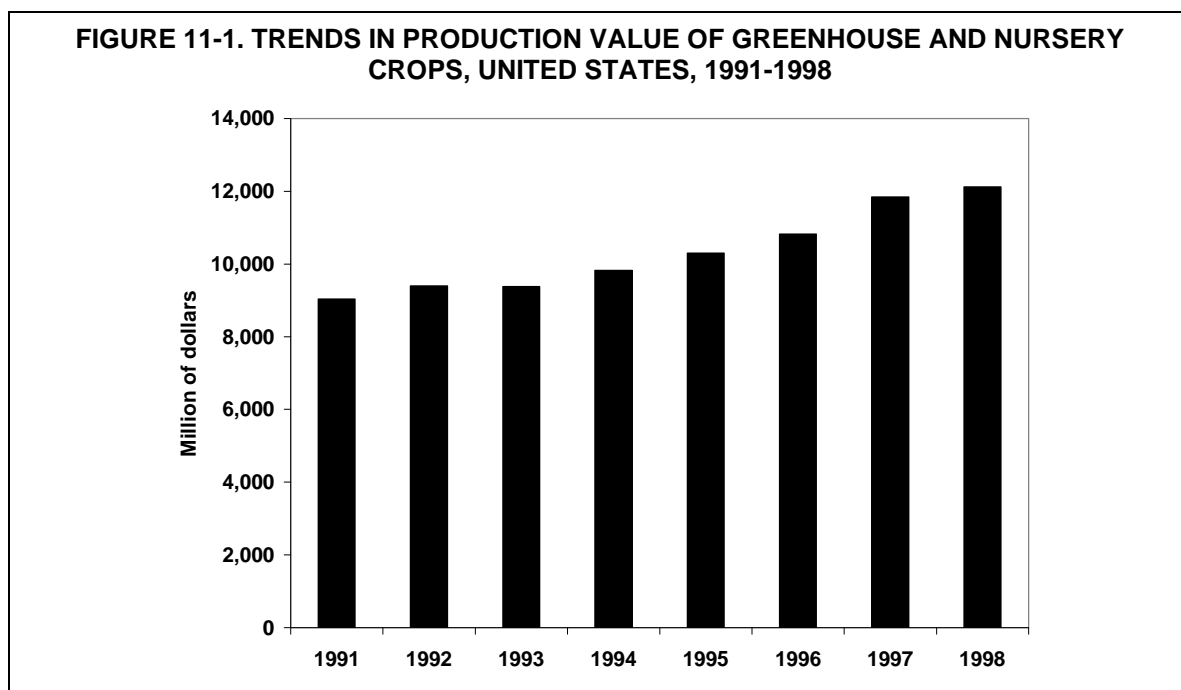
Efforts to differentiate and add value to products will result in growing opportunities for smaller marketers. Fresh-cut (precut) produce consumption continues to grow because of the tight labor market in the foodservice industry, consumers' desire for convenience, and the produce industry's effort to create new products. Vegetables that are commonly sold precut include broccoli florets, brussel sprouts, carrots, cauliflower florets, cole slaw, long beans, mixed greens, salads, salad kits, and soup vegetables. Based on a study conducted by Anderson, Logan and Henehan at Cornell University, the food service segment represents approximately 55 percent of the total U.S. fresh-cut industry of \$8.5 billion. Northeast fresh-cut food service purchases represent approximately \$300 million. The largest fresh-cut food service market segments are fast food and casual/family dining. The Kalorama Information's *Packaged Fact* report estimated that retail sales of packaged salads and other precut produce (fruits and vegetables) exceeded \$6.4 billion in 1998 and is projected to approach \$13.0 billion. Packaged precut salads surpassed \$1.4 billion in 1998 and are expected to surpass \$2.5 billion by 2003. The fact that much fresh cut produce is packaged, is conducive to branding and allow the industry to stimulate sales with logo and mass advertising and promotion.

The organic category is growing nationwide. Retail sales of organic vegetables and fruits (whether cut or uncut) approached the \$1.4 billion mark in 1998. Organic produce is increasing about 10-12 percent annually in the past decade although it represents only about 2 percent of retail produce sales. However, annual sales growth for organic produce have tapered off in recent years, having peaked at more than 32 percent in 1996. *FoodTrends 2000* showed that about one-third of consumers said they had bought organic produce in the first six months of 2000. Eight-two percent of consumers who purchased organic produce said they purchased vegetables. The top three fresh organic vegetables purchased by consumers were tomatoes (46 percent), leafy vegetables (16 percent), and carrots (14 percent). While organic produce is becoming more mainstream, organic growers face the same challenges as the conventional growers – fewer buyers, bigger competitors, more product competition, narrower price differentiation with conventional produce, and how to expand consumer demand. While demand for organic products is still growing, growers need to prepare for strong competition by better crop planning, closer coordination with buyers, and expanding consumer education efforts. Other efforts to differentiate products include niche branding and specialty marketing (vegetarian, ethnic, and gourmet marketing, etc.). Food-borne illness, pesticide usage, environmental protection, generic engineering technology, worker protection, and world trade issues will continue to take high profile with government regulation and different groups which will influence the industry in 2001 and beyond.

Chapter 11. Ornamentals

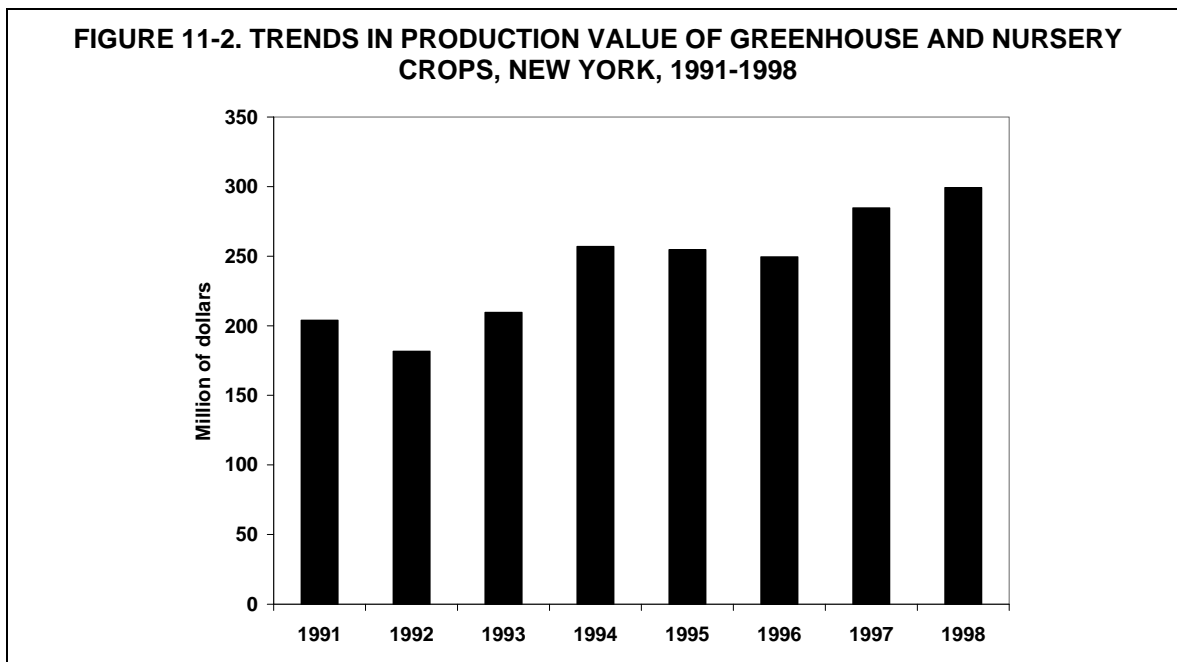
Wen-fei L. Uva, Senior Extension Associate

Consumer confidence in a robust U.S. economy, along with relatively high disposable income and low unemployment, helped stimulate the remarkable growth of flower and plant product sales. Low interest rates spurred new housing and business start-ups, further helping fuel the demand for landscaping products and service. Grower cash receipts for U.S. greenhouse and nursery crops (including Christmas trees and food crops), as estimated by USDA's 1998 Census of Horticultural Specialties, reached \$10.6 billion or 11 percent of total crop sales in the nation. The ornamental horticultural industry – or nursery and greenhouse sector – includes floriculture (cut flowers and cultivated greens, potted flowers, foliage plants, and garden/bedding plants) and environmental horticulture (trees, outdoor plants, bulbs, turfgrass, and ground covers **except** bedding and garden plants). Forty-two percent of grower receipts in the ornamental horticultural industry were from floriculture crops, and 29 percent were from nursery plants. The top five leading states, ranked by their share of grower receipts in 1998, were California (21 percent), Florida (13 percent), Oregon (6 percent), Pennsylvania (6 percent), and Texas (4 percent). The top two marketing channels used by U.S. ornamental horticulture growers are re-wholesalers (25 percent of total sales) and retail garden centers/nurseries (18 percent). The industry had a total payroll of \$3.6 billion in 1998 from about 20,000 operations with more than \$10,000 annual sales.



Source: USDA, Floriculture and Environmental Horticulture – Situation and Outlook Yearbook

The New York greenhouse and nursery crop production (including food crops grown in greenhouses and Christmas trees) in 1999 was estimated to be \$294 million in New York, up 2 percent from \$288 million in 1998. This value was about 10 percent of total grower receipts from agricultural commodities in the nation or 28 percent of total crop receipts in the state. New York greenhouse and nursery production ranked tenth in the nation with 2 percent share of total commercial sales. According to the 1998 Census of Horticultural Specialties, the annual bedding/garden plant category had the highest production value (47 percent of total grower receipts) among all ornamental crops produced in 1998 in New York, followed by nursery plants (19 percent). The most important marketing channels used by New York growers are retail garden centers/nurseries (31 percent of total sales) and direct sale to consumers (20 percent). The New York greenhouse and nursery industry had 805 operations with annual sales over \$10,000 in 1998, and they had a total payroll of \$88 million and employed 8,818 laborers (year-round and seasonal).



Source: USDA, Floriculture and Environmental Horticulture – Situation and Outlook Yearbook

Marketing channels	U.S.	% of total sales	New York	% of total sales
	\$ million		\$ million	
Direct sale to consumers	1,381.5	13%	52.9	20%
Retail florists	260.3	2%	8.2	3%
Retail garden centers/nurseries	1,892.8	18%	82.1	31%
Supermarkets/groceries	800.9	8%	5.8	2%
Other mass marketers	1,414.9	13%	43.7	16%
Landscape contractors	1,478.3	14%	27.3	10%
Re-wholesalers	2,679.5	25%	33.1	12%
Others	682.3	6%	12.1	5%
Total	10,590.5	100%	265.2	100%

^a Wholesale value of sales as reported by growers with sales of \$10,000 or more during 1998.
Source: USDA, 1998 Census of Horticultural Specialties.

Commodity	U.S.	% of total sales	New York	% of total sales
	<i>\$ million</i>		<i>\$ million</i>	
Annual bedding/garden plants	1,840.0	17%	123.9	47%
Potted flowering plants	615.8	6%	13.2	5%
Foliage plants	517.9	5%	0.7	0%
Cut flowers and cultivated greens	639.1	6%	8.2	3%
Unfinished plants, propagative materials & transplants	579.7	5%	12.9	5%
Herbaceous perennial plants (inc. bulbs etc.)	313.4	3%	9.3	3%
Nursery plants	3,155.1	30%	49.6	19%
Turfgrass sod, sprigs or plugs	841.4	8%	20.3	8%
Greenhouse produced food crops	220.1	2%	2.3	1%
Cut Christmas trees	246.1	2%	3.2	1%
Cultivated mushrooms	861.5	8%	2.4	1%
Others	769.2	7%	20.1	8%
Total	10,599.4	100%	266.1	100%

^a Wholesale value of sales as reported by growers with sales of \$10,000 or more during 1998.

Source: USDA, 1998 Census of Horticultural Specialties.

Floriculture Crop Production

Floriculture crops are very important for the New York ornamental horticulture industry. It accounted for 55 percent of the total greenhouse and nursery crop production value in New York in 1999. New York floriculture production value ranked sixth in the nation. The production value reached \$160 million in 1999, up 1 percent from \$158.8 million in 1998, although the number of commercial growers of floriculture crops decreased for the second consecutive year. Value of sales in 1999 increased for bedding/garden plants and foliage plants and decreased for potted flowering plants and cut flowers, compared with a year earlier. There were 689 operations reporting production of floriculture crops in 1999. Both New York and the United States reported decreased grower numbers for the two smaller size groups - \$10,000 to 19,999 and \$20,000 to 39,999 - and also the \$100,000 to 499,999 group.

The 1999 wholesale value of floriculture crops for growers in the U.S. with sales of \$10,000 or more is estimated at \$4.10 billion, up 4 percent from 1998. California was again the leading state with crops valued at \$796 million, up 1 percent from a year earlier. Florida was up 7 percent from 1998 with \$671 million in wholesale value. Bedding/garden plants saw another large increase in production value during 1999 to \$1.95 billion, up 4 percent from 1998. Within the bedding/garden plant category, potted bedding/garden plants totaled \$824 million, a 4 percent decrease for the year, and the value of bedding/garden flats rose 12 percent from 1998 to \$901 million in 1999. Of the specified bedding plants in the USDA survey of Floriculture Crops, potted geraniums (from cuttings and seed) returned the highest value to growers, \$148 million, about the same as the year before. Impatiens flats provided the second largest amount at \$115 million.

Flowering hanging baskets accounted for \$221 million in 1999, a 7 percent gain over 1998, mainly due to higher prices for all crops. Value of potted flowering plants totaled \$765 million, up 4 percent from 1998. The value of foliage plant production recorded a 1 percent gain, totaling \$509 million. The wholesale value of domestically produced cut flowers gained 3 percent in 1999, totaling \$426 million, and cut cultivated greens gained 8 percent in value to \$127 million in 1999.

Gross value of sales	U.S. ^a				New York			
	1997	1998	1999	Change 98-99	1997	1998	1999	Change 98-99
	# of growers				# of growers			
\$10,000 – 19,999	1,700	1,686	1,377	-18%	140	107	75	-30%
\$20,000 – 39,999	2,038	2,209	1,664	-25%	176	193	119	-38%
\$40,000 – 49,000	920	755	847	12%	65	52	58	12%
\$50,000 – 99,000	2,804	2,410	2,795	16%	201	161	190	18%
\$100,000 – 499,000	3,415	3,643	3,204	-12%	248	239	184	-23%
\$500,000 or More	1,829	1,556	1,593	2%	67	50	63	26%
Total	12,717	12,259	11,480	-6%	897	802	689	-14%

^a From 36 states surveyed by USDA Floriculture Crop Summaries
Source: USDA Floriculture Crops 1999 Summary.

Plant Category	Producers Reporting			Quantity Sold			Value of Production		
	1997	1998	1999	1997	1998	1999	1997	1998	1999
	-- (# of producers)--			---(1,000 flats, pots, or baskets)--			---(\$ million)--		
Bedding/Garden Plants									
Geranium, Flats	60	39	45	248	130	173	2.23	1.50	1.63
Impatiens, Flats	198	176	161	1,659	1,244	878	11.55	6.66	5.94
Petunia, Flats	196	180	162	457	504	422	2.88	2.93	3.11
Other Flowering & Foliar, Flats ²	211	204	211	2,394	2,960	2,591	14.24	17.97	17.75
Vegetable, Flats	179	114	153	634	925	665	4.60	4.73	4.61
Garden Chrysanthemums, Potted	158	133	151	3,606	2,555	4,802	5.47	6.52	8.03
Geranium, Potted - Cuttings	202	188	172	5,194	5,014	5,157	7.49	8.21	8.40
Geranium, Potted - Seed	47	44	39	3,747	3,159	3,240	2.89	2.61	2.73
New Guinea Impatiens, Potted	162	163	159	1,424	2,347	2,515	2.24	4.00	4.20
Other Flowering & Foliar, Potted ³	178	193	165	7,762	13,584	10,536	11.13	22.40	18.85
Geranium Hanging Baskets	190	140	164	252	278	376	1.79	1.93	2.32
Other Flowering Hanging Baskets ⁴	202	165	193	713	971	932	4.06	5.88	6.70
Potted Flowering Plants									
African Violets	16	16	15	1,276	1,358	1,644	1.29	1.31	1.62
Finished Florist Azaleas	47	30	35	3,923	1,867	1,878	8.14	5.30	5.52
Easter lilies	79	59	70	3,383	678	706	10.33	2.32	2.40
Poinsettias	135	119	124	3,131	3,104	3,392	8.58	8.76	10.757
Other Potted Flowering Plants ⁵	87	96	74	1,261	5,241	4,134	3.24	10.86	8.83
Foliage Plants									
Potted Foliage	42	33	30	N/A	N/A	N/A	1.37	0.93	0.84
Foliage Hanging Baskets	51	28	40	126	300	351	0.55	1.26	1.42
Cut Flowers				1,000 stems					
Gladioli	8	4	9	106	61	92	0.04	0.03	0.02
Other Cut Flowers ⁶	28	22	23	N/A	N/A	N/A	1.86	3.09	2.78

¹ For growers with sales of \$100,000 or more.

² Excluding geraniums, impatiens, New Guinea impatiens, and petunia flats.

³ Excluding hardy/garden chrysanthemums, geraniums (cuttings and seed), impatiens, New Guinea impatiens, and petunia pots.

⁴ Excluding geranium, impatiens, New Guinea impatiens, and petunia hanging baskets.

⁵ Excluding blooming annuals, African violets, florist chrysanthemums, finished florist azaleas, Easter lilies, poinsettias, cyclamen, and Kalanchoe.

⁶ Excluding cut chrysanthemums (standard and pompon), gladioli, and roses (hybrid tea and sweetheart).

N/A: Data not available.

Source: *New York Agricultural Statistics*, 1999-2000.

Consumption

Retail expenditures for nursery and greenhouse products (excluding Christmas trees, seeds, and food crops) reached \$54.6 billion, or \$203 per capita, in 1998, up \$2.9 billion (5.5 percent) from 1997. This value included retail sales value of green goods and associated products and accessories through all marketing channels including delivery, installation, landscaping, and related service. Environmental horticulture products generated \$38 billion in retail sales (\$141 per capita) while floriculture product sales totaled \$16 billion (\$61 per capita). Extrapolating the total retail expenditure from the New York population (18.2 million in 1998) as estimated by U.S. Census Bureau, the total retail expenditure on floriculture and environmental products are \$3.7 billion in New York. Based on the 1998-1999 National Gardening Survey, about half (47 percent) of U.S. households participated in lawn care activities in 1997, followed by flower gardening (39 percent), and raising indoor houseplants (29 percent).

	Per capita (\$ dollars)			NY total retail expenditure (\$ million) ^a
	1996	1997	1998	1998
Cut flowers and cultivated greens	30.05	30.67	31.61	575.19
Bedding/garden plants	20.11	21.88	23.48	427.26
Potted flowering plants	14.1	14.18	14.55	264.76
Potted foliage plants	12.07	12.46	13.05	237.47
Environmental horticulture	109.23	120.38	119.99	2,183.41
Total	185.56	199.57	202.68	3,688.09

^a Based on U.S. Bureau of Census resident population estimates as of July 1, 1998.

Source: USDA, Floriculture and Environmental Horticulture – Situation and Outlook Yearbook.

Activity ^a	% of households participating		Per household expenditure (\$)	
	1996	1998	1996	1998
Lawn Care (D-I-Y)	47	47	154	190
Flower Gardening	37	39	82	102
Indoor Houseplants	31	29	31	46
Vegetable Gardening	26	24	53	84
Shrub Care	25	25	63	93
Insect Control	24	22	75	77
Flower Bulbs	21	21	29	33
Tree Care	20	18	105	145
Landscaping	22	22	223	337

^a Additional segments not included in the table: fruit trees, raising transplants, container gardening, growing berries, ornamental gardening, herb gardening, and water gardening.

Source: National Gardening Survey, various years.

Trade

Overall, U.S.-grown products accounted for 91.5 percent of domestic sales of nursery and greenhouse products in 1998. Foreign competition is the strongest in floriculture, where the U.S. share of 1998 domestic sales was 72.8 percent (down 1.3 percent from 1997). Cut flowers accounted for 60 percent of the \$1.1 billion imports of floral and nursery products in 1998. U.S. growers scaled back the area planted to production of cut flowers and cultivated greens because of competition from imports. The U.S. share of sales of domestic retail cut flower and cultivated greens dropped to 45 percent. Nevertheless, grower sales of U.S.-grown cut flowers and cultivated greens were up 4 percent in 1998. Despite modest gains in grower cash receipts in 1998, grower sales of the major cut flowers, including roses, carnations, chrysanthemums, and gladioli, were lower. Production of specialty cut flowers (such as snapdragons, baby's breath, statice, gerbera daisies, sunflowers, and asters) continues to increase. Many of these crops are field-grown rather than greenhouse-grown.

In contrast, U.S.-grown environmental horticulture products accounted for 97.3 percent of the U.S. retail sales market. The relatively fast growth of domestic grower receipts for bedding and garden plants has occurred partly because imports are generally restricted for phytosanitary reasons, and international shipments of plants in growing media is costly. Therefore, these products have little or no import competition.

TABLE 11-7. U.S. GREENHOUSE AND NURSERY CROP PRODUCTION RECEIPTS AND TRADE, 1996-1997

	Production and trade			Retail expenditures ¹	
	U.S. grower receipts	Imports	Exports	Total	Domestic Share
	\$ million			\$ million	%
Floriculture indoor products ²					
1996	2,245.7	692.7	106.0	14,911.2	75.3
1997	2,268.0	753.9	106.8	15,572.6	74.1
1998	2,345.1	830.0	124.0	16,411.4	72.8
Environmental horticulture ³					
1996	8,660.0	257.5	119.4	34,534.0	97.1
1997	9,125.3	248.6	130.0	36,167.5	97.3
1998	9,654.9	260.0	140.0	38,185.0	97.3
Total nursery and greenhouse products					
1996	10,875.8	950.2	225.4	49,445.2	91.8
1997	11,393.3	1,002.6	236.8	51,740.1	91.8
1998	12,000.0	1,090.0	264.0	54,596.4	91.5

¹ Includes services such as landscaping, installation, and maintenance.

² Includes cut flowers and cultivated greens, and potted plants.

³ Includes bedding/garden plants, nursery stock, turfgrass, bulbs, and groundcovers.

Source: USDA, Floriculture and Environmental Horticulture – Situation and Outlook Yearbook.

Outlook

The growth in “big box” mass marketers is driving the merger trend in the industry. The independent marketers and small/medium producers need to be more market-oriented and offer more products to remain competitive and profit from the niches that consolidators and non-domestic growers ignore. Increased service and quality are the keys. The industry is making great strides in two key areas – technology and consumer relationship. E-commerce initiatives are on the rise. Based on a survey conducted by *Garden Center* magazine, 36 percent of retail garden centers surveyed offered on-line shopping in 2000, doubling from 18 percent in 1999. The business-to-business e-commerce activities are expected to expand as well. Almost half of retail garden centers plan to adopt web-based electronic data interchange (EDI) within two years, and 23 percent are implementing extranet in 2000. More retailers (florists and garden centers) will seek more direct relationships with growers in pursuit of better service, perceived higher quality and lower prices.

Despite increasing competition from imports, greenhouse and nursery industry sales will likely continue to grow with strong demand from consumers, businesses, and institutions for flowers, indoor greenery, and outdoor plants. Bedding plants will continue to dominate the industry in the foreseeable future and will continue to displace cut-flower production. According to the Census of Retail Trade, between 1992 and 1997 the number of retail florists declined for the first time in 25 years, and this decline will continue. Gardening is on the rise as baby boomers age and adopt this hobby. Demand for floral and nursery-related products generally links closely to the health of the general economy. In nominal terms, producer prices for most greenhouse and nursery crops have been fairly stable; volume increases will continue to push grower sales upward in most crop categories.

More growers will provide on-site service to mass-market garden center departments in order to monitor inventory, boost sales and ensure that the grower’s product is handled properly. Flowers are no longer the only gift available for delivery across the country within 24 hours. The increasing complexity of the marketplace due to internet access, 800 numbers and overnight delivery combined with the strategic efforts of consolidators in the ornamental horticulture industry will force all businesses to increase their production efficiencies and adopt more sophisticated marketing and financial management practices.